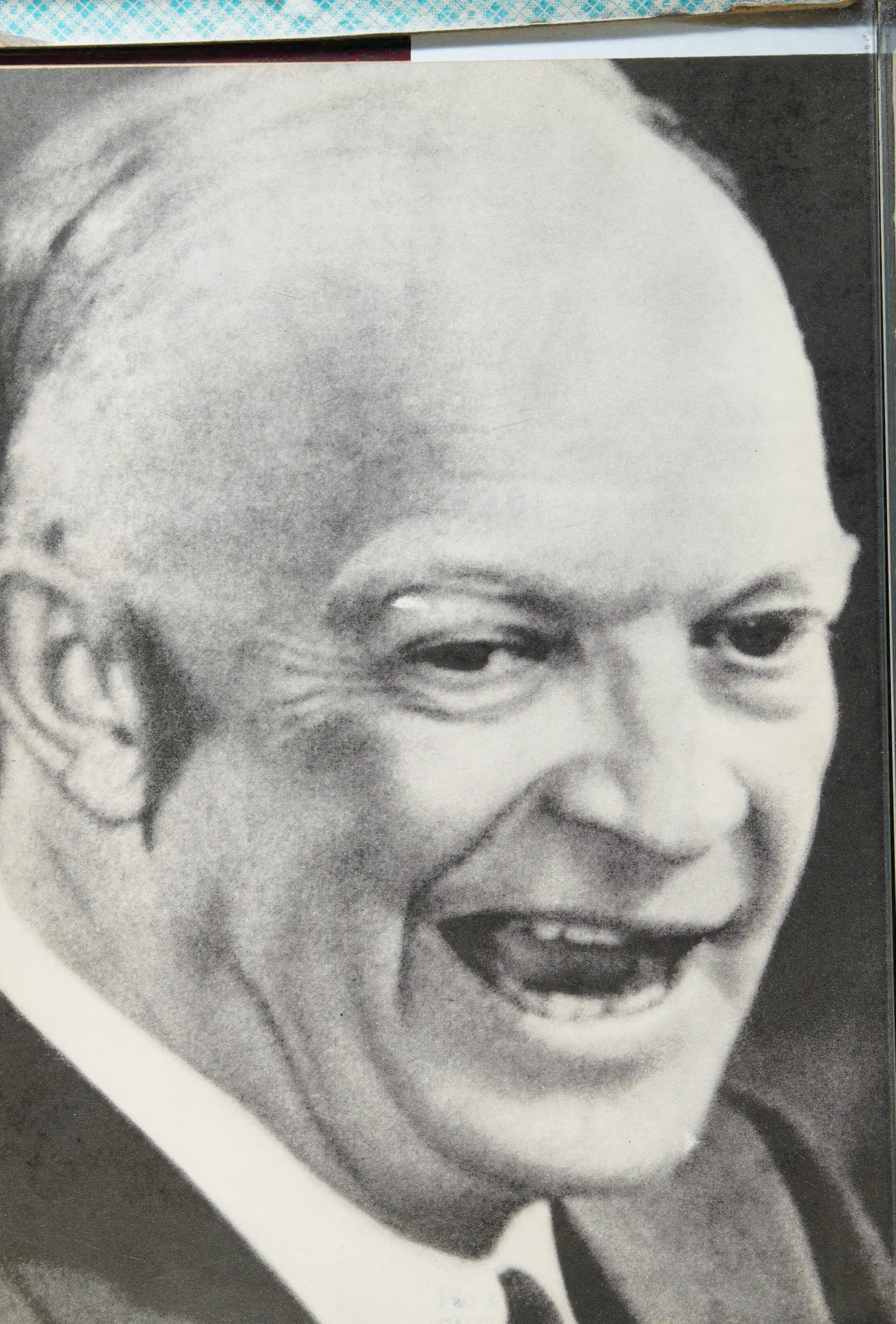


1953 BRITANNICA BOOK OF THE YEAR



*A Record of
the March of Events
of 1952*

BRITANNICA **BOOK OF THE YEAR**
1953

Prepared

Under the Editorial Direction of

WALTER YUST

Editor of Encyclopædia Britannica

Published by **ENCYCLOPÆDIA BRITANNICA, INC.**

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THE EDITOR

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INTRODUCTION

IT IS A PLEASURE to announce that the present *Britannica Book of the Year* is available to Britannica subscribers in March—two months earlier than it has ever been before. This has been accomplished in spite of the fact that the enormous increase from year to year in the distribution of the volume has extended the period of production, even with presses running at capacity.

Subscribers wished to secure the volume earlier in the year. And it was recognized that this could be done without impairing the book's value by advancing the closing date for the bulk of the material. Coverage of the present volume closes with November 1, and the following years' issues will cover the twelve months from November to November.

The pattern of the year's events is largely set by the time November rolls around. The U.S. government's fiscal year ends June 30, and in many other areas of interest the statistical year's span closes long before January 1. However, as in the past, the Calendar of Events and the Obituary List will continue to include items from January 1 to January 1. These two listings and the coverage of the November election results were the last material sent to the printer in 1952.

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This sixteenth issue of the *Book of the Year* was made possible by not only its six hundred and more authoritative contributors but by the splendid co-operation of that portion of the Encyclopædia Britannica permanent editorial staff which bears the burden of *Book of the Year* production.

Among subeditors who checked for accuracy and prepared copy for the printer were: Melvina G. Hilland, Kathleen Ray, Daphne M. Daume, Joyce M. Usher, Ruth D. Asch, Olive S. Ricklefs, and Judith Miller. Others active in the work were indexers: Mildred W. Benson, Claire E. Drullard and Joan E. Stephenson; the copy control section which checked flow of copy to and from the printer: Felicité Buhl, Frances E. Latham and Katherine E. Van Milligan; Alice Toth, who prepared correspondence with contributors, assisted by Paula Buchwald and Donna Greenspahn; Joan Sayler, who helped lay out the pages of the volume; general editorial assistants Donald E. Stewart, Philip W. Goetz, and Russell Mahood; the geographer, Myldred Dingwall; map and chart maker, Victor Figueroa; typists: Florence S. Samuelson, Ruth S. Bicking, and Rita M. Trojan.

The work of this staff was under the general management of Mae H. MacKay and her two associates, Harriet Milburn and Lorene Lawson.

WALTER YUST

EDITORS AND CONTRIBUTORS

WALTER YUST, *Editor of Encyclopædia Britannica and of the Britannica Book of the Year*

HOWARD E. KASCH, *Associate Editor of the Britannica Book of the Year*

RUTH SOFFER, *Picture Editor*

(Initials and names of contributors to the Britannica Book of the Year with the principal articles written by them. The arrangement is alphabetical by initials.)

- A.A.At.** **Mathematics**
A. ADRIAN ALBERT. Professor of Mathematics, The University of Chicago; Chairman, Division of Mathematics, National Research Council. Author of *Modern Higher Algebra*; etc.
- A.A.P.** **Greece (in part)**
ALEXANDER A. PALLIS. Minister Plenipotentiary attached to the Greek Embassy; Director of the Greek Office of Information, London, Eng. Author of *Greece's Anatolian Venture—and After*; etc.
- A.B.Bu.** **Mississippi**
ALFRED B. BUTTS. Technical Civilian Educational Adviser, Office of the Adjutant General, U.S. Army. Author of *Public Administration in Mississippi*.
- Ad.B.** **Illinois**
ADOLPH BELVAL, JR. Informational Representative, Division of Department Reports, State of Illinois, Springfield, Ill.
- A.Dr.** **Textile Industry (in part)**
ALFRED DAWBER. Editor, *Textile Manufacturer*, Manchester, Eng.
- A.Flo.** **Latin-American Literature**
ANGEL FLORES. Chairman of Latin American Area Studies and Professor of Latin American Literature, Queens College, Flushing, N.Y.
- A.G.Br.** **Dyestuffs (in part)**
ANSO G. BRUINIER, JR. Technical Advertising Manager, Dyes and Chemicals Division, Organic Chemicals Department, E. I. du Pont de Nemours & Company, Inc., Wilmington, Del.
- A.G.L.I.** **Hospitals (in part)**
A. G. L. IVES. Secretary, King Edward's Hospital Fund for London, London, Eng. Author of *British Hospitals*.
- A.G.S.** **Insurance (in part)**
ANTONE G. SINGSEN. Assistant Director, Blue Cross Commission, American Hospital Association; Assistant Secretary-Treasurer, Health Service, Inc.
- A.H.J.B.** **Canals and Inland Waterways (in part)**
ALFRED HENRY JAMES BOWN. General Manager and Clerk, River Wear Commissioners, Sunderland, Eng.
- A.H.Ld.** **Forests (in part)**
ARTHUR HENRY LLOYD. Lecturer in Forestry, Oxford University, Oxford, Eng.
- A.H.Md.** **Betting and Gambling (in part); Contract Bridge (in part)**
ALBERT H. MOREHEAD. Editor, *The Official Rules of Card Games*. Bridge Editor, *The New York Times*. Author of *The Modern Hoyle*; etc.
- A.J.A.** **Social Security (in part)**
A. J. ALTMAYER. Commissioner, Social Security Administration, Federal Security Agency, Washington, D.C.
- A.J.Ar.** **Industrial Health (in part)**
ARTHUR JOSEPH AMOR, M.D. Principal Medical Officer, Imperial Chemical Industries, Ltd. Author of *X-Ray Atlas of Silicosis*; etc.
- A.J.Li.** **Liquors, Alcoholic (in part)**
ALFRED J. LIEBMANN. President, Schenley Research Institute, New York, N.Y.
- A.J.Me.** **Angling**
A. J. McCLANE. Fishing Editor, *Field & Stream*.
- A.J.Rr.** **Nobel Prizes; etc.**
ANNE J. RICHTER. Book Editor, R. R. Bowker Company, New York, N.Y.; Editor, *The Literary Market Place*.
- A.LeR.L.** **Negroes, American**
ALAIN LEROY LOCKE. Professor of Philosophy, Howard University, Washington, D.C. Author of *The Negro in America*; etc.
- A.Md.** **Islam**
ABDUL MAJID. Imâm of the Mosque, Woking, Eng. Editor, *Islamic Review*, Woking, Eng.
- A.M.Ds.** **Municipal Government (in part)**
AUDREY M. DAVIES. Librarian, Institute of Public Administration, New York, N.Y.
- A.Mu.** **Dance (in part)**
ARTHUR MURRAY. President, National Institute of Social Dancing. Author of *How to Become a Good Dancer*; *Modern Dancing*; etc.
- A.N.P.** **Florida**
ANCIL N. PAYNE. Associate Professor of History, University of Florida, Gainesville, Fla.
- A.O.** **Surgery**
ALTON OCHSNER, M.D. Director, Section on Surgery, Ochsner Clinic, New Orleans, La. William Henderson Professor of Surgery and Chairman, Department of Surgery, School of Medicine, Tulane University of Louisiana, New Orleans, La.
- A.O.C.** **Aviation, Civil (in part)**
AUBREY OLIVER COOKMAN, JR. Associate Editor, *Aviation, Popular Mechanics Magazine*, Chicago, Ill.
- A.Pr.** **Russian Literature; etc.**
ANDRÉ PIERRE. Member of editorial staff of *Le Monde*, Paris. Author of *Vie de Tolstoi* (Paris); *U.R.S.S.* (Paris); etc.
- Ar.B.** **German Literature**
ARNOLD BERGSTRAESSER. Professor of German Cultural History, The University of Chicago, Chicago, Ill. Author of *Goethe's Image of Man and Society*; etc.
- Ar.Mo.** **Electrical Industries (in part)**
ARY MOSSIMAN. Statistician, *Electrical World*, New York, N.Y.
- A.R.My.** **Aliens (in part); Immigration and Emigration (in part)**
ARGYLE R. MACKEY. Commissioner, Immigration and Naturalization Service, U.S. Department of Justice, Washington, D.C.
- A.Ste.** **Exchange Control and Exchange Rates**
ALEXANDER STEVENSON. Department of Operations (Europe, Africa and Australasia), International Bank for Reconstruction and Development, Washington, D.C.

- A.T.Cl.** **New Zealand (in part)**
ARTHUR TREVOR CAMPBELL. Public Relations Officer, New Zealand High Commission, London, Eng.
- A.W.Gv.** **Shipping, Merchant Marine (in part)**
ALBERT W. GATOV. Chairman, Federal Maritime Board; Administrator, Maritime Administration, U.S. Department of Commerce, Washington, D.C.
- A.Wt.** **Smithsonian Institution**
ALEXANDER WETMORE. Secretary, Smithsonian Institution, Washington, D.C.
- B.A.** **Community Chest**
BARBARA ABEL. Editor, Public Relations Department, Community Chests and Councils of America, Inc.
- B.Bt.** **Alabama**
BURNS BENNETT. Director, Bureau of Publicity and Information, State of Alabama, Montgomery, Ala.
- B.C.R.** **Labour Unions (in part)**
BENJAMIN CHARLES ROBERTS. Lecturer in Trade Union Studies, London School of Economics, University of London, London, Eng.
- B.D.M.** **Utah**
BRIGHAM D. MADSEN. Associate Professor of History, Brigham Young University, Provo, Utah.
- B. Fy.** **Machinery and Machine Tools**
BURNHAM FINNEY. Editor, *American Machinist*, New York, N.Y.
- B.H.** **Judaism; etc.**
BERNARD HELLER. Visiting Professor of Ethics and Philosophy of Religion, Hebrew Union College, Jewish Institute of Religion, New York, N.Y.; Lecturer; Member, Board of Directors, Jewish Cultural Reconstruction. Author of *A Harvest of Weeds; Epistle to An Apostate; The Odyssey of a Faith*; etc.
- B.L.** **Lumber (in part)**
BRYAN LATHAM. Former President, Timber Trade Federation of the United Kingdom, London, Eng. Member of the Governing Council of the Empire Forestry Association, London, Eng.
- B.L.B.** **Immigration and Emigration (in part)**
BERTHA LILIAN BRACEY. European Specialist, United States High Commission for Germany.
- B.M.St.** **Civil Aeronautics Administration**
BEN M. STERN. Director, Office of Aviation Information, Civil Aeronautics Administration, U.S. Department of Commerce, Washington, D.C.
- B.O.M.** **Dams**
BYRON O. MCCOY. Hydraulic Engineer, Chas. T. Main, Inc., Boston, Mass.
- B.R.P.** **Thailand (in part); etc.**
BERTIE REGINALD PEARN. Former Professor of History, University of Rangoon, Rangoon, Bur. Author of *History of Rangoon; The Indian in Burma*; etc.
- Br.S.** **Crime (in part); Police**
BRUCE SMITH. Secretary and Acting Director, Institute of Public Administration, New York, N.Y. Author of *Police Systems in the U.S.; The State Police*; etc.
- B.Sk.** **Gliding**
BEN SHUPACK. Director, The Soaring Society of America, Inc., Elmira, N.Y.
- B.T.S.** **Agricultural Research Administration**
BYRON T. SHAW. Administrator, Agricultural Research Administration, U.S. Department of Agriculture, Washington, D.C. Editor, *Soil Physical Conditions and Plant Growth*.
- B.Y.L.** **Church Membership (in part)**
BENSON Y. LANDIS. Associate Director, Central Department of Research and Survey, National Council of the Churches of Christ in the U.S.A., New York, N.Y.
- C.A.Bn.** **Plastics Industry**
CHARLES A. BRESKIN. Publisher, *Modern Plastics*, New York, N.Y.
- C.A.Hh.** **Hotels (in part)**
CHARLES A. HORRWORTH. Executive Vice-President, American Hotel Association.
- C.A.K.** **Stocks and Bonds (in part)**
CHESTER A. KLINE. Assistant Professor of Insurance, Wharton School of Finance and Commerce, University of Pennsylvania, Philadelphia, Pa. Author of *Windstorm Insurance*.
- C.A.Sp.** **Oregon**
CHARLES A. SPRAGUE. Editor, *The Oregon Statesman*, Salem, Ore.
- C.A.Va.** **Puerto Rico**
CARLOS A. VILÁ. Division of Statistics, Bureau of the Budget, Government of Puerto Rico, San Juan, P.R.
- C.B.Hr.** **Botany (in part)**
CHARLES B. HEISER, JR. Associate Professor and Curator of the Herbarium, Indiana University, Bloomington, Ind.
- C.Cy.** **Canada; Canadian Literature (in part); etc.**
CHARLES CLAY. Writer. Former Director, Canadian Research and Editorial Institute, Ottawa, Ont. Author of *Young Voyageur; Muskrat Man*; etc.
- C.D.He.** **Mexico (in part)**
C. DAVID HELLYER. Assistant Director, School of Inter-American Studies, University of Florida, Gainesville, Fla.
- C.D.Hu.** **Chemistry**
CHARLES D. HURD. Clare Hamilton Hall Research Professor of Chemistry, Northwestern University, Evanston, Ill.
- C.E.A.** **Tennessee**
CHARLES E. ALLRED. Professor of Agricultural Economics and Rural Sociology, University of Tennessee, Knoxville, Tenn.
- C.E.An.** **Minnesota**
C. ELMER ANDERSON. Governor of the State of Minnesota.
- C.E.Cn.** **South Carolina**
CHARLES EDWARD CAUTHEN. Chairman of the Department of History, Wofford College, Spartanburg S.C.
- C.E.Fe.** **Vermont**
CLARA E. FOLLETTE. Secretary, Librarian and Museum Director, Vermont Historical Society, Montpelier Vt.
- C.E.Mc.** **Cuba (in part); etc.**
CONSTANTINE EDWARD MCGUIRE. Economic Adviser. Author of *Italy's International Economic Position*; etc.
- C.E.R.** **Forests (in part)**
CHARLES EDGAR RANDALL. Information Specialist, Division of Information and Education, Forest Service, U.S. Department of Agriculture, Washington, D.C. Author of *Our Forests*; etc.
- C.E.R.S.** **Railroads (in part)**
CHARLES ELY ROSE SHERRINGTON. Secretary, Railways Research Service, and Director, Research Information Division, British Transport Commission, London, Eng. Author of *100 Years of Inland Transport*; etc.
- C.F.Cg.** **Telephone**
CLEO F. CRAIG. President, American Telephone and Telegraph Company, New York, N.Y.
- C.F.Ke.** **Automobile Industry**
CHARLES F. KETTERING. Director and Former Vice-President, General Motors Corporation, Detroit, Mich.
- C.F.Ls.** **Pittsburgh**
CHARLES F. LEWIS. Director, The Buhl Foundation, Pittsburgh, Pa.
- C.F.Sz.** **Debt, National; Budget, National; etc.**
CHARLES F. SCHWARTZ. Assistant Chief, National Income Division, U.S. Dept. of Commerce, Washington, D.C.
- C.H.A.** **West Virginia**
CHARLES H. AMBLER. Professor Emeritus, West Virginia University, Morgantown, W.Va. Author of *West Virginia, The Mountain State; George Washington and the West; A History of Education in West Virginia*; etc.
- Ch.C.** **Cancer**
CHARLES S. CAMERON, M.D. Medical and Scientific Director and Vice President of the American Cancer Society, Inc., New York, N.Y.
- C.H.G.T.** **Banking (in part)**
C. H. GORDON TETHER. Money Market Editor, the *Financial Times*, London, Eng.
- Ch.Ra.** **Housing (in part); etc.**
CHESTER RAPKIN. Research Associate, Institute for Urban Land Use and Housing Studies, Columbia University, N.Y.C., N.Y. Co-author of *Systems and Structures of Urban Traffic*; etc.
- C.J.Fx.** **Boston**
CHARLES JAMES FOX. Auditor of the City of Boston and County of Suffolk, Boston, Mass.
- C.L.Be.** **Wildlife Conservation (in part)**
CHARLES LEOFRIC BOYLE. Secretary, Society for the Preservation of Fauna of the Empire, London, Eng.

EDITORS AND CONTRIBUTORS

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- C.L.Bk.** Rhodesia, Southern
COLIN LAMONT BLACK. Public Relations Officer, Office of the High Commissioner for Southern Rhodesia, London, Eng.
- C.L.Bt.** Rowing
C. LEVERICH BRETT. Editor, *National Association of Amateur Oarsmen Rowing News*.
- Cl.Fn.** Great Books of the Western World
CLIFTON FADIMAN. Critic. Editor, *Reading I've Liked*.
- C.L.L.** Wisconsin
CLIFFORD L. LORD. Director, State Historical Society, Madison, Wis.
- C.L.Wi.** National Parks and Monuments (in part)
CONRAD L. WIRTH. Director, National Park Service, Washington, D.C.
- C.McN.G.** Consumer Credit (in part)
CAMERON McNEIL GREIG. Secretary, Institute of Credit Management; Deputy Secretary, Hire Purchase Trade Association, London, Eng.
- C.M.Pn.** Industrial Health (in part)
CARL M. PETERSON, M.D. Secretary, Council on Industrial Health, American Medical Association.
- C.N.E.** Baltimore; Maryland
CARL N. EVERSTINE. Acting Director, Department of Legislative Reference, Baltimore, Md. Author of *History of the Grand Lodge of Masons of Maryland*.
- C.O'D.I.** Oceanography
C. O'D. ISELIN. Senior Physical Oceanographer, Woods Hole Oceanographic Institution, Woods Hole, Mass.
- C.R.A.** Marriage and Divorce
CLIFFORD R. ADAMS. Professor of Psychology in Charge of Marriage Counselling for the School of Education, The Pennsylvania State College, State College, Pa. Regional Consultant, American Institute of Family Relations. Author of *Preparing for Marriage*.
- C.R.Gy.** Veterans Administration (U.S.)
CARL RAYMOND GRAY, JR. Administrator of Veterans' Affairs, Veterans Administration, Washington, D.C.
- C.Ry.** Moscow; etc.
CYRIL RAY. Member of editorial staff, *Sunday Times*, London, Eng.; Formerly Correspondent in Moscow. Editor, *Scenes and Characters from Surtees*. Author of *Algiers to Africa*.
- C.S.Pe.** Ceramic Products
CHARLES S. PEARCE. General Secretary, American Ceramic Society, Inc., Columbus, O.
- Ct.M.** Shipbuilding (in part); etc.
CUTHBERT MAUGHAN. Shipping Correspondent, *The Times*, London, Eng. Author of *Our Mercantile Marine*; etc.
- C.V.C.** Korean War (in part)
CHESTER V. CLIFTON, JR. Colonel, U.S.A. Assistant to the Chairman of the Joint Chiefs of Staff, Washington, D.C.
- C.W.Cr.** Drug Administration, U.S.
CHARLES W. CRAWFORD. Commissioner of Food and Drugs, Food and Drug Administration, Federal Security Agency, Washington, D.C.
- D.A.Dy.** Massachusetts
DENNIS A. DOOLEY. State Librarian of Massachusetts, Boston, Mass.
- D.A.G.R.** Building and Construction Industry (in part)
DONALD A. G. REID. Principal, London County Council, Brixton School of Building, London, Eng. Author of *Building Science*.
- D'A.Mc.** Indians, American
D'ARCY McNICKLE. Director, Tribal Relations, Bureau of Indian Affairs, Washington, D.C. Author of *They Came Here First*.
- D.A.Sn.** Malaya, Federation of; etc.
DEKRICK ADOLPHUS SINGTON. Correspondent in the Far East, Contributing to the *Glasgow Herald*, *New Statesman and Nation*, the *Manchester Guardian*; etc.
- D.B.L.** Farmers Home Administration
DILLARD B. LASSETER. Administrator, Farmers Home Administration, U.S. Department of Agriculture, Washington, D.C.
- D.B.S.** Bridges
DAVID BARNARD STEINMAN. Authority on the Design and Construction of Long-Span Bridges.
- D.C.Ck.** Securities and Exchange Commission
DONALD C. COOK. Chairman, Securities and Exchange Commission, Washington, D.C.
- D.C.Cr.** California
DONALD C. CUTTER. Assistant Professor of History, University of Southern California, Los Angeles, Calif.
- D.C.G.** Humour of 1952
DAVID C. GARROWAY. NBC Radio and Television Entertainer.
- D.D.Ct.** Children's Books (in part)
DORIS DAVIES CHILCOT. Principal Assistant in Charge of Work with Young People, Islington Public Libraries, London, Eng.
- D.Dz.** Atomic Energy
DAVID DIETZ. Science Editor, Scripps-Howard Newspapers. Lecturer in General Science, Western Reserve University, Cleveland, O. Author of *Atomic Energy in the Coming Era*; etc.
- De.C.R.** Aircraft Manufacture
DEWITT C. RAMSEY. President, Aircraft Industries Association of America, Inc., Washington, D.C.
- D.F.K.** Israel (in part)
DAVID FRANCIS KESSLER. Managing Director, *Jewish Chronicle*, London, Eng.
- D.H.C.** American Library Association
DAVID H. CLIFT. Executive Secretary, American Library Association, Chicago, Ill.
- D.H.D.** Palaeontology (in part)
DAVID H. DUNKLE. Associate Curator, Division of Vertebrate Paleontology, Smithsonian Institution, Washington, D.C.
- D.Hn.** Newspapers and Magazines (in part)
DEREK HUDSON. Literary Editor, the *Spectator*, London, Eng. Author of *British Journalists and Newspapers*; etc.
- D.Ht.** Congregational Christian Churches
DOUGLAS HORTON. Minister and Secretary of the General Council of Congregational Christian Churches in America, New York, N.Y. Author of *Out of Life; Congregationalism, A Study in Polity*.
- D.J.H.** Wages and Hours (in part); Wage Stabilization Board
DONALD J. HART. Dean, School of Business Administration, University of Idaho, Moscow, Ida.
- D.Le.** Hearing
DEAN LIERLE, M.D. Professor of Otolaryngology, State University of Iowa, College of Medicine, Iowa City, Ia.
- D.Lh.** Tariffs (in part)
DAVID LYNCH. Economist. Special Adviser on European Trade Policy, United States Tariff Commission. Author of *The Tariff Policy of Greece; The Concentration of Economic Power*; etc.
- D.L.I.** Ireland, Republic of (in part)
DENIS LIDDELL IRELAND. Former Senator, Republic of Ireland. Author of *Eamon de Valera Doesn't See It Through*; etc.
- D.Nn.** London
LADY DOROTHY NICHOLSON. Author of *Private Letters: Pagan and Christian; The Londoner*; etc.
- D.O'B.** Public Relations
DALE O'BRIEN. Partner in the public relations counselling firm of Howard G. Mayer and Dale O'Brien, Chicago, Ill.
- D.R.Gi.** France (in part)
DARSIE RUTHERFORD GILLIE. Paris Correspondent, the *Manchester Guardian*.
- D.R.Pr.** Great Britain & Northern Ireland, United Kingdom of (in part)
DAVID RUSSELL PROSSER. Editor, *Western Mail*, Cardiff, Wales.
- D.Sn.** Art Exhibitions (in part); etc.
DENYS SUTTON. Art Critic, London, Eng. Author of *French Drawings of the 18th Century; American Paintings*; etc.
- D.W.H.** Church Membership (in part)
DON WENDELL HOLTER. Professor, Garrett Biblical Institute, Evanston, Ill. Author of *Beginnings of Protestantism in Trans-Missouri*.
- D.W.K-J.** Flour (in part)
DOUGLAS WILLIAM KENT-JONES. Analytical and Consulting Chemist, London. Author of *Modern Cereal Chemistry; The Practice and Science of Bread-making*.
- D.Wn.** Botany (in part)
DONALD WYMAN. Horticulturist, Arnold Arboretum, Harvard University, Jamaica Plain, Mass.
- E.A.Gs.** Children's Books (in part)
ELIZABETH A. GROVES. Assistant Professor, School of Librarianship, University of Washington, Seattle, Wash.

- E.A.Pr.** Fisheries (*in part*)
EDWARD A. POWER. Chief, Branch of Material Facilities, Defense Fisheries Administration, U.S. Department of the Interior, Washington, D.C.
- E.A.Sr.** Psychiatry (*in part*)
EDWARD A. STRECKER, M.D. Professor of Psychiatry and Chairman of the Department, Medical School, University of Pennsylvania, Philadelphia, Pa. Author of *Clinical Psychiatry; Fundamentals of Psychiatry*.
- E.B.Nn.** Rubber
EDWIN BOHANNON NEWTON. Director, Technical Service Research, B. F. Goodrich Research Center, Brecksville, Ohio.
- E.B.R.** Seismology
ELLIOTT B. ROBERTS. Captain, U.S. Coast and Geodetic Survey, Washington, D.C.; Chief, Division of Geophysics.
- E.C.Sd.** Aviation, Civil (*in part*)
EDWIN COLSTON SHEPHERD. Air Correspondent, *Sunday Times*, London, Eng. Editor, *Aeroplane*, London, Eng. Author of *Great Flights*; etc.
- Ed.F.A.** Kansas
EDWARD F. ARN. Governor, State of Kansas.
- E.Dt.** Indiana
EVA DRAEGERT. Assistant, Indiana Historical Society Library, Indianapolis, Ind. Author of *Indianapolis: the Culture of an Inland City*.
- E.E.B.** Montana
EDWARDE E. BENNETT. Professor of History and Political Science, Montana State University, Missoula, Mont.
- E.E.Bs.** Civil Service (*in part*)
SIR EDWARD ETTINGDENE BRIDGES. Permanent Secretary to H.M. Treasury, London, Eng.
- E.E.R.** Elections, U.S.; United States (*in part*); etc.
EDGAR EUGENE ROBINSON. Byrne Professor of American History and Director of the Institute of American History, Stanford University, Stanford, Calif. Author of *The New United States*; etc.
- E.F.D.** Maine
EDWARD FRENCH DOW. Professor of Government and Head of the Department of History and Government, University of Maine, Orono, Me.
- E.G.An.** Shoe Industry
ESTELLE G. ANDERSON (Mrs. Arthur D. Anderson). Associate Editor, *Boot and Shoe Recorder*.
- E.H.Kr.** Mineralogy
EDWARD HENRY KRAUS. Dean Emeritus of the College of Literature, Science and the Arts, and Professor Emeritus of Crystallography and Mineralogy, University of Michigan, Ann Arbor, Mich.
- E.I.F.** Horticulture
E. I. FARRINGTON. Former Secretary, Massachusetts Horticultural Society and Editor of *Horticulture*. Author of *The Gardener's Almanac*; etc.
- E.I.P.** Salvation Army
ERNEST I. PUGMIRE. National Commander of the Salvation Army in the United States.
- E.J.C.** Canning Industry (*in part*)
EDWIN J. CAMERON. Director, Research Laboratories, National Canners Association.
- E.J.Fo.** Geography
EDWIN J. FOSCUE. Professor of Geography and Chairman of the Department of Geography, Southern Methodist University, Dallas, Texas. Co-author of *Regional Geography of Anglo-America; Estes Park, Resort in the Rockies*.
- E.L.** Women's Fashions
ELEANOR LAMBERT. Publicity Department, Eleanor Lambert, Inc., New York, N.Y.
- E.L.R.** St. Louis
E. LANSING RAY. Chairman of the Board, Publisher and Editor, *St. Louis Globe-Democrat*, St. Louis, Mo.
- E.P.Jo.** Diabetes
E. P. JOSLIN, M.D. Professor Emeritus of Clinical Medicine, Harvard University Medical School; Medical Director, George F. Baker Clinic, New England Deaconess Hospital, Boston, Mass.
- E.R.Bl.** International Bank for Reconstruction and Development
EUGENE R. BLACK. President, International Bank for Reconstruction and Development, Washington, D.C.
- Er.Gr.** Alaska
ERNEST GRUENING. Governor of Alaska.
- E.Rn.** North Dakota
ELWYN BURNS ROBINSON. Professor of History, University of North Dakota, Grand Forks, N.D. Author of *Heroes of Dakota*.
- E.S.Br.** Tennis
EDWIN S. BAKER. Executive Secretary, United States Lawn Tennis Association.
- E.S.J.** Child Labour
ELIZABETH S. JOHNSON. Chief, Division of Child Labor and Youth Employment, Bureau of Labor Standards, U.S. Department of Labor, Washington, D.C.
- E.S.K.** United States (*in part*)
E. S. KERBER. Economic Analyst, Clearing Office for Foreign Transactions, U.S. Department of Commerce, Washington, D.C.
- E.Sn.** Furs
EDWARD M. STANTON. Fur Editor of *Women's Wear Daily*, Fairchild Publications, N.Y.
- E.V.Lh.** Brewing and Beer
E. V. LAHEY. Chairman and President, United States Brewers Foundation Inc.
- Ev.W.S.** South Dakota
EVERETT W. STERLING. Associate Professor of History, University of South Dakota, Vermillion, S.D.
- E.W.Bd.** Cortisone, Hydrocortisone and Corticotropin
EDWARD W. BOLAND, M.D. Vice-President, American Rheumatism Association, New York, N.Y.
- E.W.G.** Electrical Industries (*in part*); etc.
EDWARD WILLIAM GOLDING. Head, Rural Electrification and Wind-Power Department, Electrical Research Association, London, Eng. Author of *Electrification of Agriculture and Rural Districts*; etc.
- E.W.Gn.** Illiteracy
ELLA WASHINGTON GRIFFIN. Special Consultant, U.N.E.S.C.O.
- E.Wi.** Italy (*in part*); etc.
ELIZABETH WISKEMANN. Writer. Former Rome Correspondent, *The Economist*. Author of *Czechs and Germans; Undeclared War; The Rome-Berlin Axis*; etc.
- E.Ws.** Psychosomatic Medicine
EDWARD WEISS, M.D. Professor of Clinical Medicine, Temple University Medical School, Philadelphia, Pa. Co-author of *Psychosomatic Medicine*.
- F.A.Bt.** Wyoming
FRANK A. BARRETT. United States Senator.
- F.A.Sd.** International Monetary Fund
FRANK A. SOUTHARD, JR. U.S. Executive Director, International Monetary Fund, Washington, D.C. Author of *Foreign Exchange Practice and Policy; The Finances of European Liberation*.
- F.A.Sw.** Art Exhibitions (*in part*); etc.
FREDERICK A. SWEET. Associate Curator of Painting and Sculpture, The Art Institute of Chicago, Chicago, Ill.
- F.B.H.** Portugal (*in part*); etc.
FRED BRABY HILLS. Portuguese Program Organizer, B.B.C. European Service, London, Eng.
- F.C.Bg.** Bread and Bakery Products
FRANKLIN C. BING. Consultant in the food and drug field. Former Director, American Institute of Baking.
- F.D.N.** Seventh-day Adventists
FRANCIS D. NICHOL. Editor, *Review and Herald*. Author of *The Midnight Cry; The Answer to Modern Religious Thinking*; etc.
- F.D.R.** New Mexico
FRANK D. REEVE. Professor of History, University of New Mexico, Albuquerque, N.M.
- F.D.S.** Denmark (*in part*); Norway (*in part*); etc.
FRANKLIN D. SCOTT. Professor of History, Northwestern University, Evanston, Ill. Author of *Bernadotte and the Fall of Napoleon; The United States and Scandinavia*; etc.
- F.D.Ss.** Book Publishing (*in part*)
FRANCIS DOUGLAS SANDERS. Secretary, Publishers Association of Great Britain and Ireland, London, Eng.
- F.E.D.** Blind, Education of the
F. E. DAVIS. Superintendent, American Printing House for the Blind, Inc., Louisville, Ky.

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FLORENT EDWIN FRANKE, M.D. Associate Professor, Department of Physiology, School of Medicine, St. Louis University, St. Louis, Mo.
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FREDRICK J. STARE, M.D. Professor of Nutrition, Schools of Medicine and Public Health, Harvard University, Boston, Mass.
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F. W. REICHELDERFER. Chief, Weather Bureau, U.S. Department of Commerce, Washington, D.C.
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GEORGE L. WARREN. Adviser on Refugees and Displaced Persons, Department of State, Washington, D.C.
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G. T. HATCHER. Director, Bureau of Economics and Statistics, Province of British Columbia, Victoria, B.C.
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GUDLAUGUR THORVALDSSON. Office of the Icelandic Bureau of Statistics, Reykjavik, Iceland.
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HARRY A. COBRIN. Executive Secretary, Clothing Manufacturers Association of the United States of America, New York, N.Y.
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HOWARD ARCHIBALD HUBBARD. Professor of History, University of Arizona, Tucson, Ariz.

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HARRY A. McDONALD. Administrator, Reconstruction Finance Corporation, Washington, D.C.
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HARRY M. WEBER, M.D. Associate Professor of Radiology, University of Minnesota Graduate School, Rochester, Minn.
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HARRY A. WILLIAMS. Director, Public Relations, Automobile Manufacturers Association, Detroit, Mich.
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HENRY B. COLLINS, JR. Senior Ethnologist, Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.
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HOWARD BECKER. Professor of Sociology, University of Wisconsin, Madison, Wis. Fulbright Appointee, Great Britain, 1951. Author of *German Youth: Bond or Free; Systematic Sociology; Through Values to Social Interpretation*; etc.
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HAROLD B. WILLEY. Deputy Clerk, United States Supreme Court, Washington, D.C.
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H. M. WEAVER. Director of Research, National Foundation for Infantile Paralysis, New York, N.Y.
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HENRY N. ANDREWS, JR. Dean, School of Botany, Washington University, St. Louis, Mo. Author of *Ancient Plants and the World They Lived In*.
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HUGH ODISHAW. Assistant to the Director, National Bureau of Standards, U.S. Department of Commerce, Washington, D.C.
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HERBERT RATTNER, M.D. Professor, Chairman, Dept. of Dermatology, Northwestern University Medical School, Chicago, Ill.
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HARRY W. LAIDLER. Executive Director, League for Industrial Democracy. Author of *Social-Economic Movements*; etc.

EDITORS AND CONTRIBUTORS

XXV

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ISAAC GREGG. Former Director of Press Relations, Office of the Postmaster General, Washington, D.C.
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IRENE L. BLUNT. Secretary, The National Federation of Textiles, Inc., New York, N.Y.
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IAN ROBERT MORE McCALLUM. Editor *The Architectural Review* and *Physical Planning*. Author of *A Pocket Guide to Modern Buildings in London*.
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I. W. DUGGAN. Governor, Farm Credit Administration, U.S. Department of Agriculture, Washington, D.C.
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IRVING W. HART. Chief Information Officer, Selective Service System, Washington, D.C. Author of *Outline of Historical Background of Selective Service; Carrier Boy*.
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JAMES A. FORD. Assistant Curator of North American Archaeology, American Museum of Natural History, New York, N.Y.
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JOHN ANDERSON MILLER. General Electric Co., Schenectady, N.Y. Author of *Fares Please!; Men and Volts at War*; etc.
- J.A.Ml.** **Patents**
JOHN A. MARZALL. Commissioner, United States Patent Office, U.S. Department of Commerce, Washington, D.C.
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J. A. MYERS, M.D. Professor of Medicine and Public Health, University of Minnesota Medical and Graduate Schools, Minneapolis, Minn. Author of *Tuberculosis Among Children and Adults*; etc.
- J.A.S.R.** **Coal (in part)**
J. A. S. RITSON. Emeritus Professor of Mining, University of London, London, Eng.
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JACOB BLANCK. Editor, *Bibliography of American Literature*. Author of *Peter Parley to Penrod*; etc.
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JOSEPH B. KIRSNER, M.D. Professor of Medicine, The University of Chicago, Chicago, Ill.
- J.Br.** **Connecticut**
JAMES BREWSTER. State Librarian, Connecticut State Library, Hartford, Conn.
- J.C.Ag.** **Marine Biology**
JOHN C. ARMSTRONG. Assistant Curator of Invertebrates, Department of Fishes and Aquatic Biology, American Museum of Natural History, New York, N.Y.
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J. EDGAR HOOVER. Director, Federal Bureau of Investigation, U.S. Department of Justice, Washington, D.C.
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JEANNETTE ECKMAN. Writer. Editor, *New Castle on the Delaware*. Author of *The Kinkadees of Delaware*.
- J.Es.** **English Literature (in part)**
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J. E. SPRINGMEYER. Legislative Counsel, State of Nevada, Carson City, Nev.
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JOHN EMLYN WILLIAMS. Central European Correspondent, the *Christian Science Monitor*, Boston, Mass.
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JAMES FORD CAIRNS. Lecturer in Economic History, University of Melbourne, Melbourne, Austr. Nuffield Dominion Fellow (Social Sciences).
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J. GILMORE MARQUIS. Publications Officer, American National Red Cross, Washington, D.C.
- J.G.V.D.** **Architecture (in part)**
JAMES GROTE VAN DERPOOL. Professor, History of Architecture, and Avery Librarian, Columbia University, New York, N.Y.
- J.H.A.** **Interstate Commerce Commission**
J. HADEN ALLDREDGE. Chairman, Interstate Commerce Commission, Washington, D.C. Author of *Rate-Making for Common Carriers; The Interterritorial Freight Rate Problem of the United States*.
- J.H.L.** **Unitarian Church**
JOHN HOWLAND LATHROP, D.D. Minister, the First Unitarian Congregational Society in Brooklyn, N.Y. Member, Board of Directors, American Unitarian Association.
- J.J.Dn.** **Civil Service (in part)**
J. J. DONOVAN. Associate Director, Civil Service Assembly of the United States and Canada.
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JAMES J. HAGGERTY, JR. Military Editor, American Aviation Publications, Washington, D.C.
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JAMES J. KILPATRICK. Editor, *The Richmond News Leader*, Richmond, Va.
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JOSEPH J. RODDY. Music Editor, *Look* magazine, New York, N.Y.
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JULIUS KENNARD. Chartered Civil Engineer, Partner of Edward Sandeman, Kennard and Partners, London, Eng.
- J.K.L.** **Banking (in part); etc.**
JOHN K. LANGUM. President, Business Economics, Inc., Chicago, Ill. Former Vice-President, Federal Reserve Bank of Chicago, Chicago, Ill.
- J.K.R.** **Agriculture; Fruit; etc.**
JOHN KERR ROSE. Geographer, Legislative Reference Service, Library of Congress, Washington, D.C.
- J.LaF.** **Roman Catholic Church; Pius XII; etc.**
JOHN LaFARGE, S.J. Associate Editor, *America*, National Catholic Weekly, New York, N.Y.
- J.L.J.** **Manitoba**
J. L. JOHNSTON. Librarian, Provincial Library, Winnipeg, Man.
- J.McAd.** **Argentina (in part); Chile (in part); etc.**
JOHN McADAMS. Former Instructor of Latin American History and Government, University of Puerto Rico, Rio Piedras, P.R.
- J.Mcl.H.** **Rent Stabilization, Office of**
JAMES McINNES HENDERSON. Director of Rent Stabilization, Office of Rent Stabilization, Washington, D.C.
- J.M.Hn.** **Public Health Engineering**
JOHN MELLISH HENDERSON. Consulting Sanitary Engineer; Special Consultant, Communicable Disease Center, U.S. Public Health Service, Savannah, Ga.
- J.M.Md.** **Federal Trade Commission**
JAMES M. MEAD. Chairman, Federal Trade Commission, Washington, D.C. Former U.S. Senator from New York.
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JOHN ANTHONY HUTTON. Former Research Assistant, Institute of Colonial Studies, University of Oxford, Oxford, Eng.
- Jo.C.H.** English Literature (*in part*)
JOHN CLIVE HALL. Publisher's General Manager, London, Eng. Author of *The Summer Dance and other Poems*.
- Jo.C.M.** Rhode Island
JOHN C. MURRAY. Chief of Administrative and Financial Research, State of Rhode Island, Providence, R.I.
- Jo.C.S.** North Carolina
JOSEPH CARLYLE SITTERSON. Professor of History, University of North Carolina, Chapel Hill, N.C. Author of *The Secession Movement in North Carolina*; co-author, *American Society and the Changing World*.
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JOHN C. WEAVER. Chemist, Department of Research Administration, The Sherwin-Williams Co., Cleveland, O.
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JOHN HOCKIN. London Editor, *Times of Ceylon*, Ceylon.
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JOSEPH SIMONSON. Executive Secretary, Division of Public Relations, National Lutheran Council, New York, N.Y. Editor, *National Lutheran*.
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JAMES P. DAWSON. Writer on Baseball and Boxing, *The New York Times*, New York, N.Y.
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- J.R.Cl.** Mormons
J. REUBEN CLARK, JR. Second Counselor in the First Presidency, Church of Jesus Christ of Latter-day Saints, Salt Lake City, Utah.
- J.S.Ck.** Philadelphia
JOSEPH S. CLARK, JR. Mayor, City of Philadelphia, Philadelphia, Pa.
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JOHN S. FINE. Governor of Pennsylvania.
- J.Sto.** Electronics
JAMES STOKLEY. Publicity Representative, General Electric Research Laboratory, Schenectady, N.Y. Editor, *Science Marches On*. Author of *Stars and Telescopes*; *Science Remakes Our World*; *Electrons in Action*.
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JACK TRACY. Editor, *Down Beat*, Chicago, Ill.
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JOHN TAYLOR ARMS. Etcher and Lecturer. President, Society of American Graphic Artists. Author of *Handbook of Print Making and Print Makers*; etc.
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JAMES V. BENNETT. Director, U.S. Bureau of Prisons, Washington, D.C.
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JOHN WATKIN GRIEVE. Electrification Engineer, Electrical Engineering New Works and Development Section, The Railway Executive, British Transport Commission, London, Eng.
- J.W.Je.** Federal Power Commission
JOHN W. JENKINS. Publications Division, Federal Power Commission, Washington, D.C.
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JOSEPH W. MARLOW. Lawyer. Editor and Research Analyst, Military Intelligence Service, U.S. War Department, 1944-46.
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- J.W.Rs.** Nebraska
JACK W. RODGERS. Instructor of Political Science, University of Nebraska, Lincoln, Neb.
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KATHERINE GOEPPINGER. Home Economics Editor, The Iowa State College Press, Ames, Ia.
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KENNETH R. KENNEDY. Reports Editor, Information Office, Tennessee Valley Authority, Knoxville, Tenn.
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KENNETH SCOTT LATOURETTE, D.D. Professor of Missions and Oriental History, Yale University, New Haven, Conn.
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KAZIMIERZ SMOGORZEWSKI. Journalist. Founder and Editor, *Free Europe*, London, Eng. Author of *Poland's Access to the Sea*; etc.
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LEO HERMANN CRIEP, M.D. Associate Professor of Medicine, School of Medicine, University of Pittsburgh, Pittsburgh, Pa. Author of *Essentials of Allergy*.
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LAURENCE J. ACKERMAN. Dean, School of Business Administration, University of Connecticut, Storrs, Conn.; Dean, College of Insurance, University of Connecticut, Hartford, Conn. Author of *Risks We Face*; etc.

EDITORS AND CONTRIBUTORS

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LEVERETT SAMUEL LYON. Chief Executive Officer, The Chicago Association of Commerce and Industry, Chicago, Ill.
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LEONARD M. FANNING. Editor, *Our Oil Resources*. Author of *American Oil Operations Abroad; The Rise of American Oil*; etc.
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LELAND M. GOODRICH. Professor of International Organization and Administration, Columbia University, New York, N.Y. Co-author of *Charter of the United Nations: Commentary and Documents*.
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LLOYD M. KOZLOFF. Assistant Professor, Department of Biochemistry, The University of Chicago, Chicago, Ill.
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M. B. GARDNER. Vice-Admiral, U.S. Navy, Deputy Chief of Naval Operations (Air), Washington, D.C.
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MARSHALL E. DIMOCK. Former Professor of Political Science, Northwestern University, Evanston, Ill., and The University of Chicago, Chicago, Ill. Author of *Modern Politics and Administration; Business and Government*.
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MARY E. SWITZER. Director, Office of Vocational Rehabilitation, Federal Security Agency, Washington, D.C.
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MICHELE F. CANTARELLA. Professor of Italian Language and Literature, Smith College, Northampton, Mass. Co-author of *Dieci Novelle Contemporanee; Corso d'Italiano*; etc.
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MILLARD F. CALDWELL. Federal Civil Defense Administrator, Washington, D.C.
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MAXWELL FINLAND, M.D. Associate Director, Thorndike Memorial Laboratory; Physician in Chief, Fourth Medical Service, Boston City Hospital. Associate Professor of Medicine, Harvard Medical School, Boston, Mass.
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MORRIS F. de CASTRO. Governor of the Virgin Islands of the United States.
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MAURICE FANSHAW. Writer on International Affairs, London, Eng. Author of *The Charter Explained; Trust Territories*; etc.
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MARTHA F. TRULSON. Research Associate in Nutrition, School of Public Health, Harvard University, Boston, Mass.
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(JOHN) MALCOLM MACKINTOSH. Programme Organizer, Bulgarian and Albanian Sections, British Broadcasting Company's Overseas Service, London, Eng.
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MERRILL MOORE, M.D. Visiting Neurologist, Boston City Hospital, and Clinical Associate in Psychiatry, Harvard Medical School, Boston, Mass.
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MERLIN O'NEILL. Vice-Admiral, U.S.C.G. Commandant, United States Coast Guard, Washington, D.C.
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MORTON PUNER. Director, Special Features Department, Anti-Defamation League of B'nai B'rith, New York, N.Y.
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MACD. SINCLAIR. Editor, *Printing Equipment Engineer*, Cleveland, Ohio.
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MORTIMER SPIEGELMAN. Associate Statistician, Metropolitan Life Insurance Company. Co-author, *Length of Life*; etc.
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- M.S.W.** **World Health Organization**
M. S. WILDE. Public Information Officer, Division of Public Information, World Health Organization, United Nations, Geneva, Switz.
- M.Te.** **Iowa**
MILDRED THRONE. Associate Editor of the State Historical Society of Iowa, Iowa City, Ia.
- M.T.H.** **Federal Deposit Insurance Corporation**
MAPLE T. HARL. Chairman, Federal Deposit Insurance Corporation, Washington, D.C.

- M.V.N.** **Bacteriology**
MILAN VACLAV NOVAK. Professor and Head of the Department of Bacteriology, University of Illinois College of Medicine, Chicago, Ill. Bacteriologist in Chief, Research and Educational Hospital, and Consultant on Bacteriology, Veterans' Administration, Hines, Ill.
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MIRIAM VAN WATERS. Superintendent, Reformatory for Women, Framingham, Mass. Author of *Youth in Conflict*; etc.
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MORRIS W. H. COLLINS, JR. Assistant Professor of Political Science, The University of Georgia, Athens, Ga. Director, Bureau of Public Administration.
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MICHAEL W. STRAUS. Commissioner, Bureau of Reclamation, U.S. Department of the Interior, Washington, D.C.
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NAT GREEN. Manager, Chicago, Ill., Office, Ringling Bros. and Barnum & Bailey Combined Shows Inc.
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NORMAN BENTWICH. Professor of International Relations, The Hebrew University, Jerusalem, Pal. Author of *Palestine; Judea Lives Again; Jewish Youth Comes Home; Israel*; etc.
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OSCAR R. EWING. Federal Security Administrator, Washington, D.C.
- P.Ae.** **Colorado**
PEARL ANOE. Feature Writer for the Colorado State Publicity Department, Denver, Colo.
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PAUL A. EWING. Former Senior Irrigation Economist, U.S. Department of Agriculture.
- P.A.W.** **Federal Communications Commission**
PAUL A. WALKER. Chairman, Federal Communications Commission, Washington, D.C.
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PETER BRANDWEIN. Sports Writer, *The New York Times*, New York, N.Y. Editor, Sports Section, *Information Please Almanac*, etc.
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PAUL BELLAMY. Editor, *Cleveland Plain Dealer*, Cleveland, O.
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PHILIP HEWITT-MYRING. Public Relations Adviser to the Comptroller, Development and Welfare Organizations in the West Indies.
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PAUL L. WERMER, M.D. Secretary, Committee on Research; Assistant Secretary, Council on Pharmacy and Chemistry, American Medical Association. Co-editor of *Modern Treatment*.
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PERCY STEBBINGS. Insurance Editor and Correspondent to *Financial Times, Bankers' Magazine, Inventors Chronicle*, London, Eng.
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QUINCY WRIGHT. Professor of International Law, The University of Chicago, Chicago, Ill. Author of *A Study of War*; etc.
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ROGER A. BARTON. Editor, *Advertising Agency Magazine*, New York, N.Y., and *Advertising Handbook*. Lecturer in Advertising, Graduate School of Business, Columbia University, New York, N.Y.
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ROBERT BARTELS. Associate Professor of Marketing, The Ohio State University, Columbus, O. Co-author of *Credits and Collections in Theory and Practice*.
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R. B. KOEBER. Manager, Research Department, San Francisco Chamber of Commerce, San Francisco, Calif.
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RUTH B. SHIPLEY. Chief, Passport Division, Department of State, Washington, D.C.
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RAUL d'ECA. Public Affairs Officer, American Consular Agency, Belo Horizonte, Braz. Co-author of *Outline History of Latin America*.
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RALPH E. ELLSWORTH. Director of Libraries and Professor of Librarianship, State University of Iowa, Iowa City, Ia. Co-author of *Modular Planning for College and University Libraries*.
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RICHARD HAROLD FREYBERG. Associate Professor of Clinical Medicine, Cornell University Medical College; Director, Department of Internal Medicine and Director of Arthritis Clinic, Hospital for Special Surgery; Assistant Attending Physician and Director of Arthritis Clinic, New York Hospital, New York, N.Y.
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ROGER H. McDONOUGH. Director, New Jersey State Library, Trenton, N.J.

EDITORS AND CONTRIBUTORS

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ROYCE HOWES. City Editor, the *Detroit Free Press*.
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RALPH HAYES. Executive Director, New York Community Trust. Director, Equitable Security Trust Company, Coca-Cola, International, Wilmington, Del.
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RICHARD SCHLEGEL. Assistant Professor of Physics, Michigan State College, East Lansing, Mich.
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ROBERT JAMIESON. Member of Editorial Staff, *Daily Telegraph*, London, Eng.
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ROBERT J. BRAIDWOOD. Associate Professor of Old World Prehistory, The Oriental Institute and the Department of Anthropology, The University of Chicago, Chicago, Ill.
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R. L. FORNEY. General Secretary, National Safety Council, Chicago, Ill.
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ROGER L. PUTNAM. Administrator, Economic Stabilization Agency, Washington, D.C.; President, Springfield Television Broadcasting Company, Springfield, Mass.; Chairman, Package Machinery Company, East Longmeadow, Mass.
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ROGER MANVELL. Director, British Film Academy, London, Eng. Editor, *The Cinema; Experiment in the Film*; etc. Author of *Film; A Seat at the Cinema*; etc. Co-author of *Movie Parade*; etc.
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ROBERT M. SALTER. Chief, Soil Conservation Service, U.S. Department of Agriculture, Washington, D.C.
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ROBERT BEAN. Director, The Chicago Zoological Park, Brookfield, Ill.
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RALPH P. BIEBER. Professor of History, Washington University, St. Louis, Mo.
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RAYMOND P. KEESECKER, D.O. Editor, *Osteopathic Magazine*, American Osteopathic Association, Chicago, Ill.
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RIGGS SHEPPERD. Ass't. Administrator, Rural Electrification Administration, U.S. Department of Agriculture, Washington, D.C.
- R.S.T.** **Munitions of War (in part)**
ROBERT S. THOMAS. Military Historian, Historical Division, Special Staff, War Department, Washington, D.C. Author of *The Story of the 30th Division, A.E.F.*; etc.
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SERGE A. KORFF. Vice-President and Member of Board of Directors, the Explorers' Club.
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STANLEY B. HUNT. President, Textile Economics Bureau, Inc., New York, N.Y.; Editor, *Textile Organon*, New York, N.Y.
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SARVEPALLI GOPAL. Assistant Director, National Archives of India, New Delhi, Ind. Author of *The Permanent Settlement in Bengal and its Results*.
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SAM LESNER. Movie Critic, *Chicago Daily News*, Chicago, Ill.
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SAMUEL McCUNE LINDSAY. Professor Emeritus of Social Legislation, Columbia University, New York, N.Y. Author of *Railway Labor in the U.S.; Emergency Housing Legislation*; etc.
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STANLEY NEHMER. Office of International Materials Policy, U.S. Department of State, Washington, D.C. Lecturer in Economics, American University, Washington, D.C.
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S. PAUL JOHNSTON. Director, Institute of the Aeronautical Sciences, New York, N.Y.
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SAMUEL RAY SCHOLLES. Emeritus Professor of Glass Technology, New York State College of Ceramics, Alfred University, Alfred, N.Y.
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SIDNEY SHERWOOD. Secretary, Export-Import Bank of Washington, Washington, D.C.
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SIGMUND SPAETH. Lecturer and Broadcaster. Author of *At Home With Music; A History of Popular Music in America; Opportunities in Music*; etc.
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SOL TAISHOFF. President, Editor and Publisher of *Broadcasting-Telecasting Magazine*, Washington, D.C.
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TIBOR BARNA. Chief, Economics Section, Research Division, United Nations Economic Commission for Europe. Former Fellow, Nuffield College, Oxford, Eng. Author of *Redistribution of Income through Public Finance in 1937*.
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TERRELL C. DRINKWATER. President, Los Angeles Chamber of Commerce, Los Angeles, Calif.
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THOMAS E. HURLEY. Manager, Committees on Publication of the Mother Church, the First Church of Christ, Scientist, Boston, Mass.
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T. E. UTLEY. Leader Writer, *The Times*, London, Eng. Author of *Essays in Conservatism*.
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TERENCE GERARD WEILER. Principal, Aliens Department, Home Office, London, Eng.
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TRUMAN H. KUHN. Professor of Geology, Colorado School of Mines, Golden, Colo.
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THEODORE J. BAUER, M.D. Medical Director, Chief, Division of Venereal Disease, U.S. Public Health Service, Washington, D.C.

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THOMAS QUINN CURTISS. Drama Critic. Contributing Book Reviewer to *Herald-Tribune Books* and *The New York Times Book Review*, New York, N.Y.; Drama and Film Critic of *Paris Herald-Tribune*, Paris, Fr.; Theatre Correspondent of *Variety*, Paris, Fr.
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JOHN TERENCE REESE. Bridge Correspondent, the *Observer* and *Evening News*, London, Eng. Author of *Reese on Play*; etc. Co-author of *Acol System of Contract Bridge*.
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THOMAS ROGERS FORBES. Associate Professor of Anatomy and Assistant Dean, School of Medicine, Yale University, New Haven, Conn.
- T.T.M.** Tropical Diseases
THOMAS T. MACKIE. Chairman, The American Foundation for Tropical Medicine, New York, N.Y. Consultant, Internal and Tropical Medicine, the Roosevelt Hospital, New York, N.Y., the Norwalk Hospital, Norwalk, Conn. Author of *Manual of Tropical Medicine*.
- T.V.H.** Air Races and Records; Track and Field Sports; etc.
THOMAS V. HANEY. Member of the Staff, *The New York Times*, New York, N.Y.
- U.E.B.** Secret Service, U.S.
U. E. BAUGHMAN. Chief, United States Secret Service, Treasury Department, Washington, D.C.
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VIVA BELLE BOOTHE. Director, Bureau of Business Research, College of Commerce and Administration, The Ohio State University, Columbus, O. Author of *Seasonality of Employment in Ohio*; *Earnings in Ohio Industries*; etc.
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VICTOR THOMAS EGGER. Director, London branch, Austrian publishers and printers. Broadcaster on politics and economics.
- V.T.L.** Psychiatry (*in part*)
VINCENT T. LATHBURY, M.D. Associate in Psychiatry, Medical School, University of Pennsylvania, Philadelphia, Pa.
- W.A.A.** Veterinary Medicine
W. A. AITKEN, D.V.M. Editor in Chief, American Veterinary Medical Association publications, Chicago, Ill.
- W.A.Dn.** Theatre (*in part*)
WILLIAM AUBREY DARLINGTON. Drama Editor and Chief Drama Critic, the *Daily Telegraph*, London, Eng. London Drama Correspondent, *The New York Times*. Author of *The Actor and His Audience*; etc.
- W.A.Dw.** Fencing
WARREN A. DOW. Former Secretary, Amateur Fencers League of America.
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WILLIAM HENRY BARRINGTON DALBY. Writer and broadcaster on boxing. Administrative Steward, British Boxing Board of Control, London, Eng.
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- W.Dd.** Mutual Security Program
WILLIAM DIEBOLD, JR. Economist, Council on Foreign Relations, New York, N.Y. Author of *Trade and Payments in Western Europe*; *New Directions in Our Trade Policy*.
- W.Dk.** Blood, Diseases of the
WILLIAM DAMESHEK, M.D. Professor Clinical Medicine, Tufts College Medical School, Medford, Mass. Senior Physician and Hematologist, New England Center Hospital, Boston, Mass. Editor-in-Chief, *Blood—the Journal of Hematology*.
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WILLARD D. MORGAN. Editor, *The Encyclopedia of Photography* (11 volumes). Author of *Synchroflash Photography*; etc.
- W.E.Ds.** Cartography
WILLIAM E. DAVIES. United States Geological Survey, U.S. Department of the Interior, Washington, D.C.
- W.E.O.** Shows (*in part*)
WILLIAM E. OGILVIE. Secretary-Manager, International Live Stock Exposition, Chicago, Ill. Author of *Pioneer Agricultural Journalists*.
- W.E.Ss.** New Hampshire
WAYNE EDSON STEVENS. Professor of History, Dartmouth College, Hanover, N.H.
- W.F.Ky.** Motion Pictures (*in part*)
WILLIAM F. KELLEY. Manager and Secretary-Treasurer, Motion Picture Research Council, Inc., Hollywood, Calif. Editor of *Motion Picture Sound Engineering*.
- W.Ft.** Paraguay
WESLEY FROST. Professor International Relations, Hamilton College, Clinton, N.Y. Former U.S. Ambassador to Paraguay.
- W.G.P.** Netherlands New Guinea; Indonesia (*in part*)
WIBO G. PEEKEMA. Legal Adviser, Standard-Vacuum Petroleum Co., The Hague, Neth.
- W.H.Is.** Nyasaland; etc.
WILLIAM HAROLD INGRAMS. Adviser on Overseas Information, London, Eng. Author of *Arabia and the Isles*; *Hong Kong*; etc.
- W.H.Jn.** Business Review (*in part*)
WALTER HENRY JOHNSTON. Assistant Editor, *Yorkshire Post*, Leeds, Eng. Translator of Hegel's *Science of Logic*.
- W.H.McC.** Astronomy
WILLIAM HUNTER McCREA. Professor of Mathematics, University of London, at Royal Holloway College, Englefield Green, Surrey, Eng. Author of *Physics of the Sun and Stars*; *Relativity Physics*; etc.
- W.H.Tr.** Yachting
WILLIAM H. TAYLOR. Managing Editor, *Yachting*.
- W.J.Cl.** Co-operatives (*in part*)
WALLACE JUSTIN CAMPBELL. Director, Washington, D.C., Office, Cooperative League of the U.S.A.
- W.J.Hn.** Motor Transportation (*in part*)
WOODTHORPE JUDE HARRISON. Economist, London, Eng.
- W.Ju.** Shows (*in part*)
WILL JUDY. Editor, *Dog World*, Chicago, Ill. Author of *Principles of Dog Breeding*; *Dog Encyclopaedia*; etc.
- W.L.Be.** Eye, Diseases of the
WILLIAM L. BENEDICT, M.D. Emeritus Professor of Ophthalmology, University of Minnesota Graduate School, Mayo Foundation, Rochester, Minn.
- W.McM.** Chemurgy
WHEELER McMILLEN. Editor in Chief, *Farm Journal* and *Pathfinder*. Author of *New Riches from the Soil*; etc.
- W.M.Cr.** Motor-Boat Racing
W. MELVIN CROOK. Associate Editor, *Yachting*, New York, N.Y. Author of *Power For The Small Boat*.
- W.Mr.** Organization of American States
WILLIAM MANGER. Assistant Secretary-General, Organization of American States.
- W.P.Ma.** Telegraphy
WALTER P. MARSHALL. President, The Western Union Telegraph Company, New York, N.Y.
- W.Pr.** Louisiana
WALTER PRICHARD. François Xavier Martin Professor of Louisiana History, Louisiana State University, Baton Rouge, La.
- W.P.S.** Genetics
WARREN P. SPENCER. Professor of Biology, College of Wooster, Wooster, O.
- W.P.Ws.** Co-operatives (*in part*)
WILLIAM PASCOE WATKINS. Director, International Co-operative Alliance, London, Eng. Co-author of *Co-operation: a Survey of the Principles and Organisation of the Co-operative Movement in Great Britain and Ireland*.
- W.S.P.** Materials Policy Commission
WILLIAM S. PALEY. Chairman, Materials Policy Commission, Washington, D.C.; Chairman of the Board, Columbia Broadcasting System, Inc., New York, N.Y.
- W.T.We.** Law (*in part*)
WILLIAM THOMAS WELLS. Barrister. Member of Parliament for Walsall, Eng. Member of the Lord Chancellor's Committee on the Practice and Procedure of the Supreme Court and Magistrates' Courts Rules Committee. Author of *How English Law Works*.

EDITORS AND CONTRIBUTORS

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W.V.M. **Kimpton, Lawrence Alpheus**
WILLIAM V. MORGENSTERN. Director of Public Relations, The
 University of Chicago, Chicago, Ill.

W.V.Pl. **Hong Kong**
WILFRED VICTOR PENNELL. Assistant Editor, *South China*
Morning Post, Hong Kong.

W.V.Wi. **Prices (in part)**
WILLIAM V. WILMOT, JR. Instructor, Department of Economics,
 University of Wisconsin, Madison, Wis.

W.W.Bn. **Education (in part)**
WILLIAM W. BRICKMAN. Associate Professor of Education and
 Chairman, Department of History of Education, New York Uni-
 versity, New York, N.Y. President's Research Fellow, Brown Univer-
 sity, Providence, R.I., 1950-51. Former Editor, *Education Abstracts*.
 Author of *Guide to Research in Educational History*.

W.W.Js. **Kentucky**
WALTER W. JENNINGS. Professor of Economics, University of
 Kentucky, Lexington, Ky. Author of *Introduction to the Economic*
History of European Peoples; *Introduction to the Economic History of the*
American People; *Twenty Giants of American Business*; etc.

W.W.Ms. **Protestant Episcopal Church**
WILLIAM W. MANROSS. Librarian, the Church Historical Society,
 Philadelphia, Pa. Author of *History of the American Episcopal Church*.

W.W.Rr. **Stocks and Bonds (in part)**
WILLIAM WOTHERSPOON ROGER. Assistant Editor, *Financial*
Times, London, Eng.

X.
ANONYMOUS.

1953

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- JANUARY 1953**
- New Year's day.
 - First session of 83rd U.S. congress convenes.
 - Independence day, Burma.
 - Epiphany, or Twelfth-night.
 - Jackson day.
 - Inauguration day, U.S.
 - Republic day, India.
 - Australia day.
 - Total eclipse of the moon, visible partly at Washington, D.C. (date as of Greenwich civil time).
- FEBRUARY**
- Septuagesima Sunday.
 - Candlemas. Purification of the Virgin.
 - Ground-hog day.
 - Lincoln's birthday, 1809.
 - Georgia day, U.S.
 - Partial eclipse of the sun, invisible at Washington, D.C. (date as of Greenwich civil time).
 - St. Valentine's day.
 - Quinquagesima (Shrove) Sunday.
 - Shrove Tuesday. Mardi gras.
 - Ash Wednesday.
 - First Sunday in Lent.
 - Washington's birthday, 1732.
- MARCH**
- 150th anniversary, admission of Ohio into the union.
 - Purim (Jewish festival), 1st day.
 - Texas Independence day.
 - 100th anniversary, birth of Howard Pyle, U.S. artist and writer.
 - Girl Scout day, U.S.
 - Ides of March.
 - St. Patrick's day, patron saint of Ireland.
 - Equinox (10:01 P.M. Greenwich civil time), beginning of spring.
 - Passion Sunday.
 - Annunciation. Quarter day.
 - Palm Sunday.
 - Seward day, Alaska.
 - 100th anniversary, birth of Vincent van Gogh, Dutch painter.
 - Jewish Passover, 1st day.
- APRIL**
- All Fools' day.
 - Maundy Thursday.
 - Good Friday.
 - Easter Sunday.
 - Easter Monday. English bank holiday.

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CALENDAR OF EVENTS • 1952

JANUARY

1 Iranian Premier Mohammed Mossadegh indicated approval of offer of International Bank for Reconstruction and Development to try to reach temporary solution of Iranian oil crisis.

Canadian government reported that Canada had produced \$1,228,000,000 worth of strategic and other minerals in 1951.

Egyptians opened fire on British positions in the curfew area of Ismailia, Suez Canal Zone.

2 Pres. Harry S. Truman submitted to congress plan to reorganize bureau of internal revenue under which the 64 politically appointed collectors would be replaced by 25 civil service district commissioners.

U.S. supreme court ruled that evidence forcibly extracted from stomach of prisoner could not be used to convict him.

U.S. state dept. disclosed suggestion to Great Britain and Egypt that King Farouk be recognized as king of the Anglo-Egyptian Sudan if Egypt joined middle east defense command.

3 U.N. plan for man-for-man exchange of prisoners of Korean war was rejected by Communist truce delegation.

Soviet Foreign Minister Andrei Y. Vishinsky proposed that Korean truce situation be studied by U.N. Security council.

Burma became a member of the International Monetary fund and the International Bank for Reconstruction and Development.

4 United Steelworkers of America, C.I.O., postponed for 45 days nation-wide steel strike pending Wage Stabilization board proceedings.

Pres. Getulio Vargas of Brazil decreed that foreign companies would be allowed to repatriate only the registered capital taken into Brazil plus 8% interest.

5 India and the U.S. signed agreement in New Delhi providing for \$50,000,000 in technical economic aid during next 5 years.

U.S.S.R.'s official entry was

made in the 15th Olympic games at Helsinki in the summer of 1952.

6 Defense Mobilization Director Charles E. Wilson in 4th quarterly report stated that U.S. defense achievements in 1951 had been tremendous with relatively little dislocation to the civilian economy.

7 French Premier René Pleven resigned after defeat in national assembly, 341 to 243.

President Truman accepted resignation of W. Stuart Symington as administrator of Reconstruction Finance Corp.

U.S. supreme court unanimously upheld lower court rulings that International Longshoremen's and Warehousemen's union must pay \$750,000 in damages for jurisdictional strike in violation of Taft-Hartley act.

8 Second session of the U.S. 82nd congress convened in Washington, D.C.

Heavy ground fighting broke out west of Korangpo on the western Korean front.

9 Pres. Harry S. Truman and British Prime Minister Winston Churchill promised in joint communiqué that U.S. and British policies in Europe and the middle and far east would be unified as nearly as possible.

President Truman in annual state of the union message to congress urged continued defense production, continued foreign aid, tax increases and passage of his civil rights program.

Belgian Premier Joseph Pholien resigned following criticism of his economic policy by his own Christian Socialist party.

U.S. government was revealed to have proposed to the U.S.S.R. that dispute over World War II lend-lease debt be taken to the International Court of Justice.

10 Adm. Raymond A. Spruance was nominated as U.S. ambassador to the Philippines and Harry A. McDonald as administrator of Reconstruction Finance Corporation.

Freighter "Flying Enterprise" sank within 50 mi. of southwest coast of England after heroic attempt by Capt. Henrik K. Carlsson to save it.

President Truman stated that Atty. Gen. J. Howard McGrath

would head campaign to eliminate corruption in the federal government.

Malcolm MacDonald, U.K. commissioner general in southeast Asia, revealed plans to defend, in case of attack, the whole of Malaya and British Borneo.

11 Communist truce delegates flatly refused to negotiate over the right to build airfields in North Korea.

West German bundestag ratified, 232 to 143, the Schuman plan for merging European steel and coal industries.

U.N. general assembly voted, 42 to 5 (7 abstaining), to set up the 12-nation Disarmament commission consisting of Security council members and Canada.

12 Iranian government demanded in note to Great Britain that all British consulates in Iran be closed.

U.S. Navy Secy. Dan A. Kimball revealed navy plans to seek authority to build one aircraft supercarrier each year for 10 years.

13 White House announced that at Gen. Mark W. Clark's request President Truman would not resubmit to senate Clark's nomination as U.S. ambassador to the Vatican.

Gen. Alphonse-Pierre Juin stated in Washington, D.C., that the French would need U.S. and British aid to resist major Chinese Communist attack in Indochina.

14 William H. Draper, Jr., was nominated as President Truman's special representative in Europe with rank of ambassador.

15 Gen. Sir Gerald Templer was named British high commissioner in Malaya to direct campaign against Communist guerrillas.

Jean Van Houtte replaced Joseph Pholien as head of Belgium's all-Christian Socialist government.

16 Queen Narriman of Egypt gave birth to a son, Ahmed Fuad, who became heir to the Egyptian throne.

President Truman in economic report to congress requested increase in taxes of at least \$4,300,000,000 to \$4,500,000,000.

Soviet government ordered foreign diplomats to stay within 25 mi. of Moscow and barred them from 22 other cities.

British troops surrounded and searched villages of Tel el-Kebir and El Hammada in the Suez Canal Zone.

17 Prime Minister Churchill in speech to joint session of U.S. congress emphasized that the purpose of his visit was to obtain equipment, rather than money, for Britain.

18 Edgar Faure was confirmed as French premier by national assembly's vote of 401 to 101.

White House revealed that British Prime Minister Churchill had agreed to the designation of a U.S. admiral as supreme allied commander in the Atlantic ocean area.

19 U.N. general assembly endorsed its trusteeship committee's resolution urging South Africa to place South-West Africa under the U.N. trusteeship system.

20 British troops occupied a large part of the town of Ismailia in the Suez Canal Zone.

21 President Truman sent to congress largest U.S. peacetime budget, estimating expenditures at \$85,444,000,000 and revenue at \$70,998,000,000 in the fiscal year beginning July 1, 1952.

International Business Machines Corp. was charged with monopolizing the tabulating industry in a civil antitrust complaint filed by justice dept.

22 U.N. Secy.-Gen. Trygve Lie reported that 16 nations in addition to the U.S. had sent armed units to Korea.

23 Withdrawal of U.S. military aid from Iran was announced because of that country's failure to conform to the provisions of the Mutual Security act.

24 Appointment of Vincent Massey as the first native-born governor general of Canada was announced from Buckingham palace in London.

U.N. headquarters in Tokyo reported that truce negotiations in Korea had reached a state of complete paralysis.

State of emergency was declared by King Tribhubana of Nepal following 48-hour revolt by leftist Raksha Dal organization.

For elections and disasters of 1952, see under those headings in the text. For obituaries of prominent persons who died during 1952, see under the entry Obituaries.

JANUARY—Continued

25 British troops rounded up all Egyptian auxiliary police in Ismailia, Suez Canal Zone.

26 All of Egypt was placed under martial law after mobs had wrecked many British, U.S. and French business places in Cairo.

27 U.N. truce delegation presented Communists with full allied terms for truce and proposed meeting of General Matthew B. Ridgway and Chinese and North Korean commanders.

King Farouk I of Egypt replaced Premier Nahas Pasha's Wafdist cabinet with an independent government headed by Aly Maher Pasha.

28 U.S., British and French governments warned that they would call for U.N. action to meet any new Communist attack in southeast Asia.

U.S. government granted the U.K. \$300,000,000 in Mutual Security aid funds to support its defense program.

Pres. Harry S. Truman in message to congress renewed appeal for approval of construction plans for the St. Lawrence Seaway and Power project.

29 British Chancellor of the Exchequer R. A. Butler outlined imposition of drastic new economies to house of commons.

Prime Minister Churchill announced appointment of Field Marshal Viscount Earl Alexander, retiring governor general of Canada, as defense minister in the British cabinet.

30 Adm. Lynde D. McCormick of the U.S. navy was named supreme allied commander in the Atlantic ocean area.

31 Princess Elizabeth and the duke of Edinburgh left London by air for Nairobi, Kenya, on first stage of projected visit to Australia and New Zealand.

FEBRUARY

Newbold Morris of New York accepted assignment to investigate corruption in the federal government.

U.N. general assembly rejected soviet proposal that 14 appli-

cants for U.N. membership, including 5 soviet satellites, should be approved as a group.

Argentine shore patrol fired upon British survey vessel arriving at Hope bay, Antarctica.

2 U.N. general assembly endorsed resolution urging return of Greek children from Cominform countries where they were taken during Greek civil war.

3 U.S. house appropriations subcommittee reported possibility of recovery by U.S. government of millions of dollars lost by Commodity Credit corporation through illegal conversion of grain by private warehouses.

4 Iranian government ordered the closing of all foreign cultural institutions in the country outside of Tehran.

Defense Secy. Robert A. Lovett told U.S. senate subcommittee that defense request for \$52,000,000,000 in fiscal year 1953 was \$19,000,000,000 less than that recommended by joint chiefs of staff and that any further reduction would be imprudent.

5 U.N. general assembly adjourned in Paris after voting to postpone discussion of a permanent settlement of the Korean question.

Pres. Harry S. Truman advised congress that he had authorized use of \$478,160,000 in military funds under Mutual Security act for economic aid to France, Greece, Turkey, the U.K. and Yugoslavia.

6 King George VI of the United Kingdom died unexpectedly; his elder daughter was proclaimed Queen Elizabeth II by the privy council.

Soviet Union vetoed for the 5th time Italy's application for U.N. membership.

Communist truce negotiators proposed that a major peace conference should be convened after an armistice in Korea to deal with other major far eastern disputes besides the Korean conflict.

Argentine government revealed arrest of 100 persons, including a former army chief of staff, as plotters against the Perón regime.

7 Former Gov. Ellis G. Arnall of Georgia was named

director of the Office of Price Stabilization.

George F. Kennan was nominated as U.S. ambassador to the U.S.S.R.

8 Spanish government in note to U.S. state dept. expressed displeasure at remarks pronouncing dislike for the Franco regime made by President Truman at a press conference the day before.

Italian government advised the U.S.S.R. that the latter's veto of Italy's application for U.N. membership violated the 1947 peace treaty and in effect relieved Italy of any further obligations under it.

9 Communist proposal for general post-truce political conference was rejected by Vice Adm. Charles T. Joy, chief U.N. negotiator in Korea.

Prime Minister Jawaharlal Nehru's Congress party was revealed to have won control of house of the people, lower house of Indian parliament, in elections which began late in 1951.

10 Retiring Price Stabilizer Michael V. DiSalle appointed committee to study the advisability of ending federal price controls on some items.

11 Newark, N.J., airport was closed after three major aeroplane crashes in less than 2 months.

George W. Taylor was named by the C.I.O. to be arbitrator of all C.I.O. jurisdictional disputes.

President Truman asked congress to strengthen the Defense Production act and to extend it for 2 years beyond the June 30, 1952, expiration date.

12 General Ridgway protested seizure by soviet forces of about 200 Japanese fishing vessels off northern coast of island of Hokkaido.

13 President Truman reported to congress that U.S. military and economic aid during past 2 years had revived west European defenses to degree where any invasion would meet determined resistance.

14 Egyptian government in note to 15 nations expressed regret over losses suffered during riots in Cairo in Jan. 1952.

Presidential emergency board recommended granting of union

shop and mandatory dues check-off in any agreement between U.S. railroads and 17 railroad labour unions.

President Truman requested congress to give Newbold Morris power to subpoena witnesses and documents in his investigation of corruption in the U.S. government.

15 King George VI of the United Kingdom was buried with traditional ceremony in St. George's chapel, Windsor.

Hosseini Fatemi, leading aide to Iranian Premier Mossadegh, was shot and seriously wounded near Tehran by an assailant said to be a Moslem fanatic.

16 Jordan signed the Arab collective security pact already signed by the 6 other members of the Arab league.

17 British Prime Minister Churchill announced that an atomic weapon produced in the U.K. would be tested in Australia during 1952.

18 Iraqi government and Iraq Petroleum company agreement providing for equal division of oil profits received royal assent after being approved by the Iraqi parliament.

19 President Truman asked congress to renew for the duration of the national emergency, and 6 months thereafter, wartime powers that would expire upon the effective date of the Japanese peace treaty.

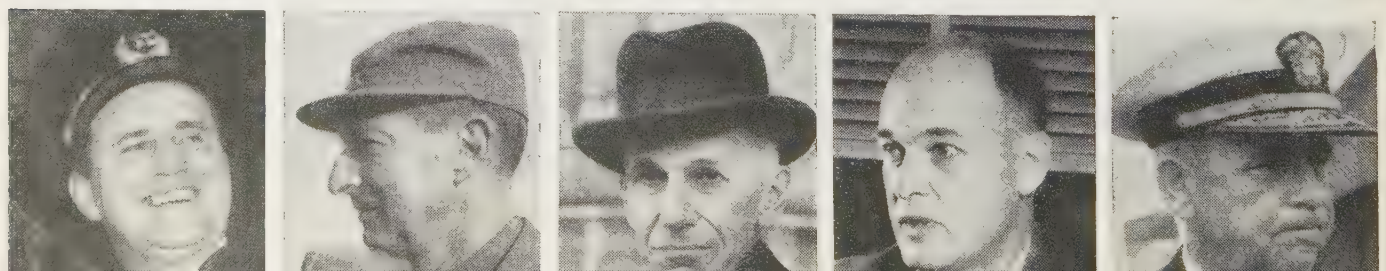
John Carter Vincent, foreign service officer, was completely cleared by U.S. state dept.'s loyalty and security board.

U.N. and Communist truce delegations agreed to recommend to their governments that a political conference be held within 90 days after an armistice to discuss withdrawal of foreign troops and "peaceful settlement of the Korean question, etc."

U.S., U.K., French and west German foreign ministers announced agreement on outstanding issues concerning western German rearmament.

The pictures on this page are, left to right:

CARLSEN	Jan. 10
CLARK	Jan. 13
MASSEY	Jan. 24
KENNAN	Feb. 7
JOY	Feb. 9



FEBRUARY—Continued

20 President Truman created commission headed by Lt. Gen. James H. Doolittle to study airport sites and safety, welfare and peace of mind of residents near airfields.

U.N. truce delegates repeated their rejection of the U.S.S.R. as a neutral supervisor of an armistice in Korea.

U.S. Secy. of State Dean Acheson at opening of 9th session of North Atlantic Treaty council defined the job of the session as one of translating decisions into action.

21 Prime Minister Churchill submitted to parliament White Paper estimating British defense expenditures during the fiscal year 1952-53 at £1,462,200,000, of which £85,000,000 would come from U.S. aid.

South Korean marines drove off 2-day Communist attempt to recapture island of Yangdo off northeastern Korean coast.

Rioting broke out in Dacca, East Pakistan, in protest against Pakistani government's decision to make Urdu Pakistan's only official language.

British government announced abolition of personal identity cards required to be carried since the outbreak of World War II.

22 U.S.-Mexican negotiations on U.S. military aid for Mexico were suspended.

Libyan authorities arrested and deported Beshir Bey Sadaawi, leader of antiwestern opposition Congress party, and some of his followers.

Steven J. L. Hardie, chairman of Britain's nationalized iron and steel industry, resigned in protest against impending government decision to raise steel prices.

British military authorities lifted restrictions on daytime passage by road in and out of the Suez Canal Zone.

North Atlantic council meeting at Lisbon approved report

setting out principles of the European Defense Community.

23 Wage Stabilization board exempted employee pension and profit sharing plans from wage controls.

Indonesian Premier Sukiman and his cabinet resigned as result of differences over acceptance of U.S. aid under the Mutual Security act.

24 North Atlantic council stated in communiqué that member nations would provide about 50 divisions in 1952 as well as 4,000 operational aircraft and strong naval forces.

Commerce Secy. Charles Sawyer announced that 10 western European nations had joined the U.S. in a multilateral arrangement to increase effectiveness of controls on exports of strategic goods to Communist-dominated areas.

French forces in Indochina reported withdrawal from Hoa Binh, a strongpoint 40 mi. west of Hanoi.

25 U.S. House Speaker Sam Rayburn (Dem., Tex.) held that house rules forbade use of television, newsreel cameras and tape recordings at house committee hearings.

U.S. court of appeals unanimously upheld convictions of Julius and Ethel Rosenberg of death sentences imposed upon them for transmitting atomic secrets to soviet agents.

6th winter Olympic games closed at Oslo with Norway winning 7 out of 22 championships.

26 U.S., British and French governments announced full agreement with western Germany on latter's financial contributions to west European defenses.

Prime Minister Churchill advised house of commons that the U.K. had developed its own atomic bomb and had the plant to insure regular production.

27 U.S. senate voted 45 to 44 to return to committee bill providing for statehood for Alaska.

Japan and the U.S. signed a military base administrative agreement providing for maintenance of U.S. air, naval and army bases in Japan.

Agreement providing for U.S.

grant-in-aid to Israel of \$50,000,000 was signed at Tel Aviv.

U.N. headquarters in Tokyo characterized Communist germ warfare charges as a camouflage for epidemics suffered by Communist troops in Korea.

28 Paul A. Walker was promoted to chairmanship of Federal Communications commission and Robert T. Bartley of Texas was named a member of the commission by President Truman.

29 Government of French Premier Edgar Faure resigned after national assembly rejected, 309 to 283, proposed 15% tax increase to meet French commitments for western Europe's defense.

MARCH

1 King Farouk I of Egypt named independent Ahmed Naguib Hilaly Pasha as premier upon resignation of Aly Maher Pasha.

U.N. truce negotiators charged that Communist forces had impressed many South Korean prisoners of war and then falsely labelled them volunteers.

2 Egyptian Premier Hilaly Pasha announced suspension of parliament for one month.

3 Puerto Rican people overwhelmingly ratified constitution giving them self-government under U.S. control.

U.S. supreme court upheld, 6 to 3, New York law barring members of subversive organizations from teaching in public schools.

Pres. Andrés Martínez Trueba of Uruguay became chairman of 9-man governing council under constitutional changes vesting executive powers in the council.

4 Secy. of State Acheson denounced as entirely false Communist charges that U.N. forces had engaged in germ warfare in Korea.

Ivar H. Peterson was nominated by President Truman to be a member of the National Labor Relations board.

U.S. house of representatives voted 236 to 162 to return to committee administration-supported universal military training bill.

U.S. justice dept. requested that 186 members of the du Pont family, including an 8-mo.-old baby, be made defendants in antitrust proceeding in federal court in Chicago, Ill.

Dominican Republic charged that 5 soviet submarines had invaded its territorial waters.

5 Conservative government of Prime Minister Churchill received vote of confidence of 313 to 55 on the British rearmament program.

Kwame Nkrumah was named the first prime minister of the Gold Coast, British West African colony.

Secy. of State Acheson formally notified the house of representatives that no commitments concerning U.S. troops had been made during recent conferences between President Truman and British Prime Minister Churchill.

6 Pres. Harry S. Truman in a special message to congress requested \$7,900,000,000 for foreign military and economic aid during fiscal year beginning July 1, 1952.

National Production authority relaxed building controls on housing, commercial, highway and school projects.

Soviet Finance Minister A. G. Zverev submitted record budget for year 1952, estimating revenue at 508,800,000,000 roubles and expenditure at 476,900,000,000 roubles, of which 23.9% was earmarked directly for defense.

7 President Truman directed government officials not to comply with a house committee request for record of all cases referred to justice dept. in last 6 years in which action was declined.

8 Peking radio reported that Chinese Communist Foreign Minister Chou En-lai had formally charged the U.S. with waging germ warfare in Korea.

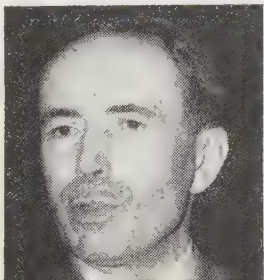
Independent Antoine Pinay formed France's first postwar rightist cabinet.

Gen. James A. Van Fleet, U.S. 8th army commander, revealed that Communist forces in Korea had been built up to about 900,000 men.

9 Strike of engineers, firemen and conductors crippled railroad service in the midwest.

The pictures on this page are, left to right:

CHURCHILL.....	Feb. 17
PINAY.....	March 8
VAN FLEET.....	March 8
BUTLER.....	March 11
ISMAY.....	March 12



MARCH—Continued

10 Former Cuban Pres. Fulgencio Batista ousted Pres. Carlos Prío Socarrás in an almost bloodless coup d'état.

U.N. headquarters in Tokyo announced that the North Korean army had been entirely equipped or re-equipped with soviet matériel and that the chief sources of supply for the Chinese Communists were soviet-furnished.

Soviet Union requested in notes to the U.S., the U.K. and France that a peace treaty be negotiated as soon as possible with a united Germany.

U.S. supreme court upheld, 5 to 3, contempt sentences imposed upon 6 defense attorneys for their actions during trial of 11 U.S. Communist leaders.

Striking railroad engineers, firemen and conductors in middle west began returning to work in deference to federal court order.

British Chancellor of the Exchequer R. A. Butler presented to house of commons record peacetime budget for fiscal year beginning April 1, estimating expenditure at £4,240,000,000 (\$11,872,000,000) and revenue at £4,778,000,000 (\$13,378,400,000).

12 Gen. Lord Ismay, British commonwealth relations secy., was appointed secy.-gen. of the North Atlantic Treaty organization; the marquess of Salisbury succeeded him in the British cabinet.

Lt. Gen. Sir Willoughby Norrie was appointed governor general of New Zealand by Queen Elizabeth II.

U.S. air force revealed that Boeing Airplane Co. had been awarded a contract to build the second U.S. atomic aeroplane in collaboration with the United Aircraft Corp.

13 President Truman's plan to reorganize the bureau of internal revenue became effective when the senate endorsed it, 53 to 37, after bitter debate.

Philippines-Formosa area was separated from the command of General Ridgway and placed directly under the commander, United States Pacific naval forces.

U.S., British and French governments proposed to the U.S.S.R. a new draft treaty with Austria and attacked the U.S. S.R. as responsible for failure to give Austria full independence as promised in the 1943 Moscow declaration.

Ba U was elected first permanent president of the union of

Burma by the Burmese parliament.

14 U.S. Ambassador John E. Peurifoy warned the Greek people that continuing governmental instability would have a disastrous effect on the efficient use of U.S. aid.

Chairman Tom Connally of the senate foreign relations committee condemned proposal to give the U.K. \$600,000,000 and France \$400,000,000 in economic aid during the 1953 fiscal year.

15 U.S. and Brazil signed a mutual military assistance agreement at Rio de Janeiro.

16 Negotiations with respect to the Iranian oil problem being conducted in Tehran by the world bank were reported to have broken down.

17 International boxing clubs of New York and Illinois were charged with conspiring to monopolize the professional championship boxing business in a civil antitrust suit filed by the U.S. justice dept.

18 Criminal and most of the other provisions of the lobbying act of 1946 were held unconstitutional by a special 3-judge district court in Washington, D.C.

19 Canadian Finance Minister Douglas Abbott presented budget estimate for fiscal year beginning April 1, showing total expenditure at Can. \$4,335,796,800 of which defense costs and production accounted for \$2,001,725,000.

20 U.S. senate consented to ratification of peace treaty with Japan and also of 3 mutual defense pacts with Japan, Australia and New Zealand and the Philippines.

Appellate division of South African supreme court declared unconstitutional laws placing coloured voters in Cape colony on separate rolls.

Wage Stabilization board public and labour members recommended a \$17½ hourly wage increase payable in 3 instalments over 18 months, increases in fringe benefits and union shop as settlement of the nation-wide steel labour dispute.

Academy of Motion Picture Arts and Sciences announced awards for best acting in 1951 to Humphrey Bogart ("The African Queen") and Vivien Leigh ("A Streetcar Named Desire").

21 Polish embassy in Washington was ordered by the U.S. government to stop immediately the release of all publications except routine announcements.

22 All British troops were withdrawn from the Egypt-

tian areas of Ismailia, Suez Canal Zone.

23 Egyptian parliament was dissolved by royal decree pending the holding of new elections.

24 Defense Mobilization Director Charles E. Wilson repudiated as a serious threat to the mobilization program the Wage Stabilization board's recommendations for settlement of the steel dispute.

President Truman urged congress to enact legislation admitting 300,000 European refugees to the U.S. over a 3-year period.

25 John Foster Dulles resigned as Republican adviser to Secy. of State Acheson.

Soviet proposals for a German peace treaty based upon Germany's armed neutrality were rejected by the U.S., the U.K. and France.

Unattended armoured car was looted of \$681,000 by 3 unidentified men in Danvers, Mass.

26 Premier Mohammed Chenik of Tunisia and 3 cabinet ministers were arrested by French military authorities.

Burmese Prime Minister U Nu announced that major military operations had been launched against refugee Chinese nationalist troops near the eastern frontier.

Dudley Senanayake was appointed prime minister of Ceylon in succession to his father, Stephen Senanayake, deceased.

27 Office of Price Stabilization ordered U.S. restaurants to display ceiling prices for their meals and beverages, effective April 25.

Federal Reserve board held, 3 to 2, that Transamerica Corp. had violated the Clayton act by stock ownership or control of 48 banks with 667 offices in Arizona, California, Nevada, Oregon and Washington.

Seretse Khama was barred for life by the British government from the chieftanship of a Bechuanaland tribe because of his action in marrying a white woman.

28 Bey of Tunis publicly disavowed his nationalist advisers and named as premier conservative pro-French Salah ed-Din ben Mohammed Bakkush.

British house of commons approved, 303 to 273, the conservative government's proposals to make charges for medical prescriptions and some surgical appliances and dental services under the national health program.

U.N. Disarmament commis-

sion held further discussion of germ warfare charges made by Soviet Deputy Foreign Minister Jacob A. Malik to be out of order and outside the commission's competence.

29 President Truman announced that he would not be a candidate for re-election and would not accept the nomination if he were drafted.

International Red Cross denounced as tendentious and abusive Communist Chinese broadcasts on germ warfare charges.

30 Charles E. Wilson resigned as defense mobilization director in a letter charging President Truman with changing the plan agreed upon for ending the steel labour dispute.

U.N. Korean command announced that it had protested to Communist commanders that U.N. prisoners were being held in camps near important bombing targets in North Korea.

31 Forthcoming conference at London on the Trieste question was strongly condemned by Marshal Tito in a speech to the Yugoslav national assembly.

APRIL

President Sukarno of Indonesia announced formation of a new cabinet headed by Dr. Wilopo as premier.

Jean Letourneau, associated states minister in the French cabinet, was appointed to the additional post of high commissioner in Indochina with headquarters in Saigon.

2 Queen Juliana of the Netherlands and her husband, Prince Bernhard, arrived at Washington, D.C., for a tour of the U.S. and Canada.

General Eisenhower stated in his first annual report as supreme commander, Allied powers in Europe, that the free world was much better able to defend itself than a year before.

Great Britain offered the Anglo-Egyptian Sudan limited self-government with its own cabinet and parliament under a British governor-general.

3 Pres. Harry S. Truman accepted the resignation of Atty. Gen. J. Howard McGrath after latter dismissed corruption investigator Newbold Morris; U.S. District Judge James P. McGranery of Pennsylvania was named to succeed McGrath.

Wage negotiations between the United Steelworkers union and the steel companies were terminated.

Canadian Defense Minister Brooke Claxton revealed that

APRIL—Continued

the Canadian armed forces had doubled in size since the outbreak of the Korean conflict.

U.S., U.K. and Italian discussions with respect to the internal administration of the Anglo-U.S. zone of Trieste began in London.

4 Lord Ismay of the U.K. took office as secretary general of the North Atlantic Treaty organization.

Argentine government announced establishment of a permanent Argentine observation post at Esperanza in an Antarctic area in dispute with the U.K.

5 World arms census, including disclosure of atomic plants as one stage, was proposed by the U.S. in a working paper presented to the U.N. Disarmament commission.

Soviet Union offered at the International Economic conference in Moscow to buy from \$7,500,000,000 to \$10,000,000,000 worth of western goods during the next 2 or 3 years.

6 Chinese Communists stated in broadcast that anti-Communist prisoners of war would not be subject to punishment on political grounds when they were returned to North Korea and China.

Syrian government issued a decree dissolving all political parties and organizations in Syria.

French authorities in Indochina reported that a 2-week offensive by French and Vietnam troops had destroyed an elite Viet-Minh division in the delta area south of Hanoi.

Nonwhite organizations in South Africa held a series of meetings to protest against governmental racial policy.

7 President Truman requested congress as a matter of utmost urgency to extend his war powers for 60 days after the effective date of the Japanese peace treaty.

Spanish government in notes to other members of the Tangier control committee requested revision of the convention governing the administration of Tangier.

8 William H. Draper, Jr., was appointed permanent U.S. delegate to the North Atlantic Treaty council.

President Truman issued an executive order directing Commerce Secy. Sawyer to seize U.S. steel mills engaged in dispute with the United Steelworkers union, who called off projected strike; possession of the mills was

taken by Sawyer as of 12 o'clock midnight, E.S.T.

Federal reserve board removed instalment credit restrictions on all items selling for less than \$100.

Canadian Finance Minister Douglas C. Abbott presented budget for fiscal year beginning April 1, estimating revenue at Can. \$4,279,000,000 and expenditure at \$4,270,000,000, of which \$2,000,000,000 was for defense.

9 Three major steel companies began legal actions in federal court at Washington, D.C., to contest the legality of the seizure of their plants, but were denied temporary restraining orders.

Suit by Harry Ferguson for \$341,600,000 for patent infringement was settled by Ford Motor Co. interests for \$9,250,000.

President Truman signed bill providing for per diem compensation to U.S. prisoners of war who were subjected to cruelty or were forced to work without compensation during World War II.

10 Soviet Union dispatched a new note to the U.S., the U.K. and France proposing that all-German elections be held in the near future under the supervision of the 4 occupying powers rather than that of the U.N.

President Truman sent a series of reorganization plans to congress that would put postmasters, customs officials and U.S. marshals under civil service.

Sheikh Abdullah, prime minister of predominantly Moslem Kashmir, declared that Kashmir's accession to India must be limited to foreign affairs, defense and communications because of the possibility of the revival of communalism in India.

11 White House announced that General Eisenhower would be relieved at his request on June 1 as supreme commander, Allied powers in Europe.

Bolivian military junta was overthrown by a nationalist revolution after 3 days of fighting.

Decree of Queen Elizabeth II of the U.K. that she, her children and their descendants would retain the family name of Windsor was published in London.

12 Permission to inspect income tax returns under certain conditions was given by President Truman to a house subcommittee investigating the justice dept.

13 Federal Communications commission terminated prohibition against the construction of new television stations and assigned 2,053 new stations

to 1,291 communities throughout the U.S.

14 Proposal to place the complaint of Tunisia against France on the agenda of the U.N. Security council failed to secure the necessary 7 affirmative votes.

Interstate Commerce commission granted freight rate increases of 6% to 9% to U.S. railroads.

Greek government ordered the release under a program approved by parliament of almost 20,000 prisoners held for Communist or nazi collaborationist activities.

15 President Truman signed the ratification of the peace treaty with Japan and also defense treaties with Japan, Australia and New Zealand and the Philippines.

All restrictions on Japan on the production of arms and aircraft were lifted by Allied headquarters in Tokyo.

Spanish Chief of State Francisco Franco and Portuguese Premier Antonio de Oliveira Salazar announced after a conference their decision to treat the Iberian peninsula as a strategic unity.

British government issued statement undertaking that so long as the U.K. remained a party to the North Atlantic treaty it would come to the aid of any member of the European Defense Community which might be attacked.

16 Price Stabilization Director Ellis Arnall accused the steel industry of making unjustified price demands which would wreck the stabilization program.

Robert D. Murphy was nominated by President Truman as the first postwar U.S. ambassador to Japan.

Victor Paz Estenssoro was sworn in as president of Bolivia after return from exile in Argentina.

18 Commerce Secy. Sawyer, acting as the operator of seized U.S. steel plants, announced pending plans to raise steelworkers' wages.

19 National Production authority lifted nearly all controls on the consumption of natural rubber.

20 Iranian government announced resumption of production of motor oil at the former Anglo-Iranian Oil Co. refinery at Abadan.

21 U.S. senate voted, 44 to 31, to bar the use of funds in a deficiency appropriation bill for the purpose of carrying out

the seizure of the steel industry, ordered by President Truman.

Stanley Andrews of Arkansas was named technical co-operation (Point Four) administrator by President Truman.

22 Resolution calling for President Truman's impeachment for his action in directing the seizure of U.S. steel plants was introduced in the house of representatives by Rep. Robert Hale (Rep., Me.).

Powerful atomic bomb was exploded at the Nevada proving grounds before press and radio correspondents and television cameras.

23 New 556-mi. pipe line of the Iraq Petroleum Co. from Kirkuk, Iraq, to Banias, Syria, was completed.

U.S. senate voted, 39 to 36, to return to committee a bill providing for the abolition of the Reconstruction Finance Corp.

24 U.S. house of representatives approved, 255 to 88, a resolution providing for the investigation of the Wage Stabilization board by the house labour committee.

Five-day mutiny at the Michigan state prison at Jackson ended after Gov. G. Mennen Williams accepted 11 convict demands for reform.

25 U.S. state dept. announced decision to resume U.S. military aid to Iran following an exchange of notes between the U.S. and Iranian governments.

Asst. U.S. Atty. Gen. Holmes Baldridge asserted in argument in federal court that in the circumstances of the steel seizure President Truman was accountable only to the country and that his acts were conclusive.

27 850 industrial plants which had been earmarked as possible reparations were returned to Japanese control by Allied occupation authorities in Tokyo.

President Truman conceded that his powers were derived from and limited by the constitution but contended that it was his duty to take steps to preserve the national safety at a critical time.

28 Peace treaty between Japan and the U.S. and 9 other nations became effective with the deposit of ratification by the U.S.; U.S.-Japanese Mutual Security pact also took effect.

General Ridgway was appointed supreme commander, Allied powers in Europe; Gen. Mark W. Clark was named to succeed him as U.N. commander in Korea and commander of U.S. forces in the far east.

APRIL—Continued

Buckingham palace announced that the coronation of Queen Elizabeth II would be held June 2, 1953.

29 French passenger air liner flying from Frankfurt to Berlin was attacked by 2 soviet jet fighters.

U.S. District Judge David A. Pine ruled in Washington, D.C., that the executive order of President Truman directing the seizure of U.S. steel plants by Commerce Secy. Sawyer was illegal and unconstitutional; United Steelworkers immediately went out on strike.

Mutual Security pact between the U.S. and Australia and New Zealand became effective with the deposit of ratifications at Canberra, Austr.

International Red Cross suspended plans for the investigation of Communist charges that U.N. forces were waging germ warfare in Korea.

30 Government control of U.S. steel plants was ordered restored by U.S. court of appeals pending action on applications to the U.S. supreme court for review of the decision of the district court.

MAY

U.S. state dept. announced a ban on travel by U.S. citizens in the U.S.S.R. and soviet-controlled countries without the specific permission of the U.S. government.

U.S. court of appeals refused to attach a condition barring wage increases to its order staying the return of U.S. steel plants to their owners.

2 United Steelworkers union cancelled their strike against the steel industry in response to a request by President Truman.

3 U.S. supreme court granted petitions of the steel companies and the government for review of the lower court order invalidating the seizure of the steel industry, and barred changes in working conditions and wages pending decision of the case by the court.

First scheduled jet air liner

flight was completed by a British jet which landed at Johannesburg, South Af., after covering the 6,724-mi. route from London in 23 hr., 38 min.

4 Renewed negotiations at the White House between the steel companies and the steelworkers were broken off.

5 1952 Pulitzer prize for the best U.S. play went to *The Shrike* by Joseph Kramm; *The Caine Mutiny* by Herman Wouk was judged the best novel and the *St. Louis Post-Dispatch* won a medal for its exposé of federal graft.

Former Internal Revenue Commissioner Joseph D. Nunan, Jr., refused on grounds of possible self-incrimination to answer questions of a house subcommittee concerning his personal finances.

Conference on proposed central African federation issued a communiqué at London announcing agreement on a draft constitutional plan for the federation of Northern and Southern Rhodesia and Nyasaland.

Pakistani foreign ministry announced that an internationally recognized system of passports and visas would be instituted for travel between Pakistan and India.

6 Rajendra Prasad of the congress party was elected for a 5-year term as president of India by the constitutional electoral college.

7 Federal Reserve board suspended all controls on installment credit purchasing.

President Harry S. Truman named Henry H. Fowler, head of the National Production authority, to assume the additional post of defense production administrator.

General Ridgway revealed the terms of a definitive U.N. armistice offer made on April 28 to the Communists providing for solution of the remaining issues of airfield construction, prisoner of war exchange and truce supervision.

Iain A. Macleod was named minister of health in the British cabinet in succession to Harry Crookshank, who became lord privy seal.

Communist prisoners of war seized Brig. Gen. Francis T. Dodd, camp commandant on

Koje Island, off the South Korean coast.

8 Army Secy. Frank C. Pace, Jr., revealed development of the prototype of a 75-ton atomic gun.

Suan, Communist supply centre 35 mi. S.E. of Pyongyang, was reported wiped out by U.S. bombing raid.

U.S. government agreed to pay \$8,500,000 in settlement of damages amounting to about \$50,000,000 claimed by about 100 midwest trucking firms on account of seizure during World War II.

9 U.S. and British governments announced an agreement to permit Italians to take over some civil posts in the Anglo-U.S. zone of Trieste.

10 General Dodd was released by Communist prisoners at camp on Kojé Island after his successor, Brig. Gen. Charles F. Colson, granted some of their demands.

11 U.N. Economic and Social council reported that world industrial production in 1951 had reached the highest level in history.

12 Legality of President Truman's steel seizure order was argued before the U.S. supreme court by John W. Davis of New York, N.Y., for the steel companies and Acting Atty. Gen. Philip B. Perlman for Commerce Secy. Sawyer.

Gen. Mark W. Clark took over command of U.N. forces in Korea and U.S. forces in the far east from General Ridgway.

Icelandic government rejected a British protest against new fisheries regulations creating a 4-mi. limit for territorial waters.

13 U.S., the U.K. and France in another note to the U.S.S.R. on German unification reiterated their request for a survey of free election prospects by an impartial commission and said a unified Germany should be given freedom of action in foreign affairs in advance of a final treaty.

U.N. Food and Agriculture organization reported that the food supply of 15 nations in Africa, Asia Minor and Asia was threatened by a locust plague.

14 Brig. Gen. C. F. Colson was replaced as Kojé prison

camp commander by Brig. Gen. Haydon L. Boatner.

Messali Hadj, Algerian nationalist leader, was arrested and deported to France after his presence at Orleansville provoked serious rioting.

United Steelworkers union voted at their convention in Philadelphia to begin a new strike against the steel industry if it failed promptly to grant a satisfactory wage increase.

15 Gen. Mark W. Clark repudiated as invalid the agreement with Communist prisoners under which the former prison camp commandant on Kojé Island was released.

Bey of Tunis appealed to the Tunisian people to end the wave of violence led by nationalist extremists.

Yugoslav military authorities in the Yugoslav zone of Trieste announced new measures modifying the administration of the zone and linking it more closely with Yugoslavia.

16 Defense Secy. Lovett denounced as falsehoods Communist charges that U.N. forces in Korea had engaged in poison gas and bacteriological warfare.

C.I.O. Pres. Philip Murray accused Commerce Secy. Sawyer of bias against the United Steelworkers in operating the government-seized steel plants.

Gen. Héctor Trujillo was returned unopposed as president of the Dominican Republic in succession to his brother, Gen. Rafael Leónidas Trujillo.

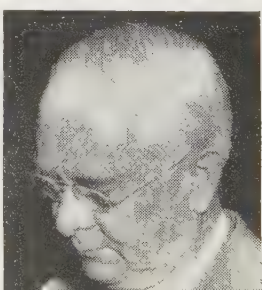
17 U.S. airborne force was flown to Kojé Island to prevent new outbreaks by Communist prisoners of war.

18 Vice Adm. Charles T. Joy, chief U.N. truce negotiator, called upon Communist negotiators to drop their propaganda and false charges.

19 Controls on raw cotton and most other textiles were lifted by the Office of Price Stabilization which also authorized increases in the prices of canned goods.

The pictures on this page are, left to right:

LETOURNEAU April 1
MORRIS April 3
SAWYER April 8
DODD May 7
BEY OF TUNIS May 15



MAY—Continued

British chargé d'affaires in Peking notified the Chinese Communist government of the decision of British trading companies in China to close their businesses.

Gen. Mark Clark announced the appointment of Maj. Gen. William K. Harrison, Jr., as chief U.N. truce negotiator in Korea.

President Truman signed bill giving members of the armed forces a 4% cost-of-living pay increase plus a 14% increase in food and rental allowances.

20 U.S. senate confirmed, 52 to 18, the nomination of Judge James P. McGranery of Pennsylvania as U.S. atty. gen.

French national assembly endorsed, 324 to 206, Premier Pinay's plan for a gold-based long term loan.

21 Three-year dispute between U.S. railroads and 3 operating unions was ended by an agreement reached at a conference at the White House.

General Ridgway reported a significant build-up of soviet military strength in the far east.

Iranian Premier Mossadegh stated in a report to the Iranian senate that all efforts to sell Iranian oil abroad had failed.

British house of commons voted, 305 to 283, to approve the conservative government's plans to return the long-distance trucking industry to private ownership.

22 President Truman asserted at a press conference that he had inherent constitutional powers, including seizure, which neither congress nor the courts could take away.

General Ridgway told a joint session of congress that the cessation or continuance of hostilities in Korea was up to the Communists.

Soviet Union charged in a note to Iran that it had violated the

1921 Soviet-Iranian treaty by accepting U.S. military aid.

U.S. house subcommittee reported that special legislation was not needed to regulate organized baseball but said it should not be exempted from the anti-trust laws.

23 U.S. railroads were returned to private ownership upon settlement of long-standing labour dispute with operating unions.

24 Martial law was declared by the South Korean government in southeastern Korea, including Pusan.

25 Western Union employees voted to accept a proposal for ending their 52-day strike.

Proposed peace contract with western Germany was denounced by the U.S.S.R. as violative of the Potsdam agreement in notes to the U.S., the U.K. and France.

26 Treaties were signed by foreign ministers of the U.S., the U.K. and France and Chancellor Adenauer of western Germany restoring west German sovereignty and ending the Allied occupation.

U.S. supreme court in reversing N.Y. ban on *The Miracle* unanimously held that motion pictures were entitled to the constitutional guarantees of free speech and free press.

British war office announced that Gen. Sir John Harding would succeed Field Marshal Sir William J. Slim as chief of the imperial general staff on Nov. 1.

27 Series of treaties creating a European defense force were signed in Paris by Belgium, Luxembourg, France, the Netherlands, the U.S., the U.K. and western Germany.

28 Canadian government delivered a note to the U.S. expressing concern that a Canadian infantry unit had been detached from the Canadian brigade in Korea and dispatched to Koje Island without prior consultation.

French police arrested more than 600 persons, including Communist leader Jacques Duclos, during Communist demonstrations against General Ridgway's arrival in Paris.

Government of the Mongolian People's Republic an-

nounced that Tsendenbal had been elected prime minister in succession to Marshal Choibalsan, deceased.

29 President Truman requested a \$4,200,000,000 expansion in the U.S. atomic energy program.

U.S. joint congressional resolution confirming state claims to submerged lands beyond the low-water mark was vetoed by President Truman.

U.N. commission for Korea requested Pres. Syngman Rhee of South Korea to lift martial law in Pusan and release members of the national assembly who had been detained.

30 General Ridgway took over command of Allied forces in Europe from General Eisenhower.

Allied high commissioners in Germany protested to the soviet control commission against action which had been taken to seal off the soviet zone from the rest of Germany.

31 Communist party headquarters all over France were raided by French police.

JUNE

Western Berlin residents were barred by soviet authorities from the soviet zone of Germany.

U.S. treasury dept. issued a new Series H savings bond paying 3% interest if held to maturity (9 yr., 8 mo. from date of purchase).

Panamanian electoral board reported that Col. José Remón, former national police chief, had won the presidential election held on May 11, 1952.

2 U.S. supreme court held, 6 to 3, that President Truman's executive order authorizing seizure of U.S. steel plants was unconstitutional; President Truman ordered the plants returned to private ownership as United Steelworkers again went on strike.

Gheorghe Gheorghiu-Dej, Rumanian Communist party secy.-gen., replaced Petru Groza as premier.

3 Pres. Harry S. Truman was reported to have sent a note to South Korean Pres. Syngman

Rhee, expressing shock at the feud between Rhee and the national assembly.

Rumanian Communist party announced that Vice Premier and Foreign Minister Ana Pauker had been dropped from party organizations and reprimanded for rightist deviations.

South African Governor General Ernest Jansen signed a bill creating a high court of parliament superior to all other constitutional courts of the country.

4 President Truman asked congress for a supplemental defense appropriation of \$3,463,555,440 for the fiscal year beginning July 1.

Nation-wide strike called by the French Confédération Générale du Travail in protest against arrests of Communist party members resulted in a complete fiasco.

Jordani government announced the appointment of a regency council to exercise the constitutional powers of King Talal, said to be suffering from a nervous ailment.

5 U.S. treasury dept. was ordered by President Truman to end all U.S. tariff concessions to Hungary, effective July 5.

6 U.N. Secy. Gen. Trygve Lie revealed that he had sent a note to South Korean President Rhee expressing anxiety at the latter's feud with the national assembly.

U.S. government disclosed that it had awarded to France contracts totalling \$50,000,000 for naval vessels and equipment.

Alexander S. Panyushkin, soviet ambassador to the U.S., informed Secy. of State Acheson of his recall to the U.S.S.R.

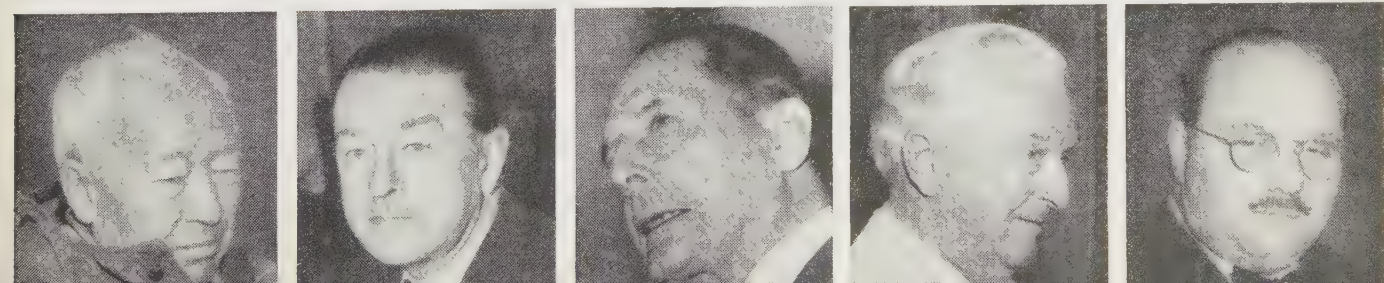
7 President Truman in speech at Springfield, Mo., denied charges that U.N. aircraft in Korea had been outclassed in performance by soviet-built planes.

Political activities of Christian missionaries among India's tribal population were condemned by Prime Minister Nehru.

8 British air ministry announced the appointment of Air Chief Marshal Sir William Dickson to succeed Marshal of the R.A.F. Sir John Slessor as air chief of staff on Jan. 1, 1953.

The pictures on this page are, left to right:

RHEE..... May 29
ALEXANDER..... June 10
MacARTHUR..... June 17
McCARRAN..... June 25
FAROUK..... June 29



JUNE—Continued

9 Labour negotiations between the steel industry and United Steelworkers broke down and were recessed indefinitely.

The U.S. senate passed compromise authorization of \$6,447,730,750 for foreign economic and military aid, 59 to 11, and sent bill to the White House.

Down payment requirements on homes were relaxed by the federal reserve board and the Housing and Home Finance agency.

India and Japan signed a peace treaty in which India waived all right to reparations and agreed to return all Japanese property in India.

10 President Truman in address to joint session of congress requested legislation authorizing him to seize the steel industry; senate rejected 3 proposed amendments to the defense production act authorizing seizure.

Field Marshal Lord Alexander, British defense minister, arrived in Tokyo for conferences with Gen. Mark Clark and a tour of the Korean battlefield.

One U.S. soldier was killed and 14 wounded when U.N. troops were required to use force to rout Communist prisoners from a compound on Koje Island.

11 President Truman asked the defense dept. to invite military observers from 5 neutral countries to study the Communist prison camp uprising on Koje Island.

U.S. senate passed by voice vote and sent to the White House conference bill to overhaul and codify U.S. immigration and naturalization laws.

12 President Truman accepted the credentials of Eikichi Araki as first postwar Japanese ambassador to the U.S.

Al Azhar university in Cairo, leading Islamic intellectual and theological institution, issued an interpretation of the Koran denying women the right to vote or sit in parliament.

13 Moscow radio announced the appointment of Deputy Foreign Minister Andrei A. Gromyko as soviet ambassador to the U.K. in succession to Georgi N. Zarubin, who was named ambassador to the U.S.

14 Keel of the U.S.S. "Nautilus," the world's first atomic-powered submarine, was laid at Groton, Conn., by President Truman.

Soviet authorities were revealed to have agreed to end restrictions on Austrian shipping

on the Danube river.

15 Field Marshal Lord Alexander, British defense minister, stated at U.S. 8th army headquarters in Korea that he was in complete accord with the U.N. conduct of armistice negotiations.

16 Unarmed Swedish air force plane was shot down by soviet jet fighters over international waters in the Baltic sea.

17 U.S. army dept. ruled in effect that General MacArthur, Republican national convention keynoter, was not affected by regulations prohibiting political activity by army officers because he was not on active duty.

18 U.S. senate rejected 3 presidential reorganization plans to put postmasters, U.S. marshals and principal customs officers under civil service.

John L. Lewis, United Mine Workers president, offered a loan of \$10,000,000 to striking United Steelworkers.

St. Lawrence Seaway and Power project was disapproved by the senate, 43 to 40, despite a last-minute appeal from President Truman.

U.S. agreement to give substantially more aid to Indochina within congressional limitations was revealed at Washington, D.C.

19 Resettlement of Communist prisoners of war on Koje Island into 500-man stockades was completed.

Anglo-Iranian Oil Co. obtained an order from an Aden court preventing the departure of a tanker alleged to be carrying Iranian oil.

20 President Truman signed bill authorizing appropriation for mutual security of \$6,447,730,750, or 18.6% less than the amount requested by him.

U.S. government urged the U.N. Security council to request the International Red Cross to investigate Communist germ warfare charges.

U.S. justice dept. was ordered by President Truman to determine whether the U.S. government had been overcharged on construction subsidies for the new superliner "United States."

Asian-African group of states presented a formal request to U.N. Secy.-Gen. Lie to call a special session of the general assembly to consider the Tunisian situation.

21 Maj. Gen. William K. Harrison, chief U.N. truce delegate, cited to Communist negotiators 2 instances during World War II when the U.S.S.R.

had asserted the principle of no forced repatriation of prisoners for which the U.N. was contending.

22 Peking radio claimed that aid to the Communist party in Malaya was being given by the U.S.S.R. and other Communist nations.

23 More than 500 U.N. planes attacked 5 of the largest hydroelectric power plants in north-west Korea.

South Korean assembly approved bills in effect allowing an indefinite extension of President Rhee's term of office.

24 U.S. navy planes struck again at large North Korean hydroelectric plants; attacks were denounced by British labour party leaders as provocations which might lead to a 3rd world war.

President Truman signed a bill authorizing the armed forces to confer commissions on women doctors, dentists and other medical specialists.

Anglo-U.S. agreement to give Italy more administrative authority in the Anglo-U.S. zone of Trieste was denounced by the U.S.S.R. as a violation of the 1947 peace treaty.

25 President Truman vetoed as discriminatory and un-American the McCarran-Walter bill to revise and codify U.S. immigration and naturalization laws.

26 U.S. house of representatives overrode, 278 to 113, President Truman's veto of the McCarran-Walter immigration and naturalization bill.

All members of the U.N. Security council except the U.S.-S.R. abstained from voting on a soviet proposal that the council appeal for ratification of the 1925 Geneva treaty against germ warfare.

U.S. Secy. of State Acheson explained to a group of members of parliament that an unintentional slip-up had prevented the U.K. from being consulted on raids on North Korean hydroelectric installations.

27 McCarran-Walter immigration bill became law when the senate overrode President Truman's veto, 57 to 26.

28 U.S. congress passed a modified economic controls bill continuing wage controls to April 30, 1953, rent control to Sept. 30, 1952, and priorities and allocations authority to June 30, 1953.

29 King Farouk of Egypt accepted the resignation of Premier Hilaly Pasha and called upon Hussein Sirry Pasha to form a government.

U.S. determination to remain in and defend Berlin was affirmed by Secy. of State Acheson at a press conference in western Berlin.

30 Brookings institution reported that 6,500,000 persons owned publicly held stocks, of whom 76% earned less than \$10,000 a year after taxes.

President Truman signed Defense Production Act Amendments of 1952 shortly before expiration of current law.

U.S., British and French high commissioners in Germany renewed their protests to soviet authorities against interference with traffic on the Berlin-Helmstedt Autobahn and so-called security measures taken by east German authorities.

JULY

1 U.S. Treasury dept. reported that the deficit for the fiscal year ending June 30 was \$4,016,640,378.

U.S. senate consented, by vote of 77 to 5, to ratification of the peace contract between western Germany and the western Allies.

Labour party motion of censure against the British conservative government for failure to secure effective consultation on Korean air operations was defeated in the house of commons, 300 to 270.

2 Syria in a note to the U.N. accused Israel of violating U.N. decisions to internationalize Jerusalem by establishing its governmental offices there.

3 Legislation approving Puerto Rico's new constitution contingent upon certain changes was signed by Pres. Harry S. Truman.

United Steelworkers filed unfair labour practice charges against 6 major steel companies, charging them with conspiring to prevent settlement of the steel labour dispute.

President Truman announced that he would not comply with the request made by congress in the Defense Production Act Amendments of 1952 to use the Taft-Hartley act in the steel labour dispute.

4 U.S. congress approved a G.I. Bill of Rights for veterans of the armed forces since the outbreak of hostilities in Korea.

Korean national assembly approved constitutional amendments providing for popular presidential elections, a bicameral congress and control of the cabinet by the assembly.

5 Dismissal was announced of Rumanian Foreign Minister

JULY—Continued

Ana Pauker, former prominent Rumanian Communist party official.

Both houses of U.S. congress gave final approval to a \$76,849,392 legislative appropriation bill with rider allowing members of congress to deduct for federal income tax purposes \$3,000 of their living expenses in Washington.

6 Government candidate Adolfo Ruiz Cortines was elected president of Mexico by an overwhelming majority in national elections.

Both houses of U.S. congress completed action on a compromise bill appropriating \$46,610,938,912 for U.S. armed forces during the fiscal year ending June 30, 1953.

Swiss voters in a national plebiscite rejected government proposals to meet the cost of rearmament through increased income and beverage taxes.

7 82nd congress adjourned sine die after approving compromise appropriations bills for rivers and harbours and the Atomic Energy commission.

S.S. "United States" set a new record of 3 days 10 hr. 40 min. for eastward crossing of the Atlantic from Ambrose light, off New York, to Bishop Rock light, England.

8 Pres. Philip Murray of the United Steelworkers requested Atty. Gen. James P. McGranery to take action against 6 major U.S. steel companies under the antitrust laws for their action in the steel labour dispute.

Gen. Matthew B. Ridgway, supreme allied commander, Europe, was assigned command of all U.S. forces in Europe by the U.S. defense dept.

Pres. Truman signed a bill authorizing taxpayers to deduct from their gross income a maximum of 20% rather than 15% for contributions to charitable organizations.

9 U.S. information service library in Buenos Aires was severely damaged by a bomb explosion.

U.S.S.R. vetoed a U.S. resolution in the U.N. Security council condemning the making of false charges such as the soviet charges on germ warfare.

10 Gen. Mark W. Clark relieved Gen. James A. Van Fleet, U.S. 8th army commander in Korea, of all routine noncombat responsibilities.

British government ordered the expulsion of Pavel S. Kuznetsov, second secretary of the soviet embassy in London, for receiving

secret information from a foreign office employee.

11 Gen. Dwight D. Eisenhower was chosen Republican presidential nominee at convention in Chicago on the first ballot; Sen. Richard M. Nixon of California received the vice-presidential nomination.

12 U.N. forces concluded a 24-hr. aerial bombardment of Pyongyang, North Korean capital.

Arthur E. Summerfield of Michigan was named to succeed Guy G. Gabrielson as chairman of the Republican national committee.

13 U.S. government stated in a formal report to the U.N. Security council that more than 100,000 U.N.-held prisoners had strongly indicated a desire not to return to Communist territory.

14 S.S. "United States" set a new record of 3 days 12 hr. 12 min. for westward crossing of the Atlantic from Bishop Rock to Ambrose light.

Office of Price Stabilization removed price controls on most fresh and processed fruits and vegetables.

15 Pres. Philip Murray of the United Steelworkers and industry negotiator Joseph M. Larkin of Bethlehem Steel Co. announced failure of further negotiations in steel labour dispute.

British Prime Minister Churchill rejected demands that Dr. Hewlett Johnson, Dean of Canterbury, be ousted from his church office and tried for treason for endorsing Communist germ warfare charges.

William H. Draper, Jr., U.S. ambassador to NATO, reported that orders totalling \$684,000,000 for military equipment for NATO forces had been placed in Europe during the fiscal year ending June 30.

Soviet government periodicals published in the U.S. were banned by the state dept. which also suspended its Russian language magazine *Amerika*.

16 Chinese Communist Foreign Minister Chou En-lai announced acceptance with reservations of the Geneva conventions on gas and germ warfare and treatment of war prisoners.

President Truman signed bill giving federal inspectors greater authority to enforce coal mine safety measures.

17 Ahmad Ghavam es-Saltaneh was designated premier of Iran following the resignation of Mohammed Mossadegh after dictatorial powers were refused him.

18 Walter J. Donnelly, U.S. ambassador and high commissioner in Austria, was named to succeed John J. McCloy as U.S. high commissioner in Germany.

President Truman signed bill increasing monthly benefits under the Social Security act by 12½%, with a minimum increase of \$5.

19 Pres. Juho Paasikivi of Finland opened the 15th modern Olympic games before 70,000 persons at Helsinki.

20 Company and union leaders in the steel industry again failed to reach agreement for settlement of the steel strike in a 4-hr. conference.

21 Iranian Premier Ahmad Ghavam es-Saltaneh resigned after a general strike and severe rioting broke out throughout Iran.

Severe earthquake rocked an area of more than 100,000 sq. mi. in southern California.

Wage policy committee of United Steelworkers voted unanimously to insist upon all benefits recommended by the Wage Stabilization board.

22 Mohammed Mossadegh was renamed premier of Iran and received an overwhelming endorsement from the *majlis*.

International court of justice ruled, 9 to 5, that it did not have jurisdiction over the oil dispute between Britain and Iran.

23 Control of the Egyptian army was seized by Maj. Gen. Mohammed Naguib in a coup d'état which forced the resignation of Premier Hilaly Pasha and the designation of Aly Maher Pasha to succeed him.

24 White House announced that President Truman had commuted to life imprisonment the death sentence of Oscar Collazo, convicted of killing a White House guard while engaged in an assassination plot against the president.

United Steelworkers and the major steel companies settled their dispute over wages and working conditions in a conference at the White House.

25 6-nation pact providing for a western European coal and steel production pool became effective.

26 Gov. Adlai E. Stevenson of Illinois was named Democratic presidential nominee on the third ballot at convention in Chicago; Sen. John J. Sparkman of Alabama received the vice-presidential nomination.

Maj. Gen. William K. Harrison, Jr., U.N. truce negotiator, reported that 3 weeks of secret

truce negotiations had proven fruitless and that the impasse over repatriation of prisoners had not been broken.

King Farouk I of Egypt abdicated under army pressure in favour of his 7-month-old son who was proclaimed king as Ahmed Fuad II by the Egyptian cabinet.

Eva Perón, wife of Argentine Pres. Juan D. Perón, died in Buenos Aires, reportedly of cancer.

Chilean government accused the Argentine foreign ministry of interfering in Chile's presidential campaign.

27 South Korean government temporarily lifted martial law in the area south of the Han river in preparation for presidential elections.

28 Allied high commission notified west German Chancellor Adenauer that all Allied restrictions on west German steel production and capacity had been lifted.

Maj. Gen. Stephen N. Shoosmith was named British deputy chief of staff to Gen. Mark W. Clark, U.N. commander in Korea.

29 Maj. Gen. Robert W. Grow, former U.S. military attaché in Moscow, was convicted by an army court martial on charges based on the use of secret information in a personal diary stolen by Communist agents.

30 U.S. superforts bombed a large communist aluminum plant near Yangsi, North Korea, on the Yalu estuary, 11 mi. south of Antung, Manchuria.

Egyptian peerage was abolished by the new government which also eased some of the restrictions on foreign investments in Egypt.

Prof. Archibald Cox of Harvard law school was named by President Truman to be chairman of the new Wage Stabilization board created by the Defense Production act amendments of 1952.

Price Stabilization Director Ellis G. Arnall signed an order authorizing an increase of \$5.20 per ton in the ceiling price of basic steel.

West German *bundesrat* completed parliamentary action on a bill giving workers one-third of the membership on the boards of directors of most companies employing over 500 persons.

31 Swedish court sentenced 2 Swedish citizens to life imprisonment and 4 others to prison terms on charges of espionage on behalf of the U.S.S.R.

AUGUST

1 British house of commons voted, 293 to 253, in favour of ratification of the west German peace contract.

King Frederick IX and Queen Ingrid of Denmark concluded a 3-week tour of Greenland with a visit to the U.S. air base at Bluie West.

2 Pres. Harry S. Truman signed the west German peace contract and the protocol providing for inclusion of Germany in the European Defense Community.

3 15th summer Olympic games ended at Helsinki, with the U.S. winning 614 points to 553½ for the U.S.S.R. in the unofficial point standing.

Plenary meeting of the Korean truce delegations adjourned after a brief session at Panmunjom.

4 U.S. 5th air force revealed that it had served notice on 78 North Korean cities to evacuate danger areas marked for destruction by bombing.

Foreign ministers of Australia, New Zealand and the U.S. met at Honolulu, Haw., to promote Pacific defense planning under their Mutual Security pact.

5 14 California Communist party leaders were found guilty by a federal jury of conspiring to teach and advocate the overthrow of the U.S. government by force and violence.

Pres. Syngman Rhee of South Korea won re-election by a large plurality in South Korea's first popular presidential election.

Diplomatic relations were renewed between Japan and the Chinese nationalist government.

Swedish government in a note to the soviet ambassador in Stockholm requested the soviet government to stop its diplomatic personnel in Sweden from spying on Swedish military establishments.

6 John R. Steelman, acting Defense Mobilization director, was reported to have advised President Truman that it might take a year to offset the effects of the 54-day steel strike.

7 Iranian chamber of deputies voted a full pardon to

CALENDAR OF EVENTS • 1952

the assassin of Premier Ali Razmara in March 1951.

Tennessee and Kentucky were designated drought disaster areas by President Truman.

8 An international conference at London reached agreement on terms of funding and repaying Germany's pre-World War II debts.

Defense Secy. Robert Lovett assailed as irresponsible and defeatist European reports that NATO would fall short of rearmament goals set for 1952.

Gov. Adlai E. Stevenson, Democratic presidential nominee, announced the selection of Stephen A. Mitchell of Chicago as chairman of the Democratic national committee.

9 State of emergency was declared in Kuching, Sarawak, and neighbouring areas following attacks by organized Communist terrorist bands.

10 Australian External Affairs Minister Richard G. Casey revealed that the U.S. had been invited to use the huge naval and air base on Manus Island, off northeastern New Guinea.

Maj. Gen. Mohammed Naguib, Egyptian armed forces commander, warned all political parties to reform or face dissolution.

11 Jordani parliament deposed King Talal I as mentally unfit and proclaimed his 17-yr. old son, Hussein, as king.

U.S., British and French governments urged the U.S.S.R. to join in providing an immediate and just treaty establishing Austrian independence.

Iranian senate completed parliamentary action on bill giving Premier Mohammed Mossadegh dictatorial powers for a 6-month period.

Constitution providing for the federation with Ethiopia of the former Italian colony of Eritrea was signed by Emperor Haile Selassie I of Ethiopia.

Korean truce delegations met in a brief session without resolving deadlock over repatriation of prisoners of war.

12 U.S. Atomic Energy commission announced selection of a 6,500 ac. site in Pike county, Ohio, for a \$1,200,000,-

000 plant to produce uranium 235, the fissionable isotope of uranium.

King Feisal II of Iraq arrived in New York for a month's tour of the U.S.

Lt. Gen. Manton S. Eddy was appointed commander of U.S. army forces in Europe.

U.S., British and French governments announced in U.N. Disarmament commission their readiness to hold a 5-power disarmament conference if the U.S.S.R. and Communist China would first agree to limit their respective armed forces to 1,500,000 men.

13 Iranian landlords were ordered to give 20% of their share of harvests to peasants under a decree of Premier Mossadegh.

Canadian Defense Production Minister C. D. Howe announced the decision of the Canadian government to provide the U.K. with about \$150,000,000 in armaments in 1952 as a mutual aid gift.

King Tribhubana of Nepal assumed direct rule of the country following the resignation 3 days before of the cabinet headed by Premier M. P. Koirala.

14 Communist leader Matyas Rakosi was named premier of Hungary in succession to Istvan Dobi, who became president of the presidium of the national assembly.

President Truman rejected the recommendation of the U.S. Tariff commission that the duty be increased on Swiss and other foreign watches and watch movements.

General Eisenhower, Republican presidential nominee, rejected President Truman's invitation to meet with him and his cabinet.

15 U.S. state dept. announced rejection by the U.S.S.R. of U.S.-U.K.-French proposals for an abbreviated peace treaty with Austria.

16 John L. Lewis, president of the United Mine Workers, proclaimed a 10-day memorial stoppage of coal production.

17 Chinese Communist delegation headed by Premier Chou En-lai arrived in Moscow for high-level discussions on economic, political and military relations with the U.S.S.R.

18 Supreme headquarters, Allied powers in Europe, announced that Smyrna, Turkey, would be headquarters of the newly established southeast sector of Southern European command.

19 Iranian army units moved into Tehran to put down Communist-nationalist clashes.

20 Soviet Premier Joseph Stalin, general secy. of the soviet Communist party Central committee, called the first party congress since 1939 to meet on Oct. 5 to consider reorganization of the party and a change in its name and the institution of a new 5-year plan.

21 U.N. planes destroyed a large cement plant at Osu, about 35 mi. north of the 38th parallel in Korea.

Iranian Premier Mossadegh announced drastic measures to collect unpaid back taxes from wealthy taxpayers.

22 U.S. government filed 3 civil suits in New York to recover from 4 large U.S. oil companies and 6 subsidiaries more than \$67,000,000 allegedly overcharged in sales to E.C.A. and the Mutual Security agency.

23 15 prominent Iranian generals were dismissed from active service by the Iranian government.

24 U.S. senate subcommittee made public a long secret report prepared by the Federal Trade commission purporting to show how 7 major companies controlled production and distribution of most of the world's oil outside of the soviet bloc.

25 Chinese nationalist defense ministry announced a successful raid on the mainland port of Kingchen-wei, south of Shanghai.

Indian government was reported to have asked the British and Nepalese governments to close depots in Indian territory for the recruitment of Nepalese Gurkhas into the British army.

26 Soviet Communist party Central committee or-

The pictures on this page are, left to right:

RIDGWAY..... July 8
EISENHOWER..... July 11
NIXON..... July 11
STEVENSON..... July 26
SPARKMAN..... July 26



AUGUST—Continued

dered all party units to initiate a broad discussion of proposed changes in party rules.

27 Soviet Deputy Foreign Minister Valerian A. Zorin was appointed to succeed Jacob A. Malik as chief soviet delegate to the U.N.

President Truman named Rent Stabilization Director Tighe E. Woods to succeed Ellis Arnall as Price Stabilization director.

Newly established South African high court of parliament reversed the invalidation by the regular courts of a law removing coloured voters from common electoral rolls.

28 U.S. senate preparedness subcommittee released a report urging appointment of a full-time production "czar" in the defense dept. with authority to speed up aeroplane output.

29 Venezuela and the U.S. signed an agreement providing for the reduction of U.S. import duties on crude petroleum and fuel oil.

U.N. bombers made a heavy attack on Pyongyang, North Korean capital.

Midnight curfew was imposed upon U.S. forces in Europe because of the increasing number of incidents involving civilians and U.S. personnel, particularly in Germany.

Allied Control council in Vienna announced its unanimous veto of an Austrian law under which nazis who had returned property seized from Jews could sue for its return.

30 U.S. house committee reported widespread graft and irregularities in U.S. veterans' home loan program.

SEPTEMBER

The Netherlands political deadlock was ended by formation of a new 4-party coalition cabinet headed by Labour party leader Willem Drees as premier.

The pictures on this page are, left to right:

NAGUIB.....Aug. 10
MOSSADEGH.....Aug. 11
TAFT.....Sept. 12
EDEN.....Sept. 25
ELIZABETH II.....Sept. 30

2 Buckingham palace revealed that Queen Elizabeth II had named Field Marshal Sir William Slim, retiring chief of the imperial general staff, to be governor general of Australia.

British Trades Union congress overwhelmingly endorsed the western policy of rearming to resist aggression.

U.S. commerce dept. announced a multilateral agreement by the U.S. and 11 other nations to strengthen curbs upon the transshipment of strategic materials.

3 President Truman directed government agencies to begin to put into effect safety recommendations made by his airport study commission.

Petroleum Development (Qatar) Ltd., an Iraq Petroleum Co. affiliate, announced that its concession in the sheikhdom of Qatar had been modified to introduce the principle of equal sharing of profits.

4 India returned to Communist China a famine relief donation conditioned on distribution by a Communist-sponsored committee.

5 Henry H. Fowler was appointed U.S. director of defense mobilization by President Truman.

General Van Fleet, 8th army commander, disclosed that Communist strength in North Korea exceeded 1,000,000 men and was continuing to be built up.

President Truman created a special commission headed by former solicitor general Philip B. Perlman to study U.S. immigration and naturalization problems.

6 U.S. armed forces were ordered by Defense Secy. Lovett to integrate their supply systems so as to end competitive purchasing and eliminate duplication of operations and functions.

U.S. Atty. Gen. James P. McGranery was revealed to have dropped plans for special nationwide grand juries on racketeering and organized crime.

First Canadian television broadcast was made from Montreal by the Canadian Broadcasting Corp.

7 Maj. Gen. Mohammed Naguib, Egyptian armed forces commander, took over di-

rect control of the Egyptian government at the head of a civilian cabinet.

Iranian Premier Mossadegh issued a detailed rejection of the Churchill-Truman offer for settlement of the Iranian oil dispute.

Communist troops launched 7 separate attacks on U.N. positions across Korea.

8 U.N. Security council rejected Soviet proposal for simultaneous admission to the U.N. of 5 Soviet-sponsored and 9 other nations.

U.S. Air Force Secy. Thomas K. Finletter stated that effective U.S. air force strength had increased by at least one-third since the outbreak of fighting in Korea.

9 Egyptian cabinet approved a land reform bill limiting holdings in most cases to 200 ac.

10 Agreements under which western Germany would pay \$822,000,000 to Israel and Jewish organizations for nazi anti-Semitic acts were signed at Luxembourg.

Europe's first sovereign supranational assembly came into existence as an organ of the western European Coal and Steel Community.

11 Emperor Haile Selassie I of Ethiopia signed an act federating the former Italian colony of Eritrea with Ethiopia.

12 U.N. bombers attacked the huge Suiho hydroelectric plant on the Yalu river, 1,000 yd. from the Manchurian border.

Sen. Robert A. Taft (Rep., Ohio) announced after a conference with General Eisenhower that they were in fundamental agreement on campaign issues and that he would work wholeheartedly for Eisenhower's election.

Austrian government denied U.S.S.R. charges that it had failed to democratize Austria.

13 U.S. state dept. issued an estimate showing that western Europe had 2,000,000 men under arms compared with 4,000,000 for the U.S.S.R. plus an unspecified number in satellite armies.

Korean truce delegations took their 7th consecutive week-long recess when they met at Panmunjom.

NATO naval forces in the North and Baltic seas launched Operation "Mainbrace," described as the largest peacetime naval manoeuvres in history.

14 Former British Prime Minister Attlee pledged that the Labour party upon return to power would renationalize all industries returned to private hands by the conservative government.

15 Malayan federal citizenship bill granting citizenship to 72% of Malaya's population became effective.

U.S. federal reserve board and the Housing and Home Finance agency announced suspension of housing credit restrictions, effective Sept. 16.

David L. Cole was appointed director of the Federal Mediation and Conciliation service in succession to Cyrus S. Ching, resigned.

16 Soviet Union in the U.N. Security council vetoed Libya's admission to the U.N.

U.S.S.R. and Communist China announced agreements providing for Soviet withdrawal from the Changchun railroad in Manchuria by the end of 1952 and continuous use of Port Arthur until conclusion by them of a peace treaty with Japan.

17 Delayed dispatch from Korea revealed that the U.S. navy was using guided missiles for the first time in actual warfare.

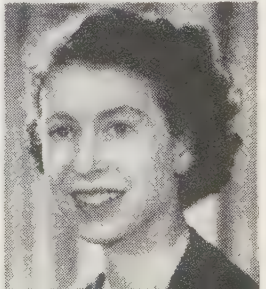
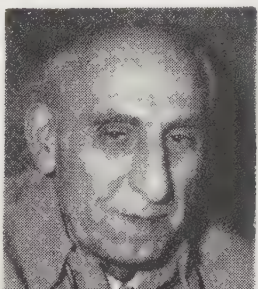
18 Danish and U.S. governments disclosed the construction of a huge strategic air base at Thule, in northwestern Greenland, 930 mi. from the north pole and 2,752 statute miles from Moscow.

U.S.S.R. in the U.N. Security council vetoed the admission of Japan to the U.N.

Pres. Sheik Bishari al-Khuri of the Lebanon resigned in deference to opposition pressure and turned over his duties to Gen. Fuad Shenab, army commander.

Kenya government published 8 bills designed to strengthen authority against crime and subversion.

U.S. state dept. charged that soviet slave labour camps had become a "vast institution" with most of the prisoners political offenders.



SEPTEMBER—Continued

19 Attorney General McGranery disclosed that he had ordered the U.S. immigration and naturalization service to determine whether actor Charles Chaplin should be readmitted to the U.S.

Soviet Union vetoed in the U.N. Security council the applications of Vietnam, Laos and Cambodia for membership in the U.N.

French authorities in Indochina revealed loss of 2 military posts south of Tourane, in central Vietnam.

20 Threatened strike of soft coal miners was averted when northern operators granted a wage increase of \$1.90 a day, subject to Wage Stabilization board approval.

U.N. truce delegations in Korea took their 8th consecutive 7-day recess.

21 Italian Premier Alcide De Gasperi arrived in Bonn, Germany, for a 3-day official visit with west German officials.

22 British and U.S. notes were delivered to the U.S.-S.R. rejecting charges that Trieste was being converted into a permanent NATO base.

23 Camille Shamun was elected president of the Lebanon with socialist support.

U.S., British and French governments rejected a Soviet proposal for a conference on a German peace treaty and insisted that the first conference on Germany must be limited to question of free elections.

French government confirmed rejection by the bey of Tunis of the French reform program.

American Federation of Labor voted to endorse Democratic presidential candidate Adlai E. Stevenson.

Rocky Marciano knocked out Jersey Joe Walcott at Philadelphia to win the world's heavyweight championship.

24 General Eisenhower announced that Sen. Richard M. Nixon had been completely vindicated of charges in connection with a privately raised expense fund and that the Republican national committee had voted unanimously to retain him as vice-presidential nominee.

British War Secy. Anthony Head stated that a military base in Egypt was a vital strategic necessity to the western powers.

25 Anzus Pacific Security pact council announced formation of a military liaison group after a 3-day conference at Honolulu, Haw.

2 British warships engaged in a brief duel with a Chinese Communist shore battery after the Communists had removed 2 Chinese from a ship of British registry.

Burmese government announced declaration of a state of emergency in the Shan states to cope with a peasant rebellion being fomented by Communist rebels.

British Foreign Secy. Eden stated in Vienna that he had assured the Austrian government that British and allied forces would remain until the promise of freedom made in 1943 had been carried out.

26 "Pravda," soviet Communist party newspaper, accused U.S. Ambassador Kennan of malicious hostility to the U.S.S.R. and of breaking diplomatic obligations.

30-day state of siege was declared in El Salvador as a result of an alleged Communist plot to overthrow the government.

27 U.N. forces repelled a 7-hr. Communist attack on the western front in Korea.

Harold Shantz was appointed U.S. minister to Rumania to fill a post vacant for 18 months.

General Clark, U.N. commander in Korea, announced creation of a sea defense zone around the Korean peninsula.

28 Korean truce delegations recessed for 10 days after 3 alternative proposals were received from the U.N. delegation for repatriation of prisoners.

29 Gen. Walter B. Smith, director of the U.S. Central Intelligence agency, stated that he was morally certain that Communists had infiltrated almost every U.S. security organization, including his own agency.

30 British foreign office confirmed officially the presence of soviet technical troops in Korea.

Warrant of Queen Elizabeth II was published directing that her husband, the duke of Edinburgh, should have precedence next to her on all occasions not governed by act of parliament.

OCTOBER

U.S. Navy Secy. Dan A. Kimball estimated that the Soviet Union had 300 submarines, 4 times as many as Nazi Germany in 1939.

52 Chinese Communist prisoners of war were reported killed and 113 wounded by U.S. troops quelling a riot on Cheju Island off the south coast of Korea.

Albert W. Gatov was named to succeed Vice Adm. Edward L. Cochrane as chairman of the Federal Maritime board.

U.S. federal rent controls expired except in critical defense areas and in communities which had requested extension of controls.

2 U.N. Korean Reconstruction agency announced plans to begin at once large-scale relief and reconstruction operations in South Korea.

Soviet Premier Stalin in a statement published in a soviet political magazine said he believed that war between the capitalist countries continued to be inevitable.

U.S. and British governments announced the return to German ownership of 53 former German merchant ships originally scheduled for allocation among the Allied powers.

Iranian Premier Mossadegh threatened in a communiqué to break off relations with Great Britain and the U.S. if Iranian counterproposals on the oil dispute were not accepted.

3 Britain's first atomic weapon was successfully exploded in the Monte Bello Islands about 50 mi. northwest of Australia.

British foreign office announced the appointment of Sir Roger Makins to succeed Sir Oliver Franks as ambassador to the U.S.

Soviet government demanded the recall as *persona non grata* of George F. Kennan, U.S. ambassador to the U.S.S.R.

Greek parliament approved a bill to replace proportional representation with the majority electoral system in parliamentary elections.

4 Mongolian and Chinese Communist governments signed a 10-year economic and cultural agreement at Peking.

5 19th All-Union Communist party congress, the first since 1939, opened in Moscow with a keynote address by Georgi M. Malenkov.

7 Chinese Communist forces launched heavy attacks along two-thirds of the Korean front.

New York Yankees baseball team won their 4th successive world series, defeating the Brooklyn Dodgers in the 7th game, 4 to 2.

Bolivian government seized control of Bolivia's 3 largest tin mines.

8 U.S. government rejected as invalid a demand by the

Soviet government for the recall of Ambassador Kennan.

U.N. truce delegations agreed to an indefinite recess after rejection by the Communist delegation of 3 alternative proposals on voluntary repatriation of prisoners.

2 Soviet jet fighters harassed a U.S. ambulance plane while en route to west Berlin.

9 Premier Fuad Shenab was voted dictatorial powers for 6 months by the Lebanese parliament.

Indian Prime Minister Nehru declared that India would no longer accept plebiscites as a means of deciding the political future of the remaining French settlements in India.

10 All-Union Communist party congress unanimously adopted a new 5-year plan for the U.S.S.R. covering the period 1951-56.

12 Soviet government charged in a note that a U.S. B-29 bomber reported missing off Japan had violated Soviet territory and then disappeared seaward when fired upon by Soviet fighters.

13 Iranian government announced that it had broken up an allegedly foreign-aided plot against Premier Mossadegh's regime.

U.S., British and French governments revealed their decision to continue economic aid to Yugoslavia for another year.

All-Union Communist party congress adopted new statutes providing for reorganization of the party and replacement of the Politburo and Orgburo by the praesidium of the new Central committee.

14 Canadian External Affairs Secy. Lester B. Pearson was elected president of the U.N. general assembly at its opening session at New York, N.Y.

Queen Elizabeth II of the United Kingdom announced that she and the duke of Edinburgh would visit Australia, New Zealand and Ceylon in 1954.

15 U.N. forces recaptured the summit of Triangle hill in central Korea.

All wage rates of less than \$1 an hour were exempted from wage controls by Economic Stabilizer Roger L. Putnam.

U.S. amphibious forces staged a mock invasion of northeastern Korea below Wonsan which drew large numbers of Communist troops into the area.

16 Communist high command proposed resumption

OCTOBER—Continued

of truce negotiations in Korea but barred any compromise on the issue of prisoner of war repatriation.

New Central committee of the All-Union Communist party elected a 25-member praesidium headed by Premier Stalin as the party's governing group.

Communist-led Viet-Minh forces launched a large scale offensive in northwestern Indochina.

17 U.S. state dept. demanded monetary compensation for a B-29 bomber shot down off Japan as well as repatriation of any crew members in soviet hands.

18 Wage Stabilization board cut to \$1.50 the \$1.90 per day wage increase agreed to by the United Mine Workers and the soft coal operators.

19 Spanish Chief of State Francisco Franco declared in an address that if necessary Spain would join a common defensive front against communism despite alleged injustices toward it.

20 Almost all U.S. soft coal mines were shut down by a strike protesting against Wage Stabilization board action concerning a negotiated wage increase.

British authorities announced the dispatch of a battalion of troops and a cruiser to Kenya and declared a state of emergency in an effort to control the anti-white Mau Mau society.

French union forces were revealed to have been ordered to withdraw from the Nghia-Lo and Vanyen sectors of Tongking in Indochina.

Gen. Clark, U.N. commander in Korea, barred resumption of truce negotiations without a Communist concession on the issue of prisoner repatriation.

21 U.N. general assembly voted 53 to 5 to appoint an international commission to investigate Communist germ warfare charges in Korea.

U.S. High Commissioner Walter J. Donnelly confirmed reports that a secret west German resistance group had been set up in 1950 with U.S. support to operate against the U.S.S.R. in case of war.

22 Iran formally broke off diplomatic relations with the United Kingdom.

British government announced approval of a new constitution for the Anglo-Egyptian Sudan providing for self-government in internal affairs.

23 Selman A. Waksman of Rutgers university was awarded the Nobel prize for medicine and physiology for his work as co-discoverer of streptomycin.

Lower house (majlis) of the Iranian parliament voted the upper house (senate) out of existence.

West German constitutional court banned the neo-nazi Socialist Reich party on the ground that its principles were essentially identical with those of the former nazi party.

U.N. Secy.-Gen. Lie was revealed to have dismissed one member of his staff, suspended another and placed 10 others on compulsory leave for refusal to answer questions concerning matters outside their official U.N. duties.

24 Liberal Shigeru Yoshida was named by Japan's newly elected diet to succeed himself as premier.

General Eisenhower pledged in a campaign speech to go to Korea to seek an early end of the Korean war if elected president.

25 Colombia, Denmark and Lebanon were elected to the U.N. Security council by the U.N. general assembly to replace Brazil, the Netherlands and Turkey.

U.N. general assembly voted 35 to 5 to recognize the credentials of the Chinese nationalist delegation.

French and west German governments announced in a communiqué that they had failed to agree on postponement of elections in the Saar scheduled for Nov. 30.

26 Polish voters elected the first parliament under the new soviet-type constitution in an election in which the only candidates were those of the Communist national front.

27 Soft coal miners returned to work following conference the day before at the White House between President Truman, John L. Lewis and Harry M. Moses, president of the Soft Coal Operators association.

Yugoslavia defeated Czechoslovakia 40 to 18 on the 13th ballot for the seat on the U.N. economic and social council held by Czechoslovakia.

28 Price Stabilizer Tighe E. Woods announced plans to set up local Price Stabilization boards in 85 cities in order to decentralize price control.

U.S. import restrictions on dairy products were criticized at U.N. trade conference at Geneva by 12 nations who charged the U.S. with violation of the General

Agreement on Tariffs and Trade.

29 Train carrying 8 U.S. tanks to west Berlin was stopped at the border of the Soviet zone by Soviet authorities.

30 More than 500 persons were reported arrested in Kenya as British authorities continued their efforts to curb Mau Mau terrorism.

The Netherlands government stated in a memorandum to the second chamber of the parliament that they saw no purpose in renewing discussions with Indonesia on western New Guinea.

31 Pres. Victor Paz Estenssoro of Bolivia signed a decree formally nationalizing Bolivia's 3 major tin-producing companies.

NOVEMBER

1 Lt. Gen. Chung Il Kwon, commander of the Korean 2nd division, was named a deputy commander of the U.S. 9th corps.

U.N. secretariat announced the dismissal by the U.N. of 3 U.S. citizens who had refused to testify before a U.S. senate security subcommittee.

2 President Truman declassified and made public a top secret document in which the U.S. joint chiefs of staff in 1947 recommended the withdrawal of U.S. occupation troops from Korea.

Iranian government published a message from Premier Mossadegh to the British people stating that friendly relations would be continued but accusing the British government of openly supporting allegedly illegal activities of the Anglo-Iranian Oil company.

3 Allied authorities in Germany rejected Soviet demands that anti-Soviet groups in west Berlin be disbanded.

Gen. James A. Van Fleet, 8th army commander, stated that U.N. forces remained in complete control of the central front in Korea.

University of Kentucky cancelled its 1952-53 basketball schedule as the result of N.C.A.A. recommendations that it be placed on probation for violating N.C.A.A. rules in 1947-50.

4 Gen. Dwight D. Eisenhower and Sen. Richard M. Nixon won 39 states and 442 electoral votes to win U.S. presidential election; Republicans also won control of both houses of congress by a narrow margin.

Fighter plane with Soviet markings was intercepted over Hok-

kaido Island, Japan, by two U.S. planes and escorted back to Soviet territory.

New session of British parliament was opened by Queen Elizabeth II who in outlining the program of the conservative government promised quick action on denationalization bills.

France notified NATO that it would achieve its goal of 12 equipped divisions in 1952 but could not accelerate rearmament in 1953.

5 President Truman invited General Eisenhower to the White House to review transition problems.

Soviet government denounced as illegal the U.S. naval defensive zone around the Korean peninsula.

U.S. government again requested the return of 186 lend-lease naval vessels by the U.S.-S.R. as a condition to further lend-lease settlement negotiations.

6 Nobel prizes were awarded to François Mauriac of France, literature; Edward M. Purcell and Felix Bloch of the U.S., physics; and Archer J. P. Martin and Richard L. M. Synge of the U.K., chemistry.

7 1952-53 edition of "Jane's Fighting Ships" published in London revealed that the U.S. navy was as large as all the other navies of the world put together.

French union forces in Indochina cut off one of the main Viet-Minh supply lines to China.

British Colonial Secy. Oliver Lyttleton reported to the house of commons that Mau Mau activities in Kenya were based on perverted nationalism and a sort of nostalgia for barbarism.

Yugoslav Communist party congress elected a new 109-member Central committee which chose a 13-member executive committee to replace the Politburo; both were headed by Marshal Tito.

8 14 Negroes were reported killed and 39 wounded by police quelling a riot in Kimberley, S. Af.

President Truman acknowledged Gov. Adlai E. Stevenson as the titular head of the Democratic party.

9 General Eisenhower named Sen. Henry C. Lodge, Jr., as his primary liaison agent with the outgoing administration on all except budgetary matters, in respect of which he named Joseph M. Dodge.

British war office announced plans for withdrawal of the British garrison from the island of Bermuda.

NOVEMBER—Continued

Philip Murray, president of the C.I.O., died suddenly of a heart attack in San Francisco.

Large numbers of French parachute troops were dropped at Phuduan in Viet-Minh territory, 75 mi. northwest of Hanoi.

Arab league issued the text of a note to western Germany protesting the German-Israeli reparations agreement.

10 U.N. Secy.-Gen. Trygve Lie announced his resignation to the U.N. general assembly in the interest of great-power agreement.

Soviet Foreign Minister Vishinsky advised the political and security committee of the U.N. general assembly that the U.S.S.R. would never drop its opposition to voluntary repatriation of Korean prisoners of war.

U.N. general assembly was informed by French Foreign Minister Robert Schuman that France would not admit any discussion concerning the issues of Tunisia and Morocco.

11 U.S. Supreme Court Justice Robert H. Jackson denied before a congressional investigating committee that the U.S. government had tried to influence the international military tribunal which tried the nazi leaders in 1945-46 to the advantage of the U.S.S.R.

General Van Fleet, 8th army commander, announced that 2 new South Korean divisions had been activated and would soon be ready for combat.

12 U.S. government agreed to lend to Japan a fleet of 18 frigates and 50 landing craft.

Kashmir constituent assembly voted to replace the hereditary monarchy with an elected head of state.

Indian Vice-Pres. Sarvapalli Radhakrishnan was elected president of the 7th conference of U.N.E.S.C.O. at its opening session in Paris.

13 Appellate division of the South African supreme court held invalid the act creating the high court of parliament as South Africa's highest tribunal.

Bobby Shantz, pitcher for the Philadelphia Athletics, was

named the most valuable player of the American league in 1952 by the Baseball Writers Assn. of America.

Ceylon announced an agreement to increase shipments of rubber and other commodities to Communist China.

14 Prime Minister Daniel F. Malan of South Africa stated that his government would accept the appellate court decision invalidating the high court of parliament act but would appeal the decision to the electorate.

U.S. government rejected a Pakistani suggestion for an immediate cease fire in Korea before any decision on the prisoner of war issue.

Texas and Tennessee football teams were named to play in the Cotton Bowl at Dallas, Tex., on Jan. 1, 1953.

15 British colonial office announced that the colonies of Jamaica, Trinidad, the Leeward Islands and the Windward Islands had agreed to form a federation.

Princeton won its 6th consecutive Big Three football championship, defeating Yale, 27 to 21.

16 U.S. Atomic Energy commission's announcement that experiments contributing to thermonuclear weapons research had been completed at Eniwetok proving grounds in the Pacific was believed to refer to a hydrogen bomb.

Field Marshal Alexander Papagos' Greek rally party won a sweeping victory in Greek parliamentary elections.

U.S. marine force planes destroyed a North Korean hydroelectric plant southwest of Tongchon on the Sea of Japan.

17 India presented a compromise plan for a truce in Korea to the political and security committee of the U.N. general assembly.

Peking radio announced the reorganization of the Chinese Communist administrative system in preparation for the introduction of a 5-year plan in 1953.

U.S. supreme court refused to review the convictions of Julius and Ethel Rosenberg, sentenced to death for betraying U.S. atomic secrets to the U.S.S.R.

18 President Truman and General Eisenhower conferred at the White House on international affairs and arrangements for changeover from the outgoing to the incoming administration.

West German bundestag adopted a resolution denouncing as illegal parliamentary elections scheduled for Nov. 30 in the Saar.

President Truman reported to congress that U.S. arms shipments to western Europe fell considerably behind schedule in the first 6 months of 1952.

Georgia Tech and Mississippi football teams were named to play in the Sugar Bowl at New Orleans, La., on Jan. 1, 1953.

19 Communist forces launched heavy attacks on the Korean western front but failed to penetrate U.N. lines.

Spain was admitted to membership in U.N.E.S.C.O. by a vote of 44 to 4.

General Eisenhower stated that he agreed with the principle of no forcible repatriation of Communist prisoners in Korea.

Price Stabilizer Tighe E. Woods announced plans for the immediate suspension of price control on clothing.

20 Boleslaw Bierut became first premier of Poland under the new soviet-type constitution.

General Eisenhower announced the appointment of John Foster Dulles as secy. of state, Charles Erwin Wilson as secy. of defense and Douglas McKay as secy. of the interior in his cabinet.

Outfielder Hank Sauer of the Chicago Cubs was named the most valuable player in the National league in 1952 by the Baseball Writers Assn. of America.

South Korean national assembly rejected President Rhee's nomination of Lee Kap Sung as premier.

21 General Eisenhower announced that George M. Humphrey would be his secy. of the treasury, Herbert Brownell, Jr., his attorney general and Harold E. Stassen his director of mutual security.

William Green, president of

the A.F. of L. since 1924, died in Coshocton, Ohio.

French forces announced a progressive evacuation of outpost defenses along the right flank of their front in the Black river area in Indochina.

22 Jaime Torres Bodet of Mexico, director general of U.N.E.S.C.O., resigned in protest against a projected budget cut.

Southern California defeated U.C.L.A., 14 to 12, winning the Pacific Coast football conference championship; Wisconsin tied Minnesota, 21 to 21, tying Purdue for the Big Ten championship; Duke defeated North Carolina, 34 to 0, winning the Southern conference championship.

23 Gen. Nur Aldin Mahmud, army chief of staff, took over the premiership of Iraq under martial law after rioting mobs set fire to a U.S. information service building.

24 Price Stabilizer Woods submitted his resignation in protest against what he called a weak controls law.

General Eisenhower announced his intention to appoint Gov. Sherman Adams of New Hampshire as assistant to the president and Ezra Taft Benson of Utah as secy. of agriculture.

U.S. dept. of justice parole board rejected the application of Alger Hiss for parole after completing one-third of his sentence for perjury.

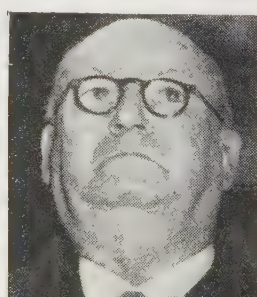
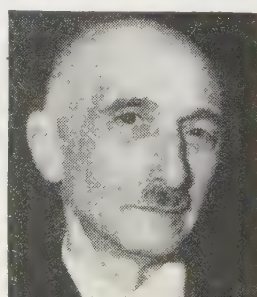
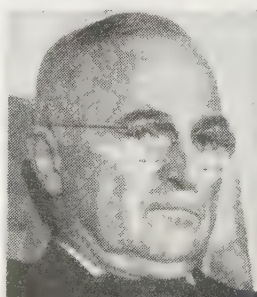
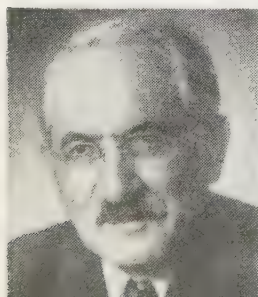
Viscount Swinton was named commonwealth relations secy. in the British cabinet in succession to the marquess of Salisbury, who was named lord president of the council, succeeding Lord Woolton, who was named chancellor of the duchy of Lancaster.

Southern California and Wisconsin were named to play in the Rose Bowl and Alabama and Syracuse in the Orange Bowl on Jan. 1, 1953.

25 George Meany of New York was unanimously chosen president of the A.F. of L. by its executive council.

The pictures on this page are, left to right:

WAKSMAN Oct. 23
TRUMAN Nov. 5
MAURIAC Nov. 6
MALAN Nov. 14
LODGE Nov. 29



NOVEMBER—Continued

New key appointments announced by General Eisenhower included Arthur E. Summerfield of Michigan as postmaster general, Oveta Culp Hobby of Texas as federal security administrator, and Ivy Baker Priest of Utah as treasurer of the U.S.

British government revealed plans for a huge hydroelectric and aluminum project to exploit bauxite deposits in the Gold Coast colony in British West Africa, contemplating a total investment of £144,000,000.

Halfback Billy Vessels of Oklahoma was awarded the Heisman trophy as 1952's outstanding college football player.

26 General Eisenhower named Arthur H. Vandenberg, Jr., of Michigan to be his secretary and William P. Rogers to be deputy attorney general.

Resignation was made public of William O'Dwyer as U.S. ambassador to Mexico.

27 11 prominent Czech Communists, including Rudolf Slansky, former secretary-general of the Czech Communist party, and Vladimir Clementis, former foreign minister, were sentenced to death on charges of treason.

U.S. government announced its support of the Indian compromise plan on disposition of Korean prisoners of war.

Pennsylvania defeated Cornell, 14 to 7, to win the Eastern (Ivy) league championship; Texas defeated Texas A. & M., 32 to 12, winning the Southwest conference championship.

28 Communist airfields and communications installations near the Yalu river in northwest Korea were bombed by U.S. planes.

Walter J. Cummings, Jr., of Chicago was appointed U.S. solicitor general by President Truman.

29 General Eisenhower named Sen. Henry C. Lodge,

Jr., to head the U.S. mission to the U.N.

Pope Pius XII designated 24 new cardinals, including Archbishops James F. McIntyre of Los Angeles, Paul-Emile Leger of Montreal and Aloysius Stepinac of Yugoslavia.

Georgia Tech defeated Georgia 23 to 9, winning the Southeast conference football championship; Oklahoma defeated Oklahoma A. & M., 54 to 7, winning the Big Seven conference championship.

30 Appointment of Winthrop W. Aldrich to be U.S. ambassador to Great Britain was announced by General Eisenhower's headquarters.

French-supported autonomous government of the Saar won a substantial victory in elections for a new parliament.

DECEMBER

General Eisenhower's headquarters announced the designation of Martin P. Durkin, a Democratic union leader, as secy. of labour, Sinclair Weeks of Massachusetts as secy. of commerce and W. Walter Williams of Washington as under secy. of commerce.

Adolfo Ruiz Cortines was inaugurated as president of Mexico in ceremonies at Mexico City.

Frank Coe, secy. of the International Monetary fund, refused to tell a senate security subcommittee whether he ever had been or was engaged in espionage against the U.S.

Special U.S. house committee opened hearings on election campaign financing.

2 Federal grand jury in New York returned a presentment castigating the U.S. state dept. for clearing disloyal U.S. citizens for key jobs at the U.N.

Col. Marcos Pérez Jiménez, a member of the Venezuelan ruling junta, seized control of the country following early election returns showing the leftist opposition ahead in constituent assembly elections.

French forces in Indochina claimed the most important victory of the war after repulsing an assault by Viet-Minh troops on the fortress of Nasan, about 100 mi. west of Hanoi.

3 President Truman overrode the Wage Stabilization board and approved a full \$1.90 a day wage increase for soft coal miners.

U.N. general assembly approved, 54 to 5, the Indian compromise solution for a truce in Korea.

President Truman invoked the national emergency provisions of the Taft-Hartley act in a strike by the United Steelworkers at an American Locomotive Co. plant at Dunkirk, N.Y.

4 Wage Stabilization Board Chairman Archibald Cox resigned in protest against President Truman's action in the soft coal case.

Walter P. Reuther, president of the United Automobile Workers, defeated Allen S. Haywood in the voting for presidency of the C.I.O.

5 General Eisenhower was revealed to have departed by air from Seoul en route to Guam after a 3-day visit to the Korean front.

President Truman accepted the resignation of Walter J. Donnelly as U.S. high commissioner in Germany.

6 Industry members of the Wage Stabilization board resigned in protest against President Truman's action in overriding board's decision in the soft coal case.

Group of Swiss mountain climbers was reported to have come within 150 ft. of reaching the summit of Mt. Everest, Nepal, the highest mountain in the world.

7 Severe anti-French riots broke out in the French zone of Morocco.

8 Isaac Ben-Zvi was chosen president of Israel by the Knesset (parliament) in succession to Chaim Weizmann, deceased.

General Eisenhower arrived off Wake Island on the U.S.S. "Helena" where he was joined by John Foster Dulles and other cabinet designates for a series of high-level conferences.

9 U.N. fighter-bombers wrecked 4 Communist rail terminals near the Manchurian border in what was described as the largest carrier raid of the Korean war.

Chinese nationalist government announced a 4-year economic development program designed to make Formosa self-supporting.

10 Premier Naguib of Egypt announced cancellation of the Egyptian constitution and the passing of authority to a transitional government.

National Production authority eased curbs, effective Jan. 1, 1953, on apartment house and other types of construction.

Clarence Munn of Michigan State college was named coach of the year by the American Football Coaches Assn.

U.S. government demanded in notes to the U.S.S.R. and Hungary that a U.S. plane shot down by soviet fighters in Hungary in 1951 be returned or damages paid.

11 President Truman characterized General Eisenhower's trip to Korea as a piece of demagoguery.

British Foreign Secy. Eden in a note to the U.S. state dept. stated that his government could not concede the right of the U.S. to subpoena documents from the Anglo-Iranian Oil Co. for a grand jury oil cartel investigation.

12 167 Arabs were sentenced to prison by a Moroccan court in Casablanca for demonstrating against the French government.

13 South Korean troops recaptured Little Nori hill on the western front in Korea.

Japanese Premier Shigeru Yoshida told the diet that the U.S. was bound to defend Japan in case of attack.

14 General Eisenhower, upon his return to New York from his trip to Korea, voiced confidence that a satisfactory solution of the Korean war could be speeded.

Cleveland Browns were defeated, 37 to 34, by the New York Giants but won the American conference football championship.

15 Peking radio announced formal rejection by Communist China of the Indian compromise plan adopted by the U.N. for truce in Korea.

U.S. state dept. announced the

The pictures on this page are, left to right:

McINTYRE	Nov. 29
REUTHER	Dec. 4
BEN-ZVI	Dec. 8
LATTIMORE	Dec. 16
MEANY	Dec. 21



DECEMBER—Continued

suspension of John Carter Vincent, U.S. minister at Tangier, after a loyalty review board reported that there was reasonable doubt as to his loyalty.

U.N. prisoner of war command reported that 84 Communist prisoners had been killed and 118 injured in a new outbreak of rioting at camp on Pongam Island off South Korean coast.

U.S. supreme court held unconstitutional an Oklahoma law requiring state employees to take a loyalty oath.

Wage control was placed under a special wage stabilization committee consisting of the 4 public members of the Wage Stabilization board headed by Chairman Charles C. Killingsworth.

16 Prof. Owen Lattimore of Johns Hopkins university was indicted by a federal grand jury in Washington, D.C., on 7 counts of perjury.

NATO council approved the designation of British Vice Adm. Earl Mountbatten as commander in chief of all Allied naval forces in the Mediterranean except the U.S. 6th fleet.

Michael DiSalle of Ohio was appointed economic stabilizer by President Truman in succession to Roger L. Putnam.

17 Gen. Dwight Eisenhower and Gen. Douglas MacArthur conferred on possible plans for ending the Korean war.

NATO council ruled that the war in Indochina was a common security interest of NATO.

Yugoslavia broke diplomatic relations with the Vatican because it had refused to settle the state-church conflict in Yugoslavia.

U.N. general assembly adopted a compromise resolution ex-

pressing the hope that France and Tunisia would expedite talks on the issue of Tunisian self-government.

18 Proposal for direct Arab-Israeli negotiations on the Palestine issue failed to secure the necessary two-thirds majority in the U.N. general assembly.

NATO council adjourned in Paris after reducing to \$229,600,000 a \$473,000,000 military request for work on bases and communications in 1953.

19 World bank announced a loan of \$31,500,000 to India for expansion of iron and steel production.

General Eisenhower designated Roger M. Kyes of Michigan as deputy secy. of defense, Robert T. Stevens of New Jersey as army secy., Robert B. Anderson of Texas as navy secy. and Harold E. Talbott of New York as air force secy.

U.N. general assembly approved a compromise resolution expressing the hope that France and Morocco would expedite talks looking toward developing free political institutions for French Morocco.

20 86 persons were killed when a U.S. air force C-124 plane crashed shortly after take-off at Moses Lake, Wash.

Bey of Tunis yielded to a French ultimatum and approved 2 decrees on administrative reforms.

21 Egyptian government decreed that persons convicted of corruption would be barred from political activity and public office.

U.S. house subcommittee charged that the U.S. armed services were wasting large amounts of money in their giant building program.

George Meany, president of the A.F. of L., stated that his

organization was willing to settle for less than outright repeal of the Taft-Hartley act.

U.N. general assembly approved a budget of \$48,327,700 for 1953.

Detroit Lions defeated the Los Angeles Rams, 31 to 21, to win the National conference professional football championship.

22 Premier Pinay of France resigned in the face of impending defeat on 3 votes of confidence.

U.N. general assembly recessed after rejecting a soviet resolution that would have condemned the U.S. for murder of Communist prisoners of war on Pongam Island, Korea.

23 Seizure was reported of 26 Italian fishing boats in the Adriatic sea by the Yugoslav coast guard.

U.S. government released 500,000,000 S (\$19,230,000) in Marshall plan counterpart funds to Austria to finance measures for checking unemployment.

24 U.S. justice dept. revealed that 271 members of the crew of the French liner "Liberté" had been barred from the U.S. under the provision of the McCarran-Walter act which became effective at midnight.

Soviet Premier Stalin stated in a letter received by a news correspondent that he was willing to start negotiations with the incoming U.S. administration with the objective of holding a meeting with General Eisenhower.

25 Civil Aeronautics board announced that scheduled air lines operated within the U.S. during 1952 with a passenger fatality rate of .38 per 100,000,000 passenger miles, the lowest on record.

26 U.N. forces turned back four Communist probing attacks along the Korean front.

27 U.S. army dept. requested the selective service system to induct 53,000 men in Feb. 1953, the highest number since early in the Korean war.

In annual Shrine football game at San Francisco, east defeated the west, 21 to 20.

28 General Eisenhower named an advisory committee headed by Dean William I. Myers of Cornell university to aid in shaping national farm policies.

200 U.N. planes attacked a Communist supply and barracks area near the North Korean capital of Pyongyang.

Detroit Lions defeated the Cleveland Browns, 17 to 7, to win the National (Professional) Football league championship.

29 East German government announced the dissolution of its propaganda office which was headed by Gerhart Eisler, Communist leader who escaped from the U.S.

Gen. Hoyt S. Vandenberg, U.S. air force chief of staff, reported that the U.S.S.R. had produced 5 times as many planes as the U.S. during the past 5 years.

National emergency injunction provisions of the Taft-Hartley act were held constitutional by a U.S. district court at Buffalo, N.Y.

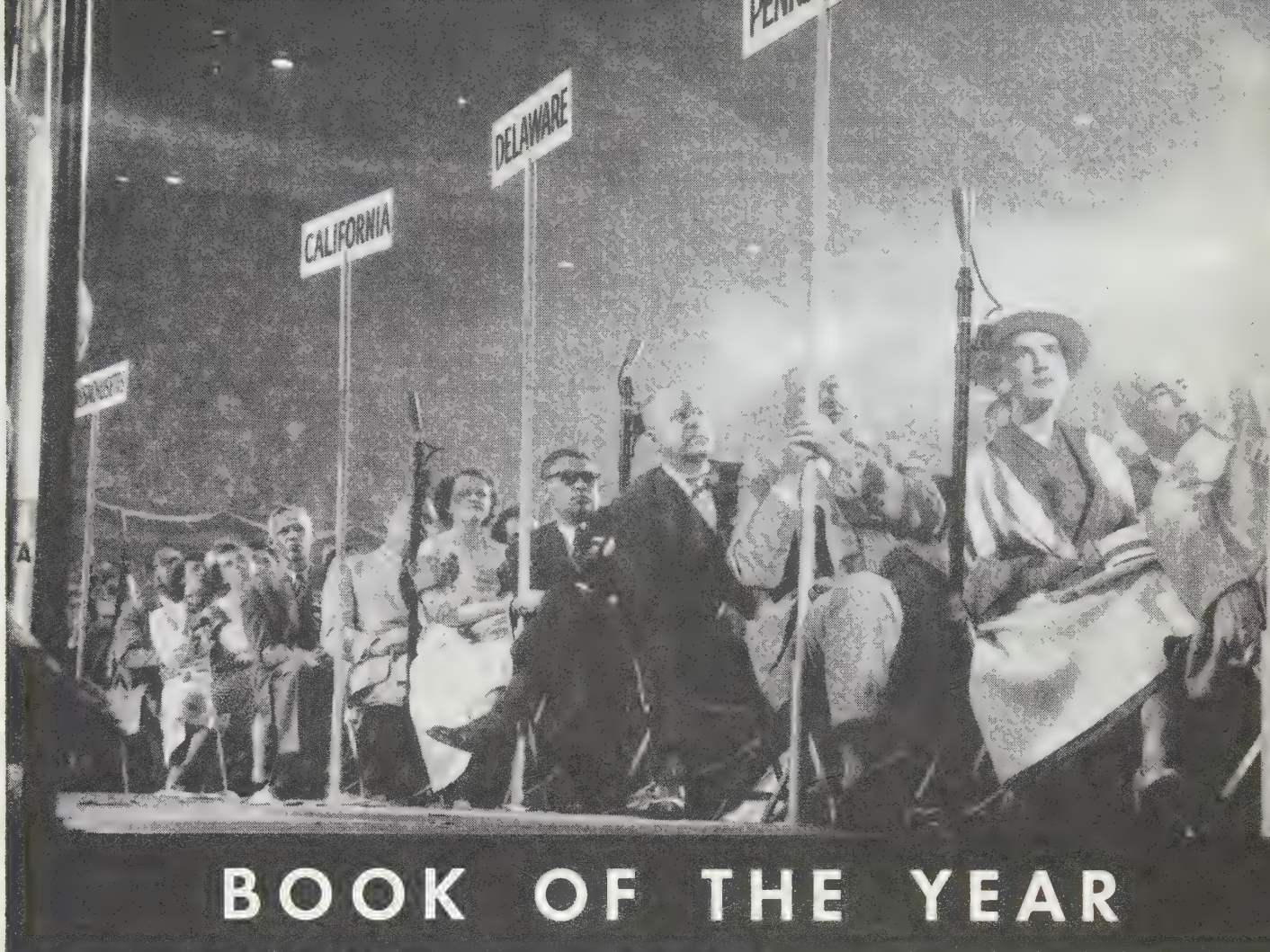
30 Jockey Tony DeSpirito rode 4 winners at Tropical park, Fla., to break the world riding record with 389 winners in 1952.

Tuskegee institute reported that 1952 was the first year without a lynching since the year 1882, when records were first kept.

31 Soviet Union relinquished its rights in the administration of the Chinese Changchun railway in Manchuria.

Football Bowl Games, Jan. 1, 1953

- Rose Bowl** (Pasadena, Calif.)—Southern California, 7; Wisconsin, 0
- Sun Bowl** (El Paso, Tex.)—College of the Pacific, 26; Mississippi Southern, 7
- Tangerine Bowl** (Orlando, Fla.)—East Texas State, 33; Tennessee Tech, 0
- Prairie View Bowl** (Houston, Tex.)—Texas Southern, 13; Prairie View A. & M., 12
- Salad Bowl** (Phoenix, Ariz.)—San Diego Naval Training Center, 81; 101st Airborne Division (Camp Breckinridge, Ky.), 20
- Cotton Bowl** (Dallas, Tex.)—Texas, 16; Tennessee, 0
- Sugar Bowl** (New Orleans, La.)—Georgia Tech, 24; Mississippi, 7
- Orange Bowl** (Miami, Fla.)—Alabama, 61; Syracuse, 6
- Gator Bowl** (Jacksonville, Fla.)—Florida, 14; Tulsa, 13



Abyssinia: *see* ETHIOPIA.

Academy of Arts and Letters, American: *see* SOCIETIES AND ASSOCIATIONS, U.S.

Academy of Political and Social Science, American: *see* SOCIETIES AND ASSOCIATIONS, U.S.

Accident Insurance: *see* INSURANCE.

Accident Prevention. Accidents caused 94,000 deaths in the United States in 1951. This total was exceeded only by deaths from heart disease, cancer and cerebral haemorrhage. Information available through July 1952 indicated that the 1952 accidental death total for the year would be slightly higher than in 1951. There were 9,400,000 injuries in 1951.

The 40th National Safety congress held in Chicago, Ill., in Oct. 1952 marked 40 years of organized effort, spearheaded by the National Safety council and affiliated local safety councils throughout the nation, to reduce accidents.

Based on the rate of deaths per 100,000 population from 1900 to 1912, it was estimated that the organized attack on this social problem had resulted in saving 500,000 people from accidental death from 1913 to 1951.

Safety work was constantly carried on by industries and by a large number of organizations, both governmental and private, operating in various spheres of activity, such as industry, traffic, the school, the home, the farm, etc.

Serving as a place for group planning and education by all who take part in the safety movement, the National Safety council attempts to discover the facts of accident occurrence; devises or helps to devise engineering, educational and enforce-

ment measures for prevention; assists in determining engineering requirements for the safe design, construction and use of machines and equipment; helps formulate model safety legislation; participates in planning and executing training and educational programs; disseminates this information widely to interested groups and to the general public; and encourages and assists the establishment and functioning of community and state safety organizations.

Industrial Safety.—Building on forty years of experience in preventing work accidents, the country's progressive industries continued to pursue thoroughgoing safety measures in 1952, recognizing accident prevention as an important element in efficient operation.

Trade associations and other employer groups emphasized accident prevention programs in their meetings and publications. Labour organizations recognized accident-prevention efforts as an important element in serving their members. Government agencies, such as state and national labour departments, also carried on safety programs as important parts of their operations.

In June, Pres. Harry S. Truman called a Conference on Industrial Safety, which was held in Washington, D.C. At this conference, the president offered an eight-point program to the 1,250 delegates from 43 states and from all the territories. The focal point of the two and one-half days of deliberation and discussion was safety of the employee in the small plant.

During 1952 several teams of European and South American industrialists visited the United States to study industrial safety methods and progress. A number of specialists in various fields of safety in the United States were sent to several foreign

countries to assist those countries in setting up and establishing safety programs.

It appeared late in 1952 that the year's toll of occupational accident fatalities probably would be a little more than the 1951 toll of 16,000.

Traffic Safety.—During the first eight months of 1952, there were 23,770 motor-vehicle deaths, an increase of 3% over 1951.

Various professional, industrial, insurance and other groups continued in 1952 their programs of education, enforcement and engineering in the traffic safety field.

The first teen-age traffic conference ever held in the U.S. was held in Golden, Colo., in August. More than 1,200 delegates were present for the precedent-setting occasion, including parents, educators and public safety officials, with the young people accounting for 900 of the total number attending.

A meeting of the President's Highway Safety conference was held in Chicago, Ill., in October. This was a conference of committee reports rather than a full-scale session.

In the 1951 National Traffic Safety contest, which takes account of good safety records as well as sound programs in all phases of traffic safety, Colorado received the grand award among states and Shaker Heights, O., among cities.

Awards for outstanding performance in traffic law enforcement in 1951 were granted, among the states, to Delaware, West Virginia, Oklahoma, Colorado and California. City winners, in various population groups, were Los Angeles, San Francisco, Oakland, Pasadena and Sacramento, Calif.; Washington, D.C.; Toronto, Can.; Dallas, Tex.; Seattle and Richland, Wash.; Denver, Colo.; Oklahoma City, Okla.; Jackson, Lansing, Birmingham and Kalamazoo, Mich.; Columbia, S.C.; Oak Ridge, Tenn.; Shaker Heights, O.; Winnetka, Ill.; and Bristol, Va. This was the fourth year that police agencies had been honoured for excellence in traffic work, the awards being based on evaluation of enforcement reports of cities and states.

SCULPTURE for bronze statue to be awarded by the National Safety council in a program established in 1952 to honour women's contributions to highway safety



Awards for outstanding traffic engineering were given to Delaware, Virginia, Minnesota, Washington, California and Michigan among states and Detroit, Mich., Cleveland, O., Milwaukee, Wis., Buffalo, N.Y., Kansas City, Mo., Providence, R.I., Flint, Mich., Evanston, Ill., Miami Beach, Fla., and Rocky River, O., among cities.

Farm Safety.—Recognition of the seriousness of the farm accident problem was indicated by the fact that in 1952, 29 states had state farm safety committees and 12 states had full-time farm safety specialists, working through many public and private agencies to spread information on the seriousness of the farm accident problem and ways and means of meeting it.

The president of the United States, for the eighth successive year, proclaimed a National Farm Safety week in July 1952, which focused attention on the problem of rural accidents. More than 1,500,000 pieces of educational material were distributed, and radio, newspaper and magazine support was excellent.

School and Child Safety.—Among children and young people from 1 to 24 years of age, accidents rank first as a cause of death. For children under 5 years of age, the total accidental death rate in 1952 was about half of the rate at the turn of the century while the motor-vehicle rate was about 15% lower than the 1929 peak. For children 5 to 14 years old, also, the total accidental death rate was about half the 1903-07 average, while the motor-vehicle rate was about 40% less than the 1927 peak.

A specialized feature of school safety work was the driver training program instituted in many high schools throughout the nation. Studies showed that students who had this training were involved in fewer accidents than those who had not.

Home Safety.—The 1951 toll of deaths in home accidents was 28,000. Estimates for 1952, based on the first seven months, indicated that home fatalities in 1952 would number slightly more than in 1951.

Activity in home safety during 1952 consisted in large part of improved and expanded safety education of people generally, both through the general media of public information and through specific instructional material.

Local and state health departments gave increased attention to accident prevention work, concentrating on home safety. Women's clubs and other organizations and agencies attracting the support and interest of homemakers showed an increasing tendency to include safety in the home as a regular program activity.

Community and State Safety Organizations.—Community and state safety organizations serve in their respective areas to provide leadership in a co-operative effort among all groups and individuals working together for the conduct of safety activities. Control of accidents in any community involves the joint efforts of traffic enforcement and engineering authorities, public information channels of various kinds, industry, labour, service groups and many others. It is the function of the local safety council to harmonize and co-ordinate these activities.

During 1952, approximately 90 out of the several hundred local and state safety organizations throughout the country qualified for acceptance as chapters of the National Safety council, the relationship signifying that these organizations fully represented the National Safety council in the communities in which they operated, although at the same time they retained their autonomy.

(R. L. Fo.)

Canada.—In 1951, auto accidents took 949 lives in Ontario, compared with 791 in 1950, and injured an additional 22,557 persons. The authorities tried diligently to curb the toll. Manitoba reported that in two years traffic fatalities in that province had been cut by 50% and all traffic accidents by 18%. The method involved a record of all Manitoba drivers with points scored for all driving errors, accidents and convictions; each

point meant a warning letter for a driver, and when a driver reached eight points he had to enter a driving clinic or lose his licence. A probationary licence was issued to those who passed the clinic.

Industrial accidents in Canada were the highest ever in 1951 (1950 in parentheses): 488,361 claims (439,094) and 1,155 (1,011) deaths. A 1952 survey revealed that falls, cutting instruments and crushing accounted for 71% of total time lost through farm accidents; 27% was from kicks from animals and misadventures with engines and tractors.

(C. Cy.)

Great Britain.—Road Safety.—The ministry of transport continued its road safety campaign with the help of local authorities and of the Royal Society for the Prevention of Accidents. "More Courtesy" was chosen as the theme for 1952. A national safety week was held (Aug. 2-9), the theme being "Safe Driving." On Aug. 1 the minister of transport broadcast an appeal to all road users.

A team of representatives of the ministry, the Royal Society for the Prevention of Accidents and members of parliament toured the London-Brighton road to watch road behaviour. There was an exhibition of roadmanship at London's Charing Cross underground station.

The government's committee on road safety issued reports on the revision of the Highway code; on motorcycling accidents and on the 1951 Chatham bus disaster in which 23 cadets were killed. In February the minister of transport broadcast on zebra crossings to explain correct crossing procedure.

Arising out of a private member's motion in the house of commons in June, the parliamentary secretary to the ministry of transport reviewed measures to be taken by the government to increase road safety: viz., illumination of zebra crossings; elimination of "black spots"; financial aid for the provision of school patrols; and proposals for increasing the number of mobile police patrols. It was announced that £1,500,000 would be made available for the removal or improvement of "black spots."

The Duke of Edinburgh, presiding at the annual meeting of the Automobile association, appealed to all organizations interested in road safety to work together. As a result, the president of the Royal Society for the Prevention of Accidents called a conference of 37 national societies in October.

The National Safety congress was attended by more than 1,000 local authority delegates.

Nearly 300,000 commercial drivers entered the 35th National Safe Driving competition. The number of child cyclists who passed the Royal Society for the Prevention of Accidents' Cycling Proficiency test reached a total of more than 32,000 since the scheme started in 1947. A typical test at a Croydon school was televised by the British Broadcasting corporation.

Industrial Safety.—An Industrial Safety conference and exhibition held in Scarborough was attended by more than 600 representatives of industrial firms. Other conferences included a Chemical Works Safety conference; a one-day conference of industrial representatives in London on "The Management and Accident Prevention"; and the annual conference of the Industrial Safety Officers' section. H. R. Payne, chairman of the National Industrial Safety committee, gave the Shaw lecture at the Royal Society of Arts on "Industrial Accidents."

A "Better Housekeeping" week was held in industry throughout the country (Oct. 6-11).

Home Safety.—The 35th local Home Safety committee was formed. The Children & Young Persons (Amendment) act 1952 came into force on Oct. 1. This raised the age limit in connection with the necessary provision of fireguards from 7 to 12 years and extended the section to any heating appliance likely to cause injury. A classified précis of fatal accidents in the home, Jan.-Dec., 1951, was produced by the electrical branch of the



PROPERLY LIGHTED PEDESTRIAN-CROSSING in England. These zebra-striped crossings were introduced as a pedestrian safety measure, though in 1952 they caused an increase in crossing accidents where improperly lighted

home office. (See also DEATH STATISTICS; DISASTERS; INDUSTRIAL HEALTH.)

(H. I. S.)

Acheson, Dean Gooderham (1893-), U.S. secretary of state, was born on April 11 in Middletown, Conn., attended the Groton school and graduated from Yale in 1915 and from the Harvard law school in 1918. He served in the navy in World War I and was for two years private secretary to Louis Brandeis, associate justice of the U.S. supreme court. He practised law, served for six months as undersecretary of the treasury in 1933, and entered the state department in 1941, first as assistant secretary of state and later (Aug. 1945 to June 1947) as undersecretary. He was sworn in as secretary Jan. 21, 1949.

Acheson was a chief author of the Truman foreign policy, and strongly supported measures for international co-operation, such as the North Atlantic alliance and the United Nations military operations in Korea. Yet because he had been high in government counsels during the wartime and postwar periods when the Soviet Union and international communism gained greatly, he was the continual target of criticism from foreign policy critics within both political parties. Especially after the entry of red China into the Korean war, demands for his resignation grew apace, and Pres. Harry S. Truman repeatedly issued denials that Acheson would leave his post. The storm about him grew hottest after the ouster of Gen. Douglas MacArthur as commander of the U.N. forces in Korea, a move that precipitated the "great debate" on U.S. foreign policy.

In Feb. 1952 Acheson represented the U.S. at the North Atlantic Treaty organization conference in Lisbon, Port. At Bonn, Ger., on May 26 he signed the peace contract with the new

German Federal Republic. The following month he returned to western Europe, visiting London, Berlin and Vienna and flying from there to Brazil for a week's "good-will tour" (July 2-8).

ACTH: see ALLERGY; ARTHRITIS; CHEMOTHERAPY; CORTISONE, HYDROCORTISONE AND CORTICOTROPIN; ENDOCRINOLOGY; INTOXICATION, ALCOHOLIC; PSYCHOSOMATIC MEDICINE.

Aden. British colony and protectorate and free port on the south coast of Arabia. (Also Kamaran [area 22 sq.mi.; pop. c. 2,200], a pilgrimage quarantine island and radio station off the Yemen coast, is administered from Aden.)

Colony.—Area: 80 sq.mi., including Perim Island (5 sq.mi.) and Kuria Muria Islands. Pop.: (1946 census) 80,876; (1951 est.) 100,000. Language: Arabic; Indian dialects and Somali are also spoken. Religion: Moslem.

Protectorate.—Western and eastern areas, the latter including the Hadhramaut and Socotra Island. Total area, 112,000 sq.mi. Pop.: (1951 est.) 650,000. Religion: Moslem. Premier chieftain (western), Fadl Abdul Karim, sultan of Lahej, until June 4, 1952, when succeeded by Ali Abdul Karim al-Abdali; premier chieftain (eastern), Sir Salih bin Ghalib al Qu'aiti, sultan of Shihr and Mukalla. Governor in 1952, Tom Hickinbotham.

History.—In April 1952 the sultan of Lahej ordered the killing of two of his amirs and fled to the Yemen. Protectorate levies were sent to Lahej for a few days to maintain order, and a temporary regency was established. The sultan was deposed by his people and his brother was elected to succeed him in June. Aden came into the news again shortly afterward when a Panamanian-registered tanker, the "Rose Mary" carrying oil from Iran was detained at the port by an order of the court, and litigation followed about the ownership of its cargo. Aden college was opened during the year to provide secondary, and later higher, education for boys from both the colony and the protectorate. At Abyan about 100,000 ac. were under irrigation.

(K. G. B.)

Education.—Schools (1951): public, primary 11 (teachers 112, pupils 2,360), secondary 3 (teachers 40, pupils 716); independent (aided and nonaided), primary 19 (teachers 59, pupils 2,677), secondary 8 (teachers 34, pupils 1,038).

Finance and Trade.—Monetary unit: East African shilling, valued at 14 cents U.S. (Sept. 1952). Budget (1952 est.): revenue £1,513,389; expenditure £1,476,962. Foreign trade (1951) imports: £50,216,737; exports £44,366,309. Principal export: salt (338,768 tons in 1951).

See W. H. Ingrams, *Arabia and the Isles* (London, 1952).

Adenauer, Konrad (1876–), German government official, was born at Cologne, Jan. 5. Following a university education at Freiburg-in-Breisgau, Munich and Bonn, and three years as a lawyer, he was in 1906 elected town councillor in his native city. Eleven years later he was elected *Oberbürgermeister* (lord mayor) of Cologne, an office which he held uninterruptedly for 16 years. From 1917 to 1933 he was a member of the Prussian *landtag* and in 1928-33 was its speaker. During World War II he was detained for a time in Brauweiler concentration camp. In Feb. 1946 he was elected chairman of the Christian Democratic union in North Rhine-Westphalia, and on Sept. 1, 1948, was elected president of the parliamentary council drafting the west German constitution. On Sept. 15, 1949, after the elections to the *bundestag* of the new west German republic had given the C.D.U. the largest number of seats, Adenauer was appointed chancellor.

Adenauer's chancellorship was marked by the substantial economic recovery of the republic and by renewed German participation in external politics. In 1951 and 1952 he had discussions with Dean Acheson, U.S. secretary of state, and with Robert Schuman and Anthony Eden, foreign ministers of France and Great Britain, and with his Italian and Benelux (Belgium, the Netherlands, Luxembourg) colleagues. At a meeting in London,

Feb. 17-19, 1952, with Acheson, Schuman and Eden, agreement on western German rearmament was reached, and on May 26, 1952, at Bonn, Adenauer signed the "convention on relations between the three powers and the Federal Republic of Germany." The next day in Paris he signed a treaty establishing the European Defense Community. On July 9, in a speech to the *bundestag* at Bonn he warned that western Germany's only alternative to the European Defense Community was Soviet domination. He was the first president of the European Coal and Steel Community Council of Ministers to be elected (Luxembourg, Sept. 8). (See also EUROPEAN UNION.)

Adjusted Compensation: see VETERANS ADMINISTRATION (U.S.).

Adult Education: see EDUCATION; LIBRARIES; MOTION PICTURES.

Advertising. Advertising in the United States continued to expand in volume during 1952, standing in August approximately 9% above its level of 1951. Television persisted as the most spectacular advertising medium, the expenditures on network television being 52% higher during the first eight months of the year than for the comparable period a year before. If the midyear rate of growth for all advertising were continued, an expenditure for the year of more than \$7,000,000,000 would be indicated.

Television.—The networks were deriving a larger proportion of their revenues from television than from radio. The volume of advertising in network television was \$111,667,702 for the first eight months of 1952, compared with \$73,459,488 for the comparable period the year before. The volume of network radio advertising was \$103,982,740 for the 1952 period. The 19,124,900 television sets in use by October compared with only 10,000,000 at the beginning of 1951 and 3,950,000 in 1950.

It was believed that the growth of television would be accelerated by the action of the Federal Communications commission in lifting in April its ban of more than three years' duration on the construction of new television stations. The commission provided for the opening of 2,053 new stations in 1,291 communities in the United States and its possessions. Only 108 stations had been on the air, capable of reaching only half the country's population.

Most advertisers on network television were appropriating additional advertising funds for their use of television, rather than reducing their expenditures in other media. Only radio seemed to suffer materially. The 171 leading advertisers on television spent 87.3% more in that medium during the first six months of 1952 than in the first half of 1951. They spent 6.2% more in magazines, but 13.7% less in network radio.

Neither was the impact of television upon the audiences of other advertising media especially adverse. A survey by Daniel Starch and Staff showed that there was no significant difference in readership of newspapers in homes with or without television. Studies by other organizations showed that there was a decline in radio listening and motion-picture attendance in homes with television, but that readership of newspapers and magazines increased.

Radio.—Network radio advertising stood at \$103,982,740 for the first eight months of 1952, compared with \$119,044,020 for the same period in 1951. In spite of this decline, radio listening was healthy, the A. C. Nielsen company reporting more than 43,800,000 U.S. homes with radios, or 98% of all homes. A Pulse survey indicated that there were 27,500,000 radio-equipped automobiles. It was estimated there were 105,300,000 radio sets in use in the United States.

The Nielsen organization also reported that there was still

an average of 2.84 hours of radio tuning a day in all homes with radio, compared with 1.73 of television viewing. But considering only homes with television, the viewing was 4.33 hours a day, compared with 1.66 hours of radio tuning.

The National Association of Radio and Television Station Representatives reported that cost of spot radio per thousand sets in use and per thousand radio families was 26% and 11.9% lower, respectively, in 1951 than in 1941. Although radio station operating costs had risen, spot radio remained relatively low in cost because the audience had increased.

The National Broadcasting company presented to its affiliates a plan to revise the network's rate and discount structure. Among other effects, the revisions would reduce net time costs to evening advertisers by from 23% to 30%. More than 95% of Columbia Broadcasting system's affiliates had agreed to a new rate and discount structure that was incorporated in the system's rate card effective in August.

For the first time in history national spot sales in 1951 passed network time sales and it was estimated that they would make further advances in 1952.

Newspapers.—Estimates by Media Records placed the total of general and automotive advertising in newspapers at 6.4% lower during the first half of 1952 than for the comparable period in 1951. The shortage of materials brought about by the steel strike resulted in some falling off in advertising, especially in the industrial and housing equipment and supplies classifications. The lagging cigarette advertising of the first six months was stimulated in the summer by the introduction of another king-size cigarette. During the summer the tire manufacturers were more active in advertising than in recent years, using large newspaper space to feature economies in new tires and special trade-in deals.

In June the Bureau of Advertising, American Newspaper Publishers association, announced that national advertisers in 1951 spent \$513,486,000 for newspaper advertising, exceeding the 1950 total by \$14,467,000 or 2.9%.

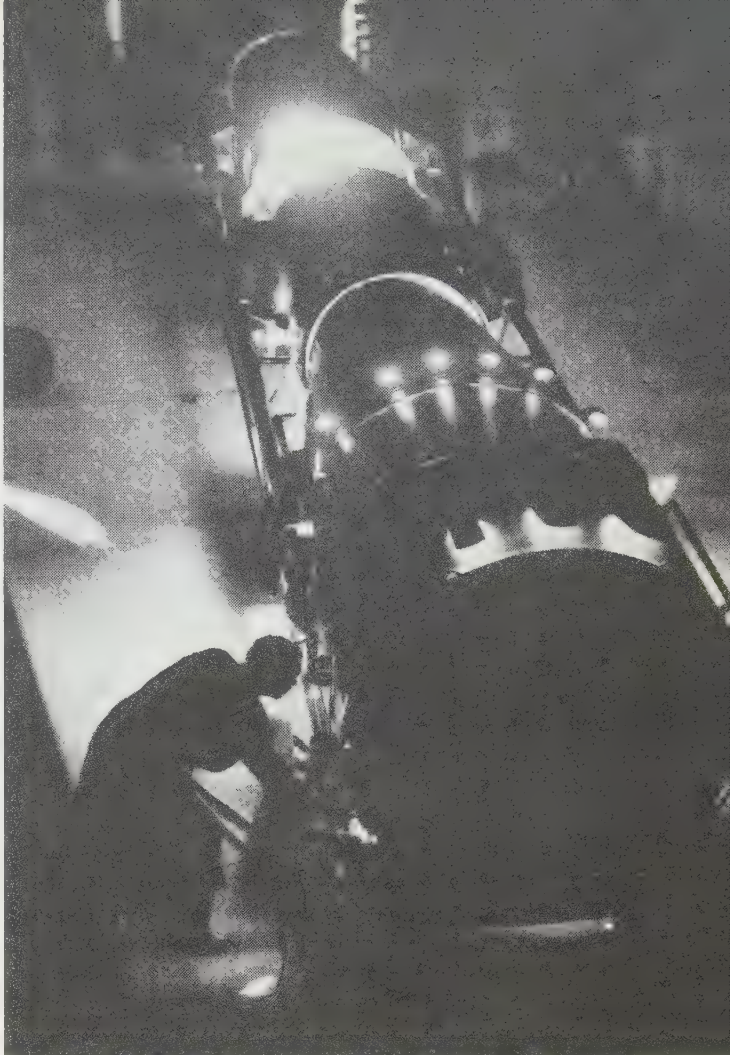
A study released by the Bureau of Advertising in October showed that manufacturers of soaps and detergents spent \$55,919,533 for advertising in 1951, compared with \$37,543,029 in 1950, an increase of 50%. Their investment in television was \$13,369,782 in 1951 compared with only \$896,035 in 1950, but their investment in newspaper advertising also rose to \$21,753,202 from \$15,459,490, and in magazine advertising to \$5,182,348 from \$4,058,664. Only radio network suffered, the appropriation of \$17,128,840 in 1950 dropping to \$15,614,201 in 1951. Newspapers took 39% of total appropriations, television and radio combined took 51.8%.

It was announced that 579 daily papers had joined the Advertising council's newspaper co-operation plan, whereby each periodically contributed space for the advertising of public service messages originated by the council.

Magazines.—During 1952 magazines were busy increasing their advertising lineage, enlarging their circulations, boosting their advertising rates, changing their formats and adding to their editorial contents.

In the first eight months of 1952 advertising in general and farm magazines totalled \$344,678,162, compared with \$314,699,630 for the same period the year before. Substantial gains were recorded in the classifications of food and food products, automotive, building materials, office equipment and writing supplies. The Magazine Advertising bureau forecast a volume of advertising in U.S. magazines in 1952 of more than \$550,000,000.

The bureau also announced circulation of general and farm magazines at 158,841,553 at midyear; there were 99 copies per 100 population compared with only 20 copies per 100 in 1914.



SEARCHLIGHT used in a variation of sky-writing developed by a German firm in 1952. The giant slide-projector, with 5,000,000 candle power, was designed to throw advertisements on clouds or, on a clear night, on a smoke screen laid down by a plane

It stated that 82% of all families and 69% of all individuals were magazine readers.

In July totals on magazine sales in 1951 were published, showing that they stood at 3,720,000,000 copies, an increase of 7.5% over 1950. This was an average of more than 30 copies of magazines for every person in the United States ten years old and over. It meant that more than 10,000,000 magazines were bought every day of the year by subscription or on newsstands.

Many magazines were reaching all-time highs in circulation, and as the result of such achievements announcing increases in advertising rates, many of them in the neighbourhood of 10%. (See also NEWSPAPERS AND MAGAZINES.)

Other Media.—Dollar volume of direct mail advertising was estimated by the Direct Mail Advertising association to be \$856,936,423 for the first nine months of 1952, a gain of more than 10% over the corresponding period in 1951. The association's grand award for the best campaign of the year went to National Broadcasting company for its advertising in promotion of television.

In the first study of its kind, the Associated Business Publications revealed that 489 advertisers spent \$74,061,817 in business paper advertising in 1951. The association indicated it would publish the study annually. Many business publications announced in the course of the year increases in advertising rates, continuing a trend that was pronounced in 1951.

At the end of September the volume of outdoor advertising was running at a rate 9% above the previous year. Expenditures

in 1951 totalled \$89,600,000. It was estimated that the outdoor industry spent approximately \$40,000,000 a year on the construction and maintenance of about 275,000 poster panels and 35,000 painted bulletins.

According to a survey by the International Council of Industrial Editors, company publications had a combined monthly circulation of 70,718,860, and more than \$112,000,000 was spent annually on about 6,500 publications sent to employees, customers and stockholders.

Advertising Appropriations.—A study of 151 companies made by the Association of National Advertisers revealed that these firms planned to spend more for advertising in 1953 than in 1952. Advertising expenditures for 1952 were estimated at 10% higher than in 1951, and it was forecast that in 1953 appropriations would be 14% more than in 1951. These companies reported that in 1952 their advertising expenditures were on the average 2.55% of sales, compared with 2.25% in 1951. These percentages of sales ranged for individual industries from a high of 30% for drugs and cosmetics to approximately 1% for paper and petroleum and lower still for some other classifications.

The National Industrial Advertisers association also published a study of advertising budgets in 1952, based upon the experience of 515 companies. As to the method used in setting the appropriation, 71.1% said their method was based upon the task to be performed, and that it considered many factors; 36.4% based their appropriation upon a percentage of anticipated gross sales for the current year; 28.7% upon a percentage of gross sales for the past year. Some companies used more than one of these methods and some used methods other than these. Slightly less than half asserted they were able to determine the effectiveness of their advertising. Approximately a third said they prepared their budgets in October, 27% in November and 14% in September. Approximately two-thirds reported that their advertising agencies helped them set the advertising appropriation and three-quarters declared their agencies worked for them on a basis where agency compensation consisted of 15% commission on space and time billed.

Advertising in Other Countries.—In the United Kingdom the newsprint shortage continued to restrict advertising, although publishers were expecting relief. Newsprint per capita was 28 lb., compared with 75 lb. in the United States, whereas daily newspaper circulation was 630 per 1,000 population against

360 in the U.S., and Sunday circulation 610 and 340, respectively.

A study by the Canadian Association of Broadcasters showed 3,454,000 homes with radio as of Jan. 1952, an increase of 55.9% since 1946. Private commercial stations numbered 134 against 99 in 1946. The average cost of one-minute class A announcements was estimated at \$9.33 in 1952-53, compared with \$8.73 in 1951-52, and one-hour class A at \$72.58 against \$68.45 in the same periods.

Television was making slow progress outside the United States. Compared with 19,000,000 sets in use in the United States, there were 1,500,000 in England, 18,000 in France, a few thousand in Switzerland. In Britain the house of commons extended the charter of the British Broadcasting corporation ten years, but ended its monopoly by authorizing competing commercial television stations when the current shortage of transmitting equipment was overcome. It was expected that this would not be for three or four years. Britain's newspapers were generally opposed to commercially sponsored television and radio. In Brazil television existed in Rio de Janeiro and São Paulo, but the high cost of receiving sets limited its use. This was also the situation in Argentina, but television had not yet appeared in Chile or Peru.

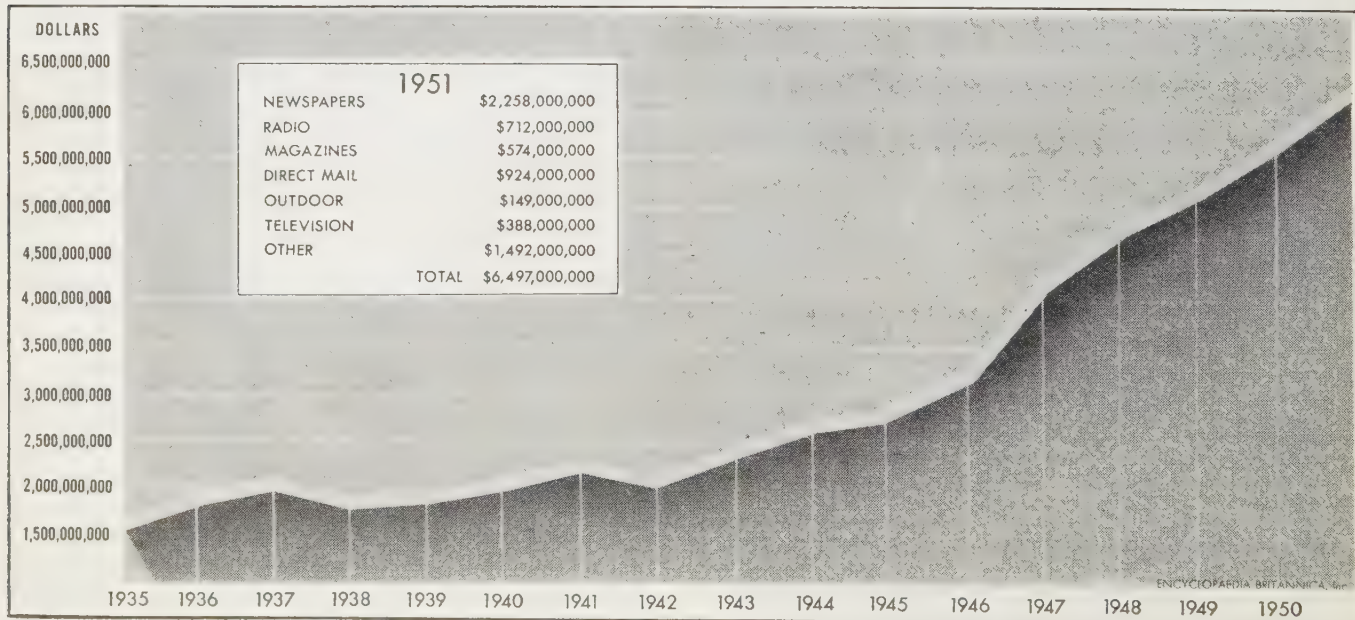
In France newsprint was still a problem and newspapers were thin although read avidly. Billboard advertising was flourishing, and television was in the offing. In Italy good radio time was booked heavily for months in advance. Newspapers were carrying their normal amount of advertising and cinema advertising continued as a popular medium.

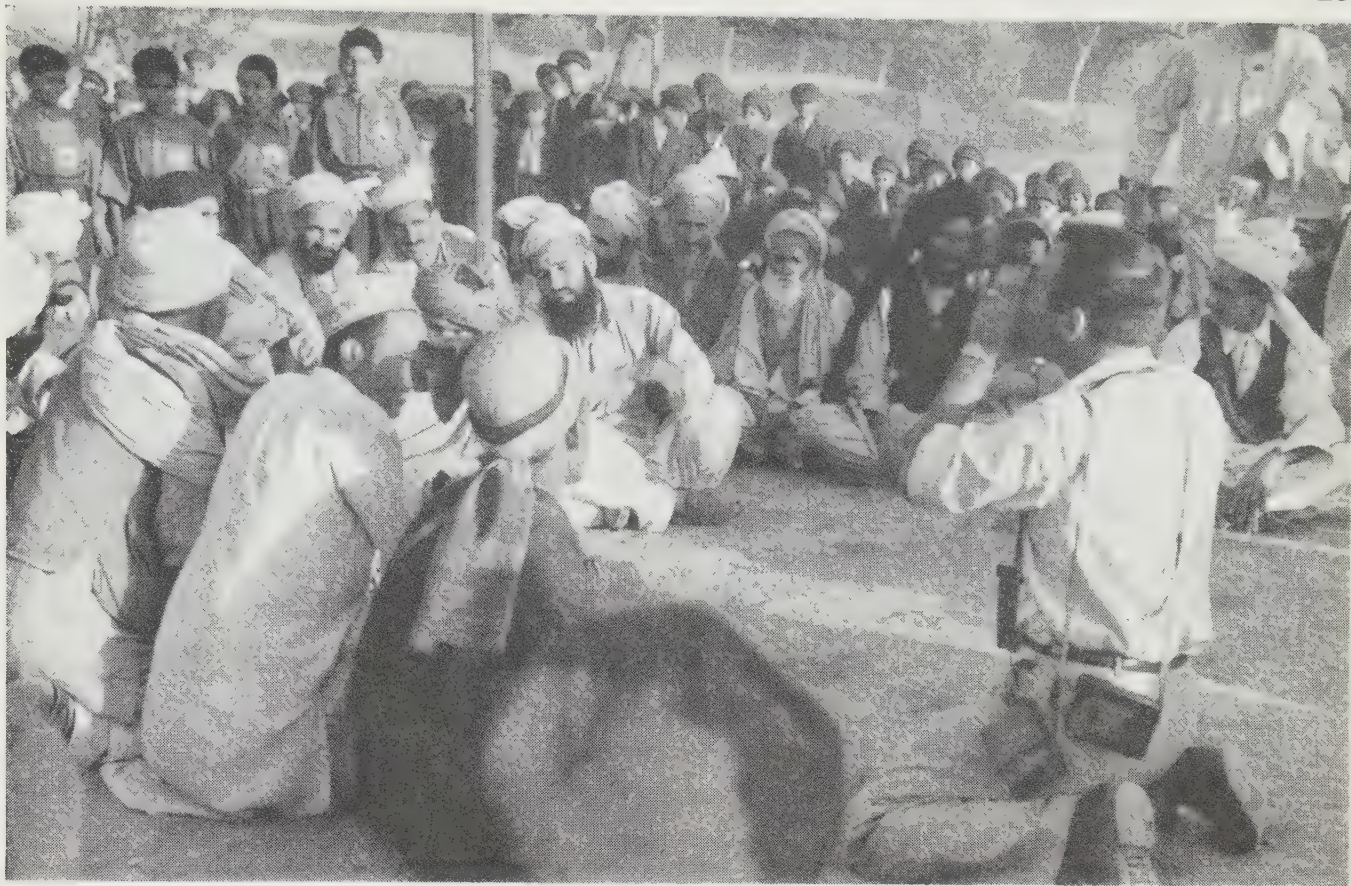
BIBLIOGRAPHY.—Edward L. Bernays, *Public Relations* (1952); Julien Elfenbein (ed.), *Businesspaper Publishing Practice* (1952); Irvin Graham, *Advertising Agency Practice* (1952); Irvin Graham, *Encyclopaedia of Advertising* (1952); Harold H. Maynard and Theodore N. Beckman, *Principles of Marketing*, 5th ed. (1952); J. Walter Thompson Company (comp.), *Population and its Distribution*, 7th ed. (1951); William H. Whyte, Jr., and the editors of *Fortune*, *Is Anybody Listening?* (1952). (R. A. BN.)

Aeronautics: see AVIATION, CIVIL; AVIATION, MILITARY.

Afghanistan. An independent kingdom in the centre of Asia, Afghanistan is bounded north by the U.S.S.R., west by Iran, south and southeast by Pakistan and east by China (Sinkiang). Area: c. 251,000 sq.mi. Pop. (1951 est.): 12,000,000. Races: Pakhtons (Pathans) or Pashtuns 60.5%, Tajiks 30.7%, others 8.8%. Language: Pashtu or Pakhtu and Persian. Religion: Moslem, mainly Sunni. Chief towns (pop. 1950 est.): Kabul (cap. 307,000); Kandahar (195,000);

DOLLAR EXPENDITURES for all media of U.S. advertising, 1935 through 1951, and 1951 expenditures for selected media (Source: *Printers' Ink*)





PASHTUNIS, tribesmen on the frontier between Pakistan and Afghanistan who wished to set up a separate state of Pashtunistan. They are shown posing for a U.S. cameraman in 1952

Herat (150,000); Mazar-i-Sharif (100,000). King: Mohammed Zahir Shah; prime minister: (from May 1946) Shah Mahmud, the king's uncle.

History.—A royal proclamation was issued in February calling upon the people to elect the eighth national assembly (171 seats) within three months. As no census of population was ever taken there were no electoral lists, and elections consisted in calling public meetings which voted for the official candidates by acclamation. In Kabul, where the election took place on April 20, there were two opposition candidates, but the government candidates were said to be elected by considerable majorities; however, out of about 50,000 entitled to vote only 7,000 actually voted.

In October King Zahir at the opening of the new national assembly reiterated the country's desire to maintain close and friendly relations with all nations. He deplored the fact, however, that relations with Pakistan had not improved. "We have," he said, "the most friendly feelings for Pakistan, but we cannot forget the cause of Pakhtunistan (Pashtunistan)." Shah Wali Khan, Afghan ambassador to Great Britain, said in a press interview (*The Hindu*, Jan. 6) that the area of Pakhtunistan included the states of Chitral, Dhir, Swat, Bajaur, Tirah, Waziristan and Baluchistan. "The right of 8,000,000 Pakhtuns to enjoy freedom cannot be ignored," he added.

A bill to nationalize oil was passed in January by the seventh national assembly and a U.N. technical assistance mission under Philip Beck (U.S.) was invited to Afghanistan. Shortly after its arrival the mission visited the Shibarghan area in the northwest, about 45 mi. from the soviet border, where rich oil deposits had been discovered.

On Aug. 21 *Izvestia* published a report that this mission was a tool of the U.S. imperialists, who were planning the construc-

tion of military roads and airfields near the soviet border. Later A. Y. Vishinsky, the soviet foreign minister, sent a strong note to Kabul protesting against the mission's presence in Afghanistan. The Kabul government refuted this note in September, explaining that, as Afghanistan's economic life depended on motor transport, all oil prospecting was in the country's vital interests. (R. Pk.)

Education.—Schools (1951): elementary 334, pupils 100,250 (including c. 5,000 girls); secondary, lower 25; secondary, higher 7; teachers' colleges 2; University of Kabul with six faculties.

Finance.—Budget: total revenue estimated at 188,000,000 afghanis. Note circulation (April 1950): 800,000,000 afghanis. Monetary unit: afghani. After the devaluation of Jan. 1952, the official exchange rate in Kabul was: Rs. 100 = 635.90 afghanis (old rate: 508.71), making the afghani worth 4.75 cents U.S.

Foreign Trade.—Principal imports: textiles, sugar, china, motor fuel and paraffin (4,500,000 gal. in 1949), cement (18,100 tons in 1949), machinery, tea, coffee, cocoa. Principal exports: karakul skins (\$26,000,000 in 1950), carpets, cotton, raw wool, fruit, spices.

Transport and Communications.—No railways. Roads (1949): 2,265 mi. Licensed motor vehicles (Dec. 1950): cars 975, commercial 3,735. Telephones (1949): 3,899. Radio receiving sets (1949): 4,800.

Agriculture.—Main crops (metric tons, 1948 est.): wheat, 1,700,000; barley; rice, paddy 333,000; millet; maize; cottonseed 9,000; grapes 20,000; cotton, ginned (1951) 10,000. Livestock (Sept. 1948): horses 500,000; asses 1,000,000; mules 200,000; cattle 2,500,000; sheep 14,000,000; goats 6,000,000; camels 350,000; chickens 40,000,000. Raw wool production, greasy (1950 est.) 7,000 tons.

A. F. of L.: see LABOUR UNIONS.

Africa: see BRITISH EAST AFRICA; BRITISH SOUTH AFRICAN TERRITORIES; BRITISH WEST AFRICA; ERITREA; FRENCH UNION; LIBYA; PORTUGUESE OVERSEAS TERRITORIES; SOMALILAND, FRENCH; SOMALILAND, ITALIAN; SOUTH AFRICA, THE UNION OF; SPANISH COLONIAL EMPIRE; TRUST TERRITORIES; etc.

Agricultural and Industrial Chemistry, Bureau of: see AGRICULTURAL RESEARCH ADMINISTRATION.

Agricultural Research Administration. The Agricultural Research administration, established in 1942 as part of the U.S. department of agriculture, consolidated six research bureaus

and the Office of Experiment Stations. The administrator supervises or co-ordinates all other research of the department except economic research. He also administers the Research and Marketing act, which provides for expanded agricultural research and services in which the United States department of agriculture, state experiment stations, extension services, departments of agriculture and other public and private agencies co-operate.

A new type of cotton bandage, developed by the bureau of agricultural and industrial chemistry, was being made commercially in 1952 for the armed forces and was expected to be available soon for civilian use. The outstanding feature of the new bandage was its ready adaptability to irregular contours of the body. This conformity was gained by means of a simple chemical treatment, which resulted in a high degree of crimp and kinkiness that gave elasticity in both directions.

A new method for disposing of dairy waste developed at the bureau's eastern regional research laboratory promised to reduce stream pollution and convert a former waste product into a useful one. The new process was rapid, inexpensive and eliminated 95% of the waste before it was discharged into a stream. Half the organic material of the waste was converted to bacteria and removed as a sludge, and most of the rest was oxidized to carbon dioxide and water. The sludge was found to be useful as a fertilizer and a promising source of vitamin B₁₂.

Poultry nutrition studies conducted by the bureau of animal industry revealed that chickens perform one of the steps in the building of living tissue which formerly was believed to be possible only for green plants and micro-organisms. When very dilute sulphuric acid containing radioactive sulphur was injected into hens, radioactive sulphur was found in the proteins of their eggs. The proteins were then broken down to the amino acids. The methionine was found to be entirely free of radioactivity; the cystine was highly radioactive. Evidently the hens were able to use inorganic sulphate to make cystine but not methionine.

Research in co-operation with several state experiment stations identified chlorinated naphthalene compounds as one of the causes of X-disease (hyperkeratosis) in cattle. These compounds are found in various products used on the farm.

Further proof of the high-production inheritance that had developed in the bureau of dairy industry's Holstein herd at the research centre at Beltsville, Md., by the continuous use of good, proved sires, was indicated by the ninth cow to produce more than 1,000 lb. of butterfat. Her excellent producing ability was further indicated by her five lactation records to date, which totalled 111,645 lb. of milk and 4,583 lb. of butterfat.

After a long series of experiments with a large number of detergent compounds, a simple new test was developed for determining the fat content of milk and cream. The new test, which involved the use of a detergent compound instead of sulphuric acid, measured the fat content directly, rapidly and as accurately as the well-known Babcock test. Besides producing a clearer fat column in the bottle neck and permitting a more precise reading of the fat percentage, the detergent compound made the bottles easier to clean than when sulphuric acid was used. The use of the detergent also eliminated the danger to the operator from the corrosive action of sulphuric acid.

Tests in several locations by the bureau of entomology and plant quarantine revealed that the rate of application of DDT insecticide to the soil had little influence on the percentage of toxic residue. Soil samples were treated at the rates of 25 lb. and 50 lb. of DDT per acre, but the percentage of carry-over in eight years of testing was about the same in either case. DDT began to lose its killing power only in the fifth year after application, in tests with Japanese beetle grubs. A single treat-

ment at the 25 lb.-per-acre rate resulted in 98% grub kills within about four weeks after the grubs were put in the soil, during the first four years. It required slightly more than five weeks to get the same kill the fifth year.

A revolutionary method involving radiant energy had been developed in the laboratory and was undergoing field tests in an effort to eradicate the screwworm fly, which causes annual losses of millions of dollars in the eastern area of the United States. The new method involved the carefully timed liberation of laboratory-reared flies after exposing them to radiation that sterilized them. Because of the relatively small number of flies that survive the winter in Florida, it was believed that it could be proved practical to rear and liberate the infertile treated flies in numbers five to ten times as great as the wild flies in the area. The following generation in the field would then be much reduced below the number surviving the winter. By continuing mass liberations of treated flies over two winters and the intervening summer, it was hoped that the complete elimination of the fly could be attained in the southeast.

Experiments were conducted by the bureau of human nutrition and home economics to determine whether dietary deficiencies work greater hardship on one sex than the other. Growing and adult rats were used as the laboratory animals. When protein was low in quantity or of poor quality in diets otherwise good, young female rats were less seriously retarded in growth than the males. Likewise among adult animals, gross protein deficiencies caused less pronounced malnutrition with a lower death rate among females than among males. On the other hand, when young rats had diets adequate in all respects, the males gained weight more rapidly than the females.

In recognition of older people's food problems, the bureau prepared and issued a *Food Guide for Older Folks*. The guide gave information on using a food plan for good nutrition, supplemented by up-to-date information on nutrition and weight control, and suggestions for meeting special problems that older people frequently face, such as cooking for one or two; cooking with little equipment; and having a good diet when food must be easy to chew.

The bureau prepared a 24-page illustrated bulletin to help with the fitting problems of women who make their own tailored garments or undertake some alterations on ready-mades. The publication contained a key to the usual cause of common fitting problems and suggested ways to correct them.

During the year the bureau of plant industry, soils and agricultural engineering received 5,600 introductions of seeds and plants from abroad. This breeding material was being screened by the bureau in co-operation with state experiment stations in efforts to find characteristics that could be incorporated in crop plants in the United States to improve insect and disease resistance, yields and quality. In turn, the bureau sent 8,000 shipments of agricultural and wild plant materials to 76 countries for trial, together with advice on how the materials might best be utilized.

In plant disease studies it was found that antibiotics, which had proved so valuable for men and animals, also looked promising for controlling plant diseases. Bureau scientists applied minute amounts of 12 antibiotics as a thin layer of paste to the stems of black valentine bean seedlings and then inoculated the plants with halo blight, a bacterial disease. Streptomycin sulphate protected the plants 100%. Two other antibiotics did fairly well. Plants treated with the nine other antibiotics and the control plants developed the disease. Apparently the drug was absorbed by the stems and moved up to the leaves in sufficient amounts to prevent growth of the disease organisms. These experiments demonstrated a possible new means of con-

trolling bacterial disease in plants. Practical methods of applying these fundamental findings to crops in the field had not yet been worked out.

Studies on handling and transportation of fruits and vegetables produced improved methods for prepackaging and emphasized the importance of refrigeration in keeping packaged commodities fresh. They showed, for example, that apricots in sealed film would maintain satisfactory quality up to six days when stored at 40° F. but would develop bad odours and off-flavours quickly if held at 65° F. Carrots packaged in some types of film could be held for six days at 70° F., two weeks at 40° and three weeks at 32°. Onions, sweet corn and broccoli spoiled quickly when packaged in film that was not ventilated with small holes. Nutmeats, on the other hand, needed strong film that was moistureproof, airtight and not affected by the nutmeat oil.

The Office of Experiment Stations, as in former years, was responsible for the administration of federal-grant research funds appropriated to state agricultural experiment stations. The office reviewed and approved 599 new and revised research proposals and reviewed activities under 4,445 specific lines of research under way during the year. The administration of the federal experiment station at Mayagüez, P.R., remained a further responsibility.

(B. T. S.)

Agriculture. U.S. agriculture in 1952, though perhaps somewhat overshadowed by the record performance of Canada, produced more than its usual fabulous harvest, in spite of more than the usual critical weather situations. Planting and harvest seasons were generally early, and in many

areas warmer and drier than usual. Timely rains came, and the total volume of crop production was the second largest on record, about 3% less than the peak in 1948. Most crops were above average; of the major crops only winter wheat and rice set new high records, but corn and soybeans were the second largest on record. Livestock, too, was abundant, particularly beef cattle, which increased another 5,000,000 head during the year. More beef came to market. Prices were mixed, dropping away from ceilings in most cases, but still favourable at an index of 288 (1910-14=100) in September, compared with 291 a year earlier. Ceiling prices were suspended for most farm products. Gross farm income was a new record, but farm expenses increased at a more rapid rate than income, leaving net income substantially reduced compared with the record \$17,000,000,000 of 1947. Farm land values moved to new highs, but at a slower rate. Farm debt increased but was still low in relation to assets. The farm legislation of the year was mostly an extending and firming of earlier provisions.

Looking forward to 1953, the situation appeared mostly favourable with firm domestic demand likely, prices probably resistant to decline and supplies sufficient to dampen or stop the inflation spiral. The three major hazards, other than war, appeared to be the mounting costs of production, the rather alarming prospect that less favourable weather might be at hand, and the probability that the export market would decline, not only because of competitive foreign production but because of continuing dollar problems.

FLAME-THROWER TEAM burning the sharp spines off prickly-pear cactus plants on the King ranch, Tex., in the spring of 1952. A prolonged drought had dried up most of the grass on the range, leaving cactus the only natural food in abundance



Table I.—Index Numbers of the Volume of U.S. Agricultural Production through Two War Periods*

	(1935-39 = 100)											
Crops	1915	1920	1925	1930	1935	1940	1945	1948	1949	1950	1951	1952
Food grains . .	147	126	95	109	81	110	155	186	160	148	145	189
Feed grains and hay . . .	126	149	128	83	91	114	143	203	180	171	156	160
Cotton . . .	86	100	122	105	81	95	68	115	125	77	118	111
Tobacco . . .	80	104	95	113	89	101	137	136	136	140	160	154
Truck crops (vegetables) .	35	51	74	91	92	110	142	143	144	147	160	152
Fruits and nuts .	73	76	74	89	95	110	113	115	121	126	128	121
Sugar crops .	73	98	73	85	89	104	93	88	90	112	88	91
Total crops .	95	102	99	96	89	107	122	151	144	134	139	143
Livestock												
Meat animals .	92	99	107	100	90	118	147	133	137	138	143	148
Poultry and eggs	78	78	93	106	92	109	170	153	169	179	191	200
Dairy products .	70	72	85	94	98	105	118	111	113	113	112	111
Total livestock	81	85	96	99	93	112	141	128	134	136	141	144
Grand total .	86	92	97	98	91	110	134	137	138	135	140	144

*Estimates by the U.S. department of agriculture; 1952 figures are preliminary.

World agriculture harvested a record bread grain crop and achieved a record number of cattle. Canada harvested much of two enormous wheat crops in one year—a large portion of the 1951 crop, which overwintered in the field, and a fabulous 1952 crop. Cuba harvested a record sugar crop. Other highlights were the emerging land reform programs in Egypt and Iran, famine in China and India, Australia's drought and the unheard of importation of wheat by Argentina. Doubt arose as to whether rice trade in the far east would ever recover its pre-World War II level. Western European agriculture showed continued improvement and the true situation in regard to agriculture in eastern Europe and the U.S.S.R. became even less clear than a year before. Some agricultural raw materials, such as wool, lard and some other fats and oils, hides and jute, paced the price decline from highs reached after the start of the war in Korea, yet the cost of living in many parts of the world advanced to new levels. The United Kingdom removed restrictions on tea trade and consumption and reduced subsidies on most foods.

Crop Production.—Crop production in 1952 well illustrated the diversity and resiliency of U.S. agriculture. The early summer of 1952 was one of the hottest and driest on record, many eastern and southern parts of the country had temperatures

above normal, and rainfall was below normal east of the Rocky mountains. Serious drought occurred in a dozen states, ranging from Maine to Texas. The situation was especially devastating in an Alabama-Tennessee area, with temperatures up to 110° F. and little rain. Yet the southern Great Plains produced a record wheat crop and, more surprising, the southern and western cotton lands gave a crop more than 2,500,000 bales above average for the decade. The four so-called food grains, wheat, rye, rice and buckwheat, totalled about 42,000,000 tons, almost as much as the 1947 record.

Table II.—Production of Principal U.S. Crops

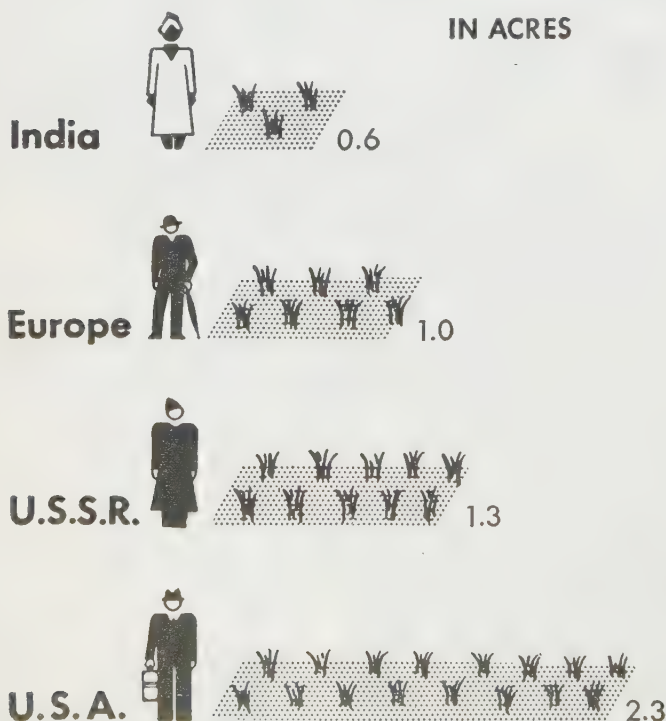
	(In thousands)							
Year	Corn bu.	Oats bu.	Wheat bu.	Cotton bales	Tame hay tons	Rice bu.	Tobacco lb.	Potatoes bu.
1933	2,399,632	733,166	551,683	13,049	66,530	37,651	1,371,131	342,306
1934	1,461,123	542,306	526,393	9,636	55,270	39,047	1,081,629	406,105
1935	2,303,747	1,194,902	626,344	10,638	73,138	38,784	1,297,155	386,380
1936	1,507,089	785,506	626,766	12,399	63,536	49,002	1,154,131	331,918
1937	2,644,995	1,146,258	873,993	18,946	73,785	53,364	1,553,405	393,289
1938	2,542,238	1,053,839	930,801	11,943	80,299	52,303	1,378,534	371,617
1939	2,619,137	937,215	754,971	11,817	75,726	52,306	1,848,654	364,016
1940	2,449,200	1,235,628	816,698	12,566	86,312	52,754	1,451,966	397,722
1941	2,672,541	1,176,107	945,937	10,744	82,358	54,028	1,261,364	357,783
1942	3,175,154	1,358,730	981,327	12,824	92,245	66,363	1,412,437	371,150
1943	3,034,354	1,137,504	841,023	11,427	87,244	64,843	1,402,988	464,999
1944	3,203,310	1,154,666	1,072,177	12,230	84,076	68,161	1,956,022	383,134
1945	2,880,933	1,535,676	1,108,224	9,015	95,289	68,150	1,993,837	418,020
1946	3,249,950	1,497,904	1,153,046	8,640	89,195	72,216	2,319,409	484,174
1947	2,383,970	1,199,422	1,367,186	11,857	89,286	78,259	2,109,581	389,048
1948	3,681,793	1,493,304	1,313,534	14,877	86,793	85,056	1,980,325	454,654
1949	3,379,436	1,329,473	1,141,188	16,128	87,240	90,549	1,972,359	411,565
1950	3,057,803	1,410,464	1,019,389	10,012	90,325	85,977	2,030,645	429,896
1951	2,941,423	1,316,396	987,474	15,144	95,788	99,791	2,328,226	325,708
1952	3,256,550	1,265,660	1,298,921	14,413	92,775	106,067	2,234,535	345,561

Though official feed grain acreage goals were not reached, the four feed grains, corn, barley, oats and grain sorghums, produced about 119,000,000 tons, to which corn made a large contribution in quality and quantity (3,256,550,000 bu.). An above-average hay crop appeared sufficient to provide a mid-western surplus for a deficit south. The four oil seeds, soybeans, cottonseed, flaxseed and peanuts, as a group were about one-third above average and 2% more than the 1951 record. Tobacco was a near record crop. Potatoes, white and sweet, were below average crops, as were the pulses (dry beans and peas). Fruit crops, excepting pears, were below 1951, most of them below average. Commercial vegetables for the fresh market were 3% below 1951 but 5% above average. Vegetables for processing were one-sixth below 1951 but 14% above average.

Table III.—U.S. Production and Yield Per Acre

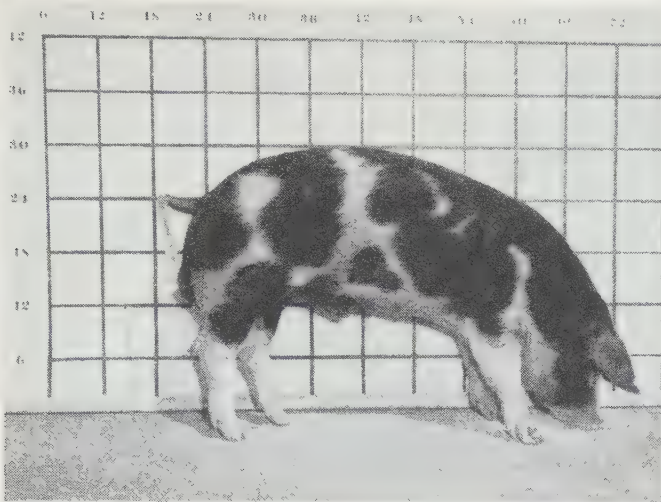
	1952*		1951	
Field Crops	Yield	Production in thousands	Yield	Production in thousands
Corn, bu.	39.6	3,256,550	36.2	2,941,423
Wheat, bu.	18.4	1,298,921	16.1	987,474
Oats, bu.	32.7	1,265,660	36.1	1,316,396
Barley, bu.	27.0	222,476	27.1	254,668
Rye, bu.	11.7	15,759	12.4	21,410
Flaxseed, bu.	9.1	31,033	8.7	33,802
Rice, bags (yield in lb.)	2,440.0	47,730	2,250.0	43,805
Hay, all, tons	1.38	103,858	1.45	108,461
Beans, bags (yield in lb.)	1,237.0	16,291	1,231.0	17,446
Soybeans, bu.	20.6	296,209	21.2	280,512
Peanuts, lb.	736.0	1,225,145	831.0	1,676,125
Potatoes, bu.	243.7	345,561	240.7	325,708
Sweet potatoes, bu.	91.2	30,814	91.8	28,278
Tobacco, lb.	1,248.0	2,234,535	1,307.0	2,328,226
Sugar beets, short tons	15.2	10,334	15.2	10,485
Cotton, bales (yield in lb.)	280.2	14,413	271.9	15,144
Fruit Crops				
Apples, bu. . . . .	...	95,975	...	110,660
Peaches, bu. . . . .	...	62,622	...	63,627
Pears, bu. . . . .	...	30,879	...	30,028
Grapes, tons . . . . .	...	3,092	...	3,386
Oranges, boxes . . . . .	...	...	...	118,180
Grapefruit, boxes . . . . .	...	...	...	40,370

*Indicated, Oct. 1952.



ACRES OF CROPLAND per person in India, Europe, U.S.S.R. and the U.S.

Livestock Production.—Livestock and poultry on U.S. farms, revised in the light of the 1950 census of agriculture, in Jan. 1952 showed a net increase of about 4% over a year earlier. Further increase was indicated for most kinds during 1952. Livestock was up 4%, poultry 3%, meat animals 5%; milk



THE BELTSVILLE NO. 1, a new breed of meat hog developed by the U.S. department of agriculture, crossed from Landrace and Poland China blood. Dressed weight is about 80% of live weight on the average, but with a higher proportion of lean to fat than for the average market hog

stock declined slightly; work stock declined 11%. The total value for seven species was \$19,549,896,000, compared with \$17,127,355,000 a year earlier, cattle accounting for \$15,733,051,000 of the total. Milk cows reached a record average price of \$250 per head. As predicted late in 1951, the pig crops of 1952 were cut about 9% to about 93,107,000 head compared with the previous year, largely because of the unfavourable price-feed ratio (the corn-hog ratio). Cattle, however, increased to approximately 93,000,000 head.

Slaughter in 1952 of about 27,500,000 cattle and calves and 85,000,000 head of hogs plus sheep, lambs and poultry provided about 22,600,000,000 lb. of red meat and 5,750,000,000 lb. of poultry for consumption. Of that amount, more than 94% was distributed to U.S. civilians, about 5% to the U.S. military, and small amounts exported. Thus the U.S. civilian in 1952 consumed about 142 lb. of red meat and 35 lb. of poultry, 2% to 3% more than in 1951. Larger amounts, particularly of beef, were in the production line for slaughter in 1953. Cattle being fattened in the corn belt were at record numbers. Egg production was a new record, providing 406 or more per person. Milk production declined, as a decrease in numbers more than counterbalanced the high rate of production per cow.

Feed grains totalling 119,000,000 tons, plus 20,000,000 tons of carry-over stocks and additional amounts of oil meals, provided about 165,300,000 tons of concentrate feeds for the 1952-53 feeding year, compared with 169,800,000 tons a year earlier, but because of the reduction in livestock to be fed, mostly a reduction in hog numbers, the amount of .97 ton per animal unit was the same as in the previous year. The hay supply was above average, though regionally short because of drought.

It appeared that 1953 would provide more beef for slaughter, at somewhat easier prices. At least two questions were unanswered—whether the pig crop of 1953 would increase following the favourable 1952 corn crop, and whether the drought or semidrought conditions afflicting the western half of the country (and some other areas) would be eased before reduction in livestock herds, especially cattle, was inescapable.

Agricultural Stocks and Foreign Trade.—Trade in agricultural products in 1951-52 contributed more than 25% of all U.S. exports and more than 40% of U.S. imports. U.S. agricultural exports reached an unprecedented value of \$4,042,601,000, about 20% more than in the previous year and 5% more than the previous peak of \$3,850,000,000 attained at the end of World War I. The volume of out-moving agricultural

products in 1951-52 was 6% less than in 1919-20, though 18% larger than in 1950-51. Cotton (\$1,204,200,000) and wheat (\$1,066,800,000) contributed more than half the value. Compared with the values of the previous year, vegetables (+52%), wheat (+42%) and cotton (+28%) showed the biggest increases, whereas oil seeds declined by 29%. On a volume basis, milled rice increased 77% and lard 48%, but soybeans decreased 41%.

Agricultural imports into the U.S. in 1951-52 totalled \$4,692,665,000, compared with \$5,146,465,000 in the previous year. Of the 1951-52 total, \$2,727,848,000 was classed as complementary; i.e., goods of kinds for the most part not grown commercially in the U.S. Coffee was the major contributor (\$1,337,900,000), followed by crude rubber (\$787,800,000). Carpet wool decreased by 61%. Supplementary agricultural imports—foreign products similar to products of domestic commercial production—were valued at \$1,946,817,000, compared with \$2,280,853,000 in 1950-51. The leading item, cane sugar, increased slightly, but the second product, apparel wool, declined 28%. Molasses showed the major increase (+55%), cattle the major decline (−62%).

Meanwhile, carry-over stocks prior to 1952 crops were for many items reduced in the U.S., compared with a year earlier. Wheat declined to 253,895,000 bu. from 396,254,000 bu. in 1951; corn was less than 500,000,000 bu., compared with 739,000,000 bu. in the previous year; but cotton increased to 2,745,000 bales from a very low level of 2,278,000 bales a year earlier. Holdings of the Commodity Credit corporation of such items as dried eggs, dried skim milk, cheese and butter were sharply reduced. Meanwhile, reserve stocks were increased in some importing countries, especially western Europe and India. Canada also had substantially larger stocks available for export. In the U.S. it appeared that stocks at the end of 1952-53 would be somewhat increased, especially wheat.

Table IV.—Farmers' Average Prices, Certain U.S. Crops, on Selected Dates
(In cents per unit)

	Wheat per bu.	Corn per bu.	Oats per bu.	Barley per bu.	Rye per bu.	Buck- wheat per bu.	Pota- toes per bu.	Eggs per doz.	Cot- ton per lb.
Oct. average, 1909-13	88.1	64.8	38.4	60.5	72.0	71.1	65.0	23.8	12.10
Oct. 15, 1936	106.8	97.9	43.1	84.2	80.4	78.3	97.9	27.6	12.23
Oct. 15, 1937	88.7	58.9	28.8	52.0	63.8	62.4	48.5	25.2	8.10
Oct. 15, 1938	52.2	41.9	22.1	36.1	32.9	54.9	51.0	27.1	8.53
Oct. 15, 1939	70.3	47.6	30.3	42.2	45.1	62.7	66.4	22.9	8.73
Oct. 15, 1940	68.2	59.4	28.3	38.2	40.5	54.4	52.0	23.7	9.35
Oct. 15, 1941	91.0	64.9	38.9	49.1	51.3	64.3	67.2	31.8	16.55
Oct. 15, 1942	103.5	77.5	43.2	57.6	52.9	77.0	102.5	37.4	18.87
Oct. 15, 1943	135.0	107.0	77.4	103.0	101.0	110.0	128.0	45.2	20.28
Oct. 15, 1944	142.0	113.0	65.9	95.4	108.0	102.0	142.0	38.8	21.25
Oct. 15, 1945	151.0	113.0	62.8	101.0	138.0	106.0	126.0	42.6	22.30
Oct. 15, 1946	188.0	171.0	79.9	135.0	199.0	144.0	122.0	51.5	37.69
Oct. 15, 1947	266.0	223.0	109.0	177.0	249.0	197.0	150.0	55.3	30.65
Oct. 15, 1948	198.0	138.0	70.0	110.0	143.0	117.0	142.0	54.7	31.07
Oct. 15, 1949	189.0	109.0	62.3	107.0	128.0	97.9	130.0	51.4	28.70
Oct. 15, 1950	191.0	137.0	73.5	112.0	127.0	106.0	85.8	43.2	38.90
Oct. 15, 1951	210.0	164.0	81.9	123.0	152.0	134.0	139.0	55.6	36.21
Oct. 15, 1952	207.0	153.0	82.8	142.0	174.0	147.0	211.0	43.1	37.02

Farm Product Prices.—Prices on all farm products changed very little in 1952, in spite of much fluctuation of individual commodities with season and marketing. The index stood at 288 (1910-14=100) in September, compared with 291 a year earlier. However, crops, perhaps largely as a result of support prices, were up to an index of 264 compared with 239 a year earlier. Livestock and their products, however, were down to 309 from 337 a year earlier. Though the over-all wholesale price level was only about 5% below the peak reached after the start of war in Korea, steers were fully 15% lower, hogs about 25%, cottonseed oil more than 40%, lard more than 55% and burlap about 60%. For livestock, cattle prices declined over-all nearly \$6 per hundredweight, but much of the decline was in lower grades of fat cattle, and in feeders and stockers which averaged \$23.40 per hundredweight in Sept. 1952, compared with \$32.40 a year earlier. Hog prices fluctuated erratically above

and below \$20 per hundredweight, little changed from 1951. Sheep and lambs declined \$4 to \$6 per hundredweight, and turkeys eased moderately.

The government's new retail price index eased slightly in September after a steady rise after February, a result of a 1% decline in food costs between mid-August and mid-September. Further declines were anticipated later in the year.

Farm Income.—Gross farm income for 1952 was estimated at \$37,600,000,000, 2% more than in 1951; of that total, \$33,500,000,000 were cash receipts from a record volume of farm marketings. Livestock and livestock products accounted for \$18,900,000,000, 3% less than in 1951, lower prices more than offsetting a larger volume. Crops at \$14,600,000,000 were up about 12% compared with the previous year, mostly because of an estimated 9% increase in volume of sales. Costs of farm production had risen almost constantly since World War II began, and 1952 was no exception—estimated costs of \$23,400,000,000 were 4% higher than in 1951. Interest payments showed the largest increase, reflecting the increasing indebtedness structure. Net farm income, estimated at \$14,200,000,000, was slightly below 1951 and in purchasing power was lower than any of the previous ten years, excepting only 1950.

A comparative balance sheet for U.S. agriculture as of Jan. 1952 showed assets of \$168,964,000,000, 9% higher than in 1951 and up 214% since 1940. However, omitting price increases, which might be easily lost, the value of physical assets increased only 2% or 3% in the year. Real estate made up the overwhelming bulk (\$94,586,000,000, up 9% in the year) of the total assets. Livestock (\$19,600,000,000) was somewhat more valuable than the farm machinery, etc. (\$15,308,000,000). Deposits and currency increased to \$15,200,000,000. Total liabilities increased about 10% to \$14,149,000,000, with short-term non-real-estate debt up by 21% to \$4,071,000,000.

In general, it appeared that the gross income in 1953 would not be larger, production expenses would be higher, and the realized net income would decline by about 5%.

Farm Values.—The census bureau in April reported that in 1950 there were 5,400,000 farms, with a total acreage of 1,159,000,000, and an average of 215.3 ac. per farm. The total value of land and buildings was more than \$75,000,000,000; the average farm was valued at \$13,941. One farm in each 51 earned more than \$25,000 in 1949—only about 2,000,000 farms earned more than \$2,500 in that year.

Meanwhile, farm land values continued to rise, but at a reduced rate. As of July 1, the U.S. farm land value index was 213 (1912-14=100), 5% higher than a year earlier; but for the four preceding months values rose only 1%, only 20% as much as during the same period a year earlier. Sales volume was one-third below the post-World War II peak.

Farm Labour.—Near the peak of the 1952 autumn harvest period, 13,252,000 persons were working on farms, of which 9,543,000 were farm operators or unpaid members of their families, and 3,709,000 were hired workers. This was nearly 100,000 more hired workers, but about 200,000 fewer family workers than a year before.

The average for all farm wage rates was about 69 cents per hour, 5% more than a year earlier. Monthly rates to married men, with house furnished, averaged \$146, compared with \$138 per month a year earlier. The agreement permitting Mexican farm workers to help harvest crops in the U.S., due to have expired on June 30, was extended for 18 mo.

Farm Machinery and Fertilizer.—Largely because of more and better machinery and fertilizer, it was estimated by the U.S. department of agriculture that agricultural production could be increased by 18% by 1955. Machinery of most types was in relative abundance late in 1952, partly because of farmer

resistance to high prices, though production was the lowest of all years since 1948. The number of tractors was estimated at about 4,170,000 of all kinds (89% of wheeled types), compared with 1,500,000 in 1940. Farmers were estimated to have spent in 1951 about \$3,000,000,000 for new equipment and machinery. Prices were up about 13% since June 1950.

The Rural Electrification administration indicated that nearly 90% of U.S. farms were receiving central station electric service, 211,229 having been added in 1951-52. (See RURAL ELECTRIFICATION.)

Fertilizer prices averaged about 3% higher than in 1951. Supplies of nitrogen available for 1952-53 were estimated at 1,585,000 tons, of which 62% would be solid nitrogen materials. In regard to phosphate fertilizers, sulphur and sulphuric acid bottlenecks were apparently mostly overcome in 1952, and the supply of available phosphoric oxide for the 1952-53 season was estimated as 10% above the 2,235,000 tons entering domestic trade channels in 1951-52. The 1952-53 supply of potash was estimated at 1,850,000 tons, about 17% more than in 1951-52. (See also FERTILIZERS.)

Commodity Credit Corporation.—The price level was such during much of fiscal year 1951-52 that the Commodity Credit corporation was not called upon to assume larger obligations in support of designated crops and livestock products. Instead it was able to make net reduction in some parts of its inventory. Loans or purchase agreements were made on 271,000,000 bu. of grain in 1951-52, compared with 319,000,000 bu. in the previous year. Wheat amounted to 212,000,000 bu. of the total, compared with 196,000,000 bu. the year before. The net realized

Table V.—Quantities and Investment in Major CCC Commodities

(All figures in thousands)					
	Unit	1952*		1951†	
		Quantity	Value	Quantity	Value
Corn	bu.	351,724	\$555,064	543,099	\$823,070
Wheat	bu.	165,628	411,124	207,659	505,320
Linseed oil	lb.	198,627	56,891	221,386	62,660
Dry edible beans	cwt.	4,330	34,123	6,203	50,622
Grains sorghums	cwt.	1,190	3,209	15,943	40,954
Dried eggs	lb.	5,307	5,399	40,411	40,180
Barley	bu.	11,836	17,312	22,888	34,245
Field seed	lb.	372,317	32,623	413,022	24,150
Cotton, upland	bales	199,609	23,141	101,287	10,349
Flaxseed	bu.	337	1,122	3,888	13,838
Rosin	lb.	209,856	15,253	144,164	10,191
Oats	bu.	7,299	6,535	11,496	10,323
Dried milk	lb.	29,889	5,043	32,088	4,614

*Investment pledged and in inventory as of June 30, 1952.

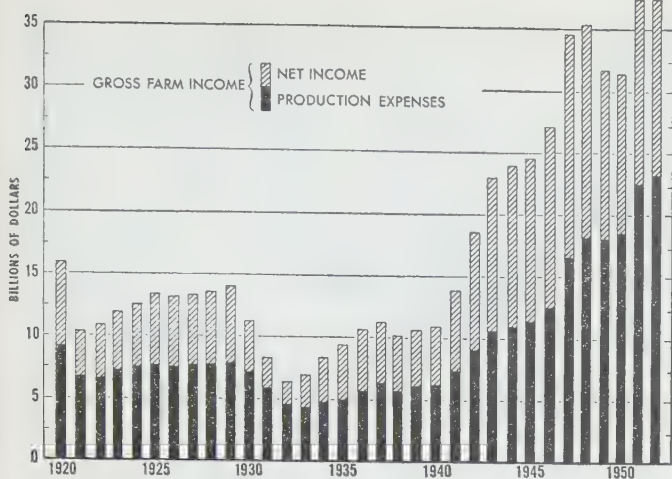
†Book value total investment as of June 30, 1951, including loans approved.

loss for the year was less than one-sixth as large as the \$345,599,000 of 1950-51. Investment in supported commodities in June 1952 totalled \$1,437,346,000, compared with \$1,766,784,000 a year earlier. Investigations were carried out during the year of reported scandals, involving perhaps \$10,000,000 of the total inventory. Late in 1952 it appeared that the CCC holding of wheat in June 1953 might be a record, valued at about \$1,000,000,000.

Loans or purchase agreements had been negotiated with the CCC on 262,000,000 bu. by Sept. 15, compared with 121,000,000 bu. through Sept. 1951.

Legislation.—In the legislative field, considerable attention was given to grain storage scandals and reconsideration of the politics of grain storage and the presidential campaign of 1948. Farm legislation, existing or prospective, did not become a major matter of difference in the 1952 campaign, both candidates essentially endorsing existing price support laws.

Though bills calling for farm price supports as high as 100% of parity were introduced and the secretary of agriculture urged congress to end the sliding scale of price supports, while others saw little need for continuing supports during favourable economic periods, the end result was a measure, signed by the president, which included three major provisions: one delayed until Dec. 31, 1954, any shift to the so-called



GROSS FARM INCOME: net income and production expenses of U.S. farm operators, 1920-52, including government payments beginning in 1933. Compiled by the U.S. bureau of agricultural economics. Data on 1952 are tentative estimates

"modernized" parity formula for the six basic crops which was established in the Agricultural act of 1949; another delayed through 1954 the sliding scale of supports; and a third provided supports for long-staple cotton on a basis comparable with that given upland types.

Land Reform.—Land reform, meaning rather different things in different places at different times, received much more than academic attention in 1952. Besides committee attention, there were some major action programs.

After King Farouk had been swept from his Egyptian throne on July 26, 1952, agrarian reform became the order of the day. A plan, sometimes referred to as General Naguib's plan, and drafted by a group of army officers holding power, was endorsed by Premier Aly Maher and presented to the parliament. In essence the plan called for reducing the holdings of single individuals or companies to a maximum of 200 ac. each. The excess expropriated lands would be paid for, but in 30-yr. government bonds and at prices related to the land's low pre-World War II value, at ten times the rental value. The bonds would be non-negotiable and bear 3% interest. Such lands would be distributed to peasants, whether labourers or operators, holding less than five acres, and they in turn would pay the government for the lands over a 30-yr. period at the purchase price paid to the landlord, plus 15% to meet the costs of acquisition and distribution. Meanwhile, the peasants would be assisted by low-interest loans and newly organized farmer co-operatives. Distribution of a total of 700,000 ac. in two- to five-acre plots to about 140,000 peasants would touch directly only one-tenth of the estimated 1,500,000 landless. Orchards would be an exception as to size and would be up to 20 ac. in plot size—only graduates of technical or agricultural institutes would be eligible for the orchards. The act went beyond fundamental land redistribution—it required a 50-50 division of net profits between landlord and tenant. There was provision for regulating the wages of farm labourers—a provision which appeared to some likely to raise farm wages about 25% in the first year.

All owners of five acres or less were required to become members of co-operative associations which would buy, sell and collect land payments among other things—these co-operatives would operate under state-appointed managers and would require establishing about 4,000 co-operatives and training most of the required managers.

Meanwhile, in 1951 in Iran the shah began disposing of his holdings, and by Aug. 1952 about 19,500 ac. had been divided

among more than 800 peasants, the farms ranging from 14.5 ac. to 21 ac. each. Land distribution began on an experimental basis with the lands of 12 villages of the 17,000-ac. Veramin estate, imperial lands not far from Tehran. Scheduled to be distributed over the next 20 years were lands in 2,160 villages on the imperial estates—villages which in general were larger in terms of land and population than is average for Iran.

As planned, payment by the peasants for the land would be made over a 25-yr. period at 20% of its value, payments to go to a co-operative bank which would, in addition to lending functions, be charged with developing village facilities as well as with those of production and marketing. A period of at least five years of guidance under trained supervisors would be provided the new independent peasant landowners.

Premier Mohammed Mossadegh, who had requested and been given a broad grant of power for a six-month period (Aug. 1952 to Feb. 1953), decreed that the peasants must receive an extra 10% of the crops and profits and that landowners must, in addition, deposit another 10% of the income to aid needy farmers. The administration of this edict moved forward rapidly with an order on Aug. 18 from Premier Mossadegh to district and local officials giving them only 15 days (under penalty of discharge) to form village councils and to proceed to force landlords to return the specified 20% of their share of the harvest, that share to be divided equally between the peasants and the councils.

Drought and Famine.—In spite of a comparatively favourable over-all world food situation in 1952, drought and hunger, even stark famine, were more prevalent than since the immediate post-World War II years. Record high temperatures and drought did damage estimated at many millions of dollars in the south of the U.S. The King ranch in Texas experienced the worst drought in its 99-yr. history.

In Asia several areas reported famine. Hunan province, an important rice-growing area of China, Szechwan province in the interior, Kansu and Shensi in the northwest, Shantung and even Tibet (as a result of food seizures by the Chinese army), reported famine, major or minor. India, in spite of large wheat imports in 1951 and early 1952 from the U.S. and elsewhere, reported 20,000,000 persons suffering acute distress because of crop failure in Madras, Bengal, Uttar Pradesh and Rajasthan states. Floods from the delayed monsoon swept away villages, and locusts invaded about 100,000 sq.mi. of India and Pakistan.

Though Argentina and South Africa were making substantial recovery from their droughts of 1950-51, their southern hemisphere neighbour, Australia, had serious midwinter drought in its northern cattle country.

In Yugoslavia (and probably in some other eastern European areas) renewed drought cut short recovery, reduced the important corn crop by nearly one-half and resulted in further assistance to that country by the U.S., U.K. and France.

International action, partly through the Food and Agricultural organization of the United Nations, was taken in the middle east to combat a destructive plague of desert locusts. Even the U.S.S.R. assisted in Iran as did the U.S. through the Point Four program of the Technical Cooperation administration.

Emergency measures were taken in Brazil to aid migrants driven south by famine from the drought-stricken northeast, especially the state of Ceará.

Other Countries.—World food supplies in 1952 reached a new high level since World War II. This encouraging situation came about primarily because of record or near-record production in North America along with very substantial production in western Europe. It was primarily the result of favourable weather plus improved productivity on nearly fixed acreages under improved technology, fertilization, etc. Such abundant production,

particularly in North America, further distorted the world food supply-and-demand picture by adding abundance where production was already in surplus, thus creating a reserve of food somewhere in the world for those who would eat more, but at the same time tightening the dilemma of how those who needed the food could increase their productivity and effective demand. There was, as might be expected, some growth in protectionism.

Table VI.—World Food Production by Commodities and by Areas, Compared with pre-World War II

Food Commodity	Per cent of prewar						
	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52*	1952-53*
Bread grains	94	96	102	101	104	104	109
Rice	92	93	97	98	102	101	100
Coarse grains	104	97	110	104	102	100	104
Fats and oils	85	88	94	100	100	104	106
Sugar	90	92	108	106	120	126	130
Meat	94	93	94	97	99	104	107
Dairy products	88	87	90	95	97	100	99
Potatoes	84	83	105	96	101	91	92
Area							
Far east	90	92	95	96	97	95	93
Europe (excluding the U.S.S.R.)	76	79	89	93	97	96	100
U.S. and Canada	135	128	138	133	134	138	141
Latin America	114	114	118	118	120	118	121
Australia and New Zealand	96	109	106	107	108	105	102
Africa and near east	—	101	116	117	119	121	125
World average (excluding the U.S.S.R.)	95	97	104	105	109	110	112

*Preliminary estimate.

A record bread grain crop, including 7,150,000,000 bu. of wheat, did much to compensate for a decline to 639,000,000 bu. from 816,000,000 bu. the previous year in the estimated wheat stocks of the principal exporting countries. Feed grain crops were good, though not excellent; corn (maize) was the second largest crop on record. World supplies of fats and oils were much eased. Cattle, hogs and sheep apparently were at new record numbers. Milk and egg production appeared to have declined slightly. Cotton production declined moderately, but some types of tobacco reached new levels.

Canada.—Canada contributed more than its usual share to the world's food in 1952. About 200,000,000 bu. of the grain crop of 1951, which could not be harvested in late 1951 because winter came very early, was recovered without serious damage during a dry spring. Then on an acreage only modestly larger than that of 1951, a record wheat crop of 688,000,000 bu. was produced, compared with the large crop of 552,657,000 bu. in 1951. Feed grain crops also were favourable, and carry-over stocks from previous years amounted to 212,975,000 bu. of wheat, compared with 189,203,000 bu. in 1951 and an average for the previous decade of 256,517,000 bu. (record in 1943 was 595,000,000 bu.). Oat stocks increased to 104,897,000 bu. from 95,177,000 bu. in 1951 and an average of 72,652,000 bu. Barley stocks were a record 76,938,000 bu. compared with 53,496,000 bu. in 1951 and an average for 1941-50 of 30,610,000 bu. Even rye was 7,676,000 bu., compared with 3,299,000 bu. in 1951 and 5,193,000 bu. for 1941-50. The value of the 1952 crop exceeded the record value of \$1,977,105,000 placed on the grain crops of 1951, of which wheat accounted for about one-third.

Latin America and the Southern Hemisphere.—Outstanding agricultural events in Latin America in 1952 included a record Cuban sugar crop of 7,900,000 tons. Argentina, normally one of the four major wheat exporters, plagued by drought and an apparently somewhat disorganized agricultural economy, imported wheat from North America. Argentina, also normally a major meat exporter, but with cattle and hogs severely reduced by more than one year of drought, ordered one meatless day per week in all public eating places. Brazil inaugurated official support for cotton and coffee at levels equal to or above existing world prices. The Rockefeller foundation extended its agricultural work in Mexico to include improvement of livestock and poultry. Cattle, milk and wheat all suffered from drought



STUDENTS examining pollen and studying growth in rice plants at Cuttack in Orissa, India, site of a rice hybridization project sponsored by the Food and Agriculture organization for improving yields

in Australia; South Africa, however, appeared to be recovering.

Western Europe.—About 16,000,000 farms and as many, perhaps, as 78,000,000 people are included in the agricultural sector of the economy of western Europe. In spite of some damage from hot, dry weather, total agricultural output, about 12% higher than before World War II, brought calories per person nearly to the prewar level of 2,870, with also a better balance in the diet than in the early postwar years. Yet the area had to import fully one-third of its food.

In France, prices in early autumn were rolled back moderately in an effort to halt inflation. The new commercial agreement with Yugoslavia included agricultural products. Cattle losses from a serious epidemic of foot-and-mouth disease were estimated in value as high as 100,000,000,000 fr. Rationing of food was reported as abolished in Spain in June, that of oil and bread having been previously lifted.

The United Kingdom situation was particularly interesting under the new government. A good number of curbs on foods were relaxed or abolished, most notably that on tea. Subsidies on foods were slashed, beginning in March, reducing them over-all 38% or about £160,000,000 by the end of 1952 to an annual rate of about £250,000,000. The cost-of-living index fell a point in August for the first time in two years—mostly because potatoes and apples were cheaper. But the rise from an index of 132 in January to 137 in August was almost entirely the result of the higher cost of food. The second instalment of subsidy cuts was due in October—it would add another 4d. to the weekly cost of one person's rations—a total addition of 1s. 4½d., compared with 1s. 6d. forecast by the year end.

Higher prices were agreed upon for several foods imported into the United Kingdom: Australian lamb and beef were higher; New Zealand meat was up an average of 12½%; Australia, New Zealand and Denmark were to get 7½% more for butter. Bacon

was to be slightly cheaper—contracted from Denmark at 252s. 6d. per hundredweight, compared with 262s. 5d. a year before—cooked ham was derationed at a controlled price of 8s. per pound compared with 12s. for canned ham. In an effort to close the dollar gap, raw material imports were cut, wheat escaped but not feeding stuffs nor cotton which for the first seven months of 1952 was £91,240,000, compared with £151,159,000 for the same period in 1951.

The Irish government removed the last of its food subsidies in July and ended rationing. Some prices increased about 50%.

Eastern Europe and the U.S.S.R.—The amount of damage to crops caused by drought in some parts of this large area was unclear, but in Yugoslavia crops suffered to a degree requiring new aid, and much of the Danube basin appeared to be somewhat similarly afflicted. In the U.S.S.R. itself, G. M. Malenkov in his October report to the 19th All-Union Communist Party congress indicated the year's grain crop at 8,000,000,000 poods, or about 130,000,000 metric tons, and perhaps 9,000,000 tons more than the rather small crop of 1951. Sugar beets and cotton were reported as larger than the 1951 crops of 27,000,000 tons for the former and 3,750,000 tons for the latter. Individually owned animals were believed to have declined in number; collections were apparently difficult, and still food prices were reported as having been cut by 10% to 30% in March. Unlike the two previous years in each of which the U.S.S.R. agreed to sell the United Kingdom 800,000 tons of grains, in 1952 the arrangement, announced in October, was for only 200,000 tons, mostly feed grains.

Middle East.—Some of this area harvested splendid crops—Turkey's record wheat crop provided a large surplus for export. Israel's food outlook was reported as improved with rising food costs curbed. A large crop was harvested in the northern Negev.

Asia.—Japan apparently had a good crop in 1952. Tibet reduced inflation, especially the price of barley, by a ban in the largest cities on the manufacture and sale of liquor brewed from barley. The rice crop was apparently a reasonably good one, but rice for export to the seriously deficient areas did not increase much. Ceylon was using modern mechanical equipment to clear land; 40,000 ac. of new rice lands were brought under irrigation. Twelve international farm experts were sent to Korea by the Food and Agriculture organization and the U.N. Korean Reconstruction agency to develop a five-year agricultural rehabilitation program.

International Agricultural Organization.—The Food and Agriculture organization continued to operate actively from Rome, It., during the year. The council of the F.A.O. met in June and approved plans for a multibillion-dollar world food reserve against drought and disaster.

The 1950 world census of agriculture, the initial planning for which began in 1945 and 1946, slowly approached fruition. As of about mid-1952, 78 countries and territories had taken a census of agriculture more or less within the proposed framework. Sixteen more were expected to take such a census in the near future. Preliminary census results from 43 countries were available. Publication of final results was planned for the second half of 1953. Sixteen European nations considered plans for a proposed European "farm pool" to increase exchange of agricultural products.

The International Wheat agreement proceeded into its fourth and final year with guaranteed quantities of about 581,000,000 bu. per year being practically all provided and taken up. But in spite of such performance there was growing concern regarding its prospects of being extended or renewed, primarily because of difference, perhaps wide difference, of opinion between exporting and importing countries as to an equitable range of

prices. The operations during recent years at maximum prices, provided in the existing agreement, represented rather heavy subsidy by exporting countries to importing countries.

The European Confederation of Agriculture held its fourth general assembly at Wiesbaden, Ger., in September. Fifty-five countries were represented at the Sixth International Grasslands congress at Pennsylvania State college, State College, Pa., in August. The International Farm Economists met at East Lansing, Mich. (*See also AGRICULTURAL RESEARCH ADMINISTRATION; BUDGET, NATIONAL; CENSUS DATA, U.S.; CHEMURGY; FRUIT; HORTICULTURE; IRRIGATION; LIVESTOCK; METEOROLOGY; PRICES; SOIL EROSION AND SOIL CONSERVATION; VEGETABLES; etc.; and also under principal crops.*) (J. K. R.)

Agriculture, U.S. Department of: *see* GOVERNMENT DEPARTMENTS AND BUREAUS, U.S.

Aircraft Manufacture. Production of military aircraft in the United States reached post-World War II record levels in 1952, as the nation's air rearmament program continued to accelerate the efforts of the aircraft manufacturing industry.

Military production was expected to total about 9,000 planes of all types by the end of the year—more than double the 4,300 military aircraft built in 1951—constituting more than 92% of all air-frame weight produced during 1952 by U.S. manufacturers and about 89% of their total sales.

The monthly output of military planes reached approximately 900 planes in September. Although several major strikes hampered production in early fall, deliveries were scheduled to reach an anticipated peak of 1,000 to 1,100 military planes per month by the end of the year.

This planned level of production obviously did not represent the maximum output that could have been achieved under all-out mobilization. It was, however, the peak called for under the revised production schedules of the air power build-up. Budgetary limitations forced a downward revision in aircraft production schedules early in 1952 which postponed achievement of the 143-wing air force and a proportionately expanded naval air arm from mid-1954 to late 1955.

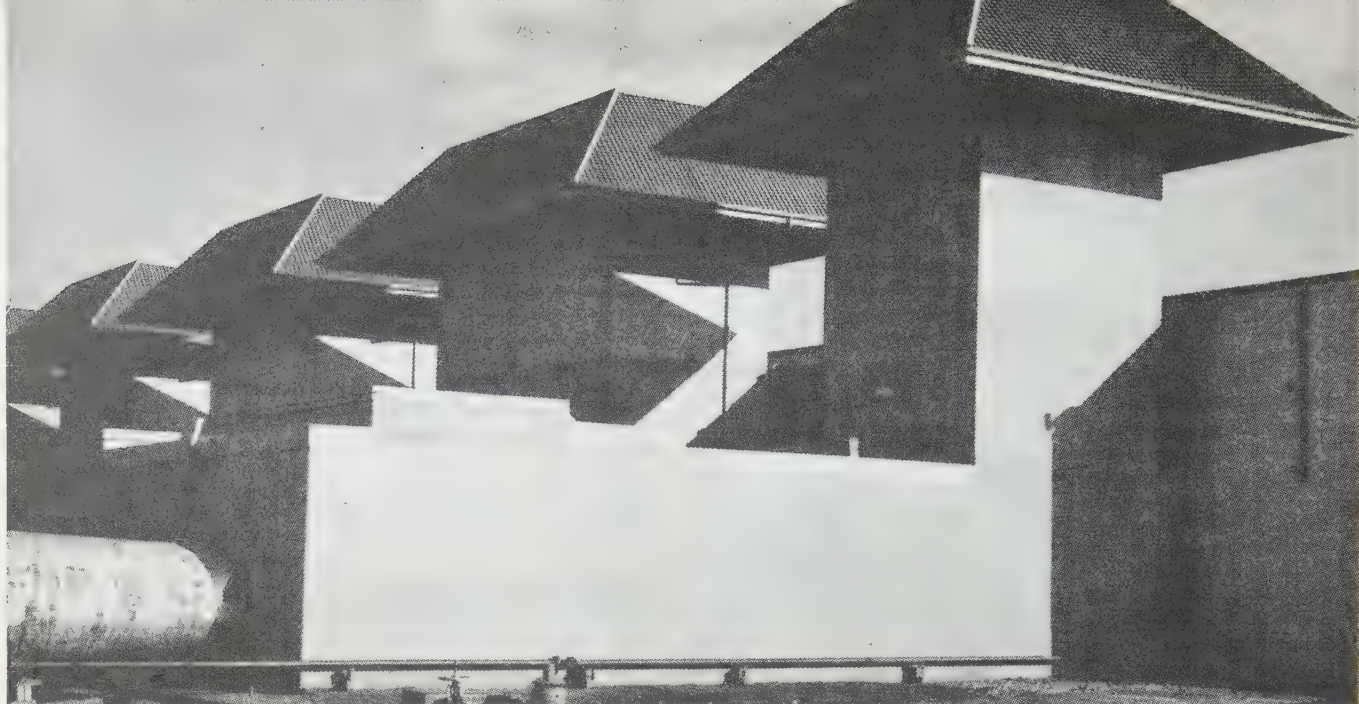
Despite this so-called "aircraft production stretch-out" in Jan. 1952, however, deliveries of military planes continued to increase throughout the year toward a unit peak to be reached in December. Output, in terms of air-frame weight, was expected to rise for several months after December.

Significant was the fact that the first military planes ordered after the outbreak of hostilities in Korea rolled off production lines in mid-1952. Delivery of these planes—which were production models in 1950, the year the war started—reflected the long lead-time required for production of modern, high-performance aircraft.

By the end of 1952, however, the aircraft industry had virtually completed the initial "tooling-up" phase of the mobilization effort. It had assembled most of the machines and manpower, and had created the materials and component pipe lines necessary to meet established production schedules.

A planned expansion of the industry's production base, designed to facilitate rapid achievement of additional production in event of all-out war, was also completed in large measure during 1952. The major emphasis of this program was centred on the establishment of second sources of production for air frames, engines, propellers, plane parts and components.

Appropriations in excess of \$16,200,000,000 were provided for aircraft procurement during fiscal 1952 (July 1, 1951, through June 30, 1952) and in excess of \$16,600,000,000 in fiscal 1953. With fiscal 1951 appropriations, the three-year total



MASSIVE CONCRETE STRUCTURES for reducing the roar of jet engines being tested at a plant in Lockland, O. They were built to protect employees and near-by residents from what had been measured as the loudest industrial noise

exceeded \$42,900,000,000.

Especially important in 1952 was the fact that military funds earmarked for research and development were increased substantially over preceding years, providing for intensified work in developing supersonic aircraft, guided missiles, new armament and more powerful engines.

Although military production dominated the year's aircraft manufacturing effort, the output of private and commercial planes also showed substantial increases in 1952.

Builders of commercial transport planes reported an all-time high backlog in July 1952. In that month, they had orders from U.S. and foreign air lines for 456 multiengined transport aircraft—more than a third as many as were then operated by U.S. air lines.

This record backlog represented approximately 21,000,000 lb. of air liners (in air-frame weight) with a total sales value of about \$473,000,000. The industry had delivered 103 commercial transport planes through July and was expected to deliver 97 additional ones by the end of the year.

During 1952, several major U.S. air-frame manufacturers completed preliminary designs on jet-engined transport aircraft. Production actually was under way on the military version of a turboprop-powered transport-type plane which also had commercial air line potentialities.

Production of lighter utility-type aircraft for civil use was expected to exceed 3,100 units for the year with a sales value of about \$22,000,000. In total units, this was about 800 more light aircraft than were built (for civil use) in 1951. The light-plane industry had delivered 2,365 aircraft by the end of September.

The tremendous growth in rotary-wing aircraft activity that followed the advent of war in Korea continued in 1952. Several hundred helicopters were produced during the year (almost entirely for military services), and the backlog of unfilled orders reached \$541,000,000 compared with the 1951 backlog of about \$500,000,000.

With mounting orders for both military and civil aircraft, the sales volume of the 15 largest air-frame, engine and propeller companies was expected to reach \$5,000,000,000 in 1952, almost double the \$2,605,000,000 figure of 1951. These 15

companies were expected, however, to average approximately the same percentage of profits to sales as in 1951—2.1% compared with slightly more than 2% the previous year, which was less than half the national average. Relative low-profit margins for the aircraft industry, compared with the average for all U.S. manufacturing industries, was attributed in part to government price renegotiation and redetermination policies, as well as to the excess profits tax, the effect of strikes in both primary and component manufacturing establishments, rising wage rates, increased costs of materials and increased costs of hiring and training new employees.

Employment in the industry continued an upward climb throughout the year, although hiring dropped to an average of about 9,000 per month during the last six months of the year compared with about 16,500 per month during the preceding year and a half. This tapering-off in employment resulted from the "stretch-out" of aircraft production goals during the early part of the year.

At midyear, employment in the aircraft and parts industry itself stood at approximately 611,000 and was expected to reach 666,000 in Dec. 1952. This figure, however, did not include the employment requirements of new plants coming into operation after July 1952 or plants shifting to aircraft production in that period. With these additional facilities in production, employment was expected to exceed 700,000 by the year's end, and 835,000 by 1954.

The gravest long-range manpower problem faced by the aircraft industry in 1952 was the growing shortage of engineers and trained technicians. Constant demands for greater performance in military planes for the nation's rearmament required that 1 out of every 11 employees be engineering personnel. This was double the engineering manpower requirement during World War II. A steady decline in graduations of engineers from universities had made the problem more acute. (See also AVIATION, CIVIL; AVIATION, MILITARY; JET PROPULSION; MUNITIONS OF WAR.)

(DE. C. R.)

Air Crashes: see DISASTERS.

Air Forces of the World: see AVIATION, MILITARY.

Air Mail: see POST OFFICE.

Airports and Flying Fields: see CIVIL AERONAUTICS ADMINISTRATION.

Air Races and Records. A 48-year-old aeroplane designer from Oshkosh, Wis., won the major award at the International Air exposition sponsored by the Aero club of Michigan at the Detroit-Wayne county airport. Zooming around the 37½-mi., six-pylon course at an average speed of 197.29 m.p.h., Steve Wittman triumphed over five top pilots in the Continental Motors Trophy race. John Paul Jones of Van Nuys, Calif., victor the previous two years, was second in 1952 with a speed of 197.16 m.p.h.

Wittman gained \$2,700 for his victory in the final race on Sept. 1 in addition to \$1,500 he had won in an elimination heat when he set a record of 198.24 m.p.h. for the Continental race. The winner flew a needle-nosed 85-h.p. midget plane. Jones had established himself as the favourite when he led all qualifiers on Aug. 29, covering ten laps around a 2½-mi. octagonal layout at 203.16 m.p.h. Meet officials announced that it was the first time a midget plane had exceeded 200 m.p.h. over such a course.

Exhibitions by jet planes and army bombers were other highlights of the Labor day week-end show, one of the feature attractions for visitors being the six-jet Boeing B-47 Stratojet medium bomber, which flew a 2,025-mi. course to Detroit from the Edwards air force base at Muroc, Calif., in 3 hr. 18 min. The plane had a ground speed of 615 m.p.h. and its commander was Maj. Orville A. Maki of Ironwood, Mich. Another lure to the crowds was a ten-engined B-36 bomber that flew to the field from Spokane, Wash., via the north pole in 34 hr. 46 min.

More than 40 entrants started in the sixth annual transcontinental "Powder Puff derby" from Santa Ana, Calif., to Teterboro, N.J., airport on July 4. The 2,700-mi. race is on a handicap basis because of the differing speeds of the planes. Shirley Blocki and her copilot Martha R. Baechle, both of Long Beach, Calif., flying a Cessna 140, were declared the winners. Their elapsed time was announced as 22 hr. 38 min. Mrs. Isabelle McCrae and Mrs. Betty McNeil of Lemon Grove, Calif., were the first to land, after 17½ hr. Only 19 of the starting planes finished.

Betty Haas of Scarsdale, N.Y., triumphed in the All-Women's International race from St. Augustine, Fla., to Welland, Ont.,

landing on July 5. Miss Haas finished three minutes ahead of Mrs. Elaine Mogelvang of Lockhart, Fla.

Lieut. Com. Jack Becker, a Jacksonville, Fla., navy pilot, captured the unlimited-horsepower closed-course race that featured the Greater Miami, Fla., Air show. After annexing the opening heat at 219 m.p.h., Becker was the only one to finish the event the second day when rain and engine troubles forced out all his rivals.

Britain's greatest aerial exhibition since World War II resulted in the worst disaster in air show history when a supersonic fighter, a DH 110, disintegrated before the eyes of about 130,000 onlookers at Farnborough Sept. 6, killing the pilot, his aide and 25 spectators. Sixty-three other persons were injured. Just before the plane exploded it had plunged downward eight miles at more than 700 m.p.h. in a dive faster than sound travels. John Derry, 30-year-old ace test pilot, and Tony Richards, flight test observer for the de Havilland Aircraft company, were the crewmen. (See also AVIATION, MILITARY.)

(T. V. H.)

Air Travel: see AVIATION, CIVIL.

A.L.A.: see AMERICAN LIBRARY ASSOCIATION.

Alabama. Alabama, the "heart of Dixie," was admitted to the union as the 22nd state on Dec. 14, 1819. It is bounded on the north by Tennessee, on the east by Georgia, on the south by Florida and the Gulf of Mexico and on the west by Mississippi. Called the "Cotton state" or the "Yellow-Hammer state," its area includes 51,078 sq.mi. of land and 531 sq.mi. of water.

The 1950 census gave Alabama a population of 3,061,743, compared with 2,832,961 in 1940. Of Alabama's total population, 43.8% is defined as urban and 56.2% as rural. Birmingham, with 326,037 people, is the largest city. Mobile is second with 129,009. Montgomery, the state capital, has 106,525 citizens. Other large cities include Gadsden, 55,725; Tuscaloosa, 46,396; Bessemer, 28,445; Anniston, 31,066; Dothan, 21,584; Decatur, 19,974; Huntsville, 16,437; Phenix City, 23,305; Selma, 22,840.

The principal elective officials named in 1951 to serve four years were: governor, Gordon S. Persons; lieutenant governor, James B. Allen; attorney general, Silas Coma Garrett, III; state auditor, John Brandon; commissioner of agriculture and industries, Frank M. Stewart; secretary of state, Mrs. Agnes Baggett; state treasurer, Sibyl Pool; state superintendent of education, W. J. Terry.

History.—Governor Persons took office on Jan. 16, 1951. One of the first of his actions was to abolish the use of the lash in Alabama's 35 correctional institutions. Among other accomplishments, he succeeded in increasing the 1% sales tax to 3%, the revenue to go to education; obtained a \$3 car licence tag, effective in 1953; put through a \$25,000,000 road bond issue in a state vote; and reorganized the state pardon-paroles board and the department of corrections and institutions. On Dec. 11, 1951, Alabama voters rejected a plan to reapportion the state legislature, with each of the 67 counties to have a senator, instead of the existing 35 upper-house members. A new voter qualification law was approved by 369 votes, in a ballot that attracted 120,345 voters. Although the new voter registration amendment made no mention of race, creed or colour, many contended that it was aimed at Negro voters. It required prospective voters to be of "good character," to fill out a written questionnaire and to sign an anti-Communist oath. The various county boards of registrars were to administer the law.

Education.—During the academic year 1950-51 (ending June 30, 1951) the total number of public schools in Alabama was 3,258. Total enrolment was 681,007. Of this number, 443,255 were enrolled in elementary schools and 237,752 in high schools. There were 13,332 elementary school teachers and 8,908 high school teachers. There were 9 state-supported institutions of higher learning. In the school year of 1951 there were 32,096 students



FIRST HELICOPTERS to cross the Atlantic, landing at Prestwick airport, Scot., on July 31, 1952. The U.S. air force craft took off from Westover, Mass., on July 15 but were delayed at stopover points by bad weather



REFLECTIONS in a pool of oil near Pollard, Ala., the first flowing well in the state's history. The gusher shot up early in 1952

enrolled on college campuses and a teaching staff of 1,849. Of these, 8,686 were Negroes, with teachers numbering 192. The total on- and off-campus enrolment including attendance at the university centres was 57,206, with 2,391 teachers. Of this enrolment, 9,547 were Negroes, with 256 Negro teachers. There were 10 denominational and private colleges, with an approximate enrolment of 6,778.

Social Insurance and Assistance, Public Welfare and Related Programs.—Amounts spent for public assistance categories in Alabama during the 1951-52 fiscal year (ending Sept. 30, 1952) and average number of recipients (in parentheses) during 1951-52 were as follows: old-age assistance, \$19,101,079.17 (74,834); aid to the blind, \$439,723 (1,518); aid to the handicapped, \$2,305,812.73 (8,604); aid to dependent children, \$7,610,767.63 (18,170); aid to children in foster care, \$181,545.23 (585); temporary aid, \$36,634 (133), for a total of \$29,675,561.76 for the fiscal year. Alabama's prison population on Oct. 1, 1952, the end of the fiscal year, was 4,471.

Total expenditures for the department of corrections and institutions were \$3,613,390.07.

Communications.—The state highway system included 7,805 mi. of roads. The county system had 52,641 mi. and there were approximately 3,500 mi. of municipal streets. For 1951-52 state highway department expenditures for roads were \$31,081,988.29. This included \$22,977,262.64 for construction and \$8,104,725.65 for maintenance. The estimated railroad mileage was 5,400 mi. There were 477,536 telephones in the state during the year. There were 67 public, commercial and private airports, 2 government fields (Tennessee Valley authority) and 18 that belonged to the air force and navy. Included were 1,394 mi. of controlled airways and 1,903 mi. of off-airway carrier routes.

Banking and Finance.—On June 30, 1952, there were in Alabama 158 state banks and 1 branch, with total deposits of \$320,355,573.33. Total resources were estimated at \$351,179,383.49. There were 71 national banks, 25 branches and 4 facilities, which had total deposits of \$1,009,625,000 and total resources of \$1,093,000,000. On Dec. 31, 1951, a total of 8 Alabama savings and loan associations had resources of \$13,943,560.16. On the same date, there were 71 credit unions with total resources of \$9,609,532.94.

For the year Oct. 1, 1950-Sept. 30, 1951, Alabama's net receipts from

Table I.—Leading Agricultural Products of Alabama

	Indicated 1952	1951	Average 1941-50
Cotton, bales	825,000	909,000	899,000
Corn, bu.	27,071,000	46,303,000	46,470,000
Peanuts, lb.	179,200,000	205,620,000	319,829,000
Hay, tons	487,000	556,000	739,000
Sweet potatoes, bu.	1,300,000	1,365,000	4,832,000
Irish potatoes, bu.	4,118,000	4,216,000	4,047,000
Oats, bu.	2,772,000	2,052,000	4,650,000
Soybeans, bu.	1,672,000	1,584,000	623,000
Sorghum grain, bu.	224,000	323,000	461,000
Peaches, bu.	585,000	256,000	1,036,000
Pecans, lb.	14,000,000	26,000,000	12,203,000

Source: U.S. Department of Agriculture.

all sources totalled \$249,825,654.98. Gross disbursements for the same period were \$359,243,548.75. Net disbursements were \$254,525,317.34.

Agriculture.—Alabama's total principal crop value in 1951 (exclusive of livestock, swine and poultry) was \$336,300,000, an increase of 15% over 1950. The cotton crop (lint and seed) grossed \$193,000,000 compared with \$133,000,000 in 1950; peanuts grossed \$19,000,000 in 1951. The estimated over-all value of Alabama agricultural production ranged from \$425,000,000 to \$450,000,000. Income to Alabama farmers from cattle sales was expected to be about \$50,000,000, compared with \$38,000,000 for 1950; poultry, \$30,000,000; dairy products, about \$26,000,000.

Manufacturing.—In 1951, 5,096 Alabama manufacturing establishments employed 229,000 persons. Income from pay rolls and profits was \$951,000,000. Sales or receipts totalled \$2,721,000,000. The primary metals industry employed 47,000 workers with sales or receipts totalling \$714,000,000; textiles employed 55,000 workers with sales or receipts totalling \$582,000,000; lumber, 42,000 workers with sales or receipts, \$218,000,000; food products, 15,000 workers with sales or receipts, \$305,000,000. (B. Br.)

Mineral Production.—Table II shows the revised figures on tonnage and value of mineral commodities produced in Alabama in 1949 and 1950, data for 1951 not being available, and lists all items having a value in

Table II.—Mineral Production of Alabama
(In short tons, except as noted)

Mineral	1950		1949	
	Quantity	Value	Quantity	Value
Cement (bbl.)	10,575,000	\$23,176,000	9,394,000	\$20,321,000
Clays	993,000	1,045,000	857,000	934,000
Coal	14,422,000	88,343,000	12,934,000	79,188,000
Coke*	5,833,000	64,332,000	5,161,000	55,493,000
Ferroadloys*	165,000	23,403,000	99,000	14,276,000
Iron ore	8,290,000	28,933,000	8,191,000	27,553,000
Iron, pig*	4,307,000	167,984,000	3,664,000	131,162,000
Lime	389,000	3,578,000	359,000	3,203,000
Petroleum (bbl.)	735,000	†	462,000	†
Sand and gravel	3,616,000	2,464,000	3,297,000	2,268,000
Stone	2,588,000	6,038,000	2,637,000	6,040,000
Other minerals . . . . .	...	5,398,000	...	4,398,000
Total		\$158,975,000		\$143,905,000

*Values for processed materials are not included in the totals.

†Value included with other minerals.

excess of \$100,000. Alabama ranks 3rd among the states as a producer of iron ore and bauxite and stands 18th in the value of output, with 1.34% of the U.S. total.

Åland Islands: see FINLAND.

Alaska. Alaska, the northernmost territory of the United States, is separated from Siberian U.S.S.R. by the Bering strait. The boundary line follows the international date line between Big Diomed Island, which is soviet soil and in the eastern hemisphere, and Little Diomed Island, which is on the U.S. side in the western hemisphere. These islands are about three miles apart. Alaska has an area of 586,400 sq.mi. Its population according to the 1950 census was 128,643, compared with 72,524 in 1940. The gain of 77.4% in the ten-year period did not include the military, naval or coast guard personnel stationed in the territory. On the basis of figures determined by the Alaska Development board and the continuing high influx of civilians and military personnel, the population in 1952 was conservatively estimated at 160,000. The largest town is Anchorage, with a 1950 population of 11,254. Other towns and their 1950 populations were as follows: Fairbanks (5,771); Juneau (5,596); Ketchikan (5,305); Eastchester (3,096); Seward (2,114); Sitka (1,985); Nome (1,876); Kodiak (1,710); Petersburg (1,619); Wrangell (1,263).

The Aleutian Islands, a chain of small islands extending about 1,200 mi. westward from the extremity of the Alaskan peninsula, constitute part of the territory of Alaska.

History.—The most important event occurring in Alaska in 1952 was the announcement by the Aluminum Company of America of plans to construct a \$400,000,000 hydroelectric power and aluminum reduction facility in the Taiya valley near Skagway. The construction of the project would be accompanied by the establishment of a new city of 20,000 persons. The Alcoa project, in addition to the \$40,000,000 pulp mill already under construction at Ketchikan and the nearly completed plywood mill at Juneau, promised further stabilization of the economy of southeastern Alaska, previously dependent on the seasonal salmon and halibut fishing industries.

Construction activity continued to reach new highs with defense construction maintaining the lead. Projects looking toward the continued development of the territory were undertaken or further pursued, particularly in housing, road building and airport and harbour improvements. Railroad facilities underwent extensive rehabilitation and construction proceeded on the large hydroelectric installation at Eklutna near Anchorage. A congressional subcommittee held territorial-wide hearings looking toward simplification and clarification of the federal land laws. During the summer, a steamship strike of seven weeks' duration strangled the economic life of the territory and made serious inroads into the construction and tourist industries. On Sept. 7 the Canadian Pacific railroad luxury liner, the "Princess Kathleen," went aground at Lena point near Juneau and sank a few hours later without loss of life.

A statehood bill for Alaska was passed in the U.S. house of representatives in 1951 but failed of passage in the senate in 1952.

Chief officers of the territory in 1952: Ernest Gruening, governor since 1939; Joseph W. Kehoe, secretary of Alaska. Elected by the people: E. L. Bartlett, delegate in congress; Henry Roden, territorial treasurer; Frank A. Metcalf, highway engineer; J. Gerald Williams, attorney general; Henry Benson, commissioner of labour.

Education.—At the close of the 1951-52 school year Alaska had a total elementary and secondary classroom enrolment of 20,936 students and 748 teachers. Total territorial expenditure for the support of the public schools for that period, exclusive of administration and construction costs, was \$2,767,302. The commissioner of education was Everett R. Erickson.

Banking and Finance.—In the fiscal year ending June 30, 1952, territorial tax collections amounted to \$15,100,543, an increase of 34.15% over the previous year. The territorial treasury had a net cash balance of \$9,007,492.13 as of June 30, 1952. Funds of the territory were deposited in the 15 territorial and 5 national banks which had a combined capital of \$2,244,600, net undivided profits of \$1,586,623.89 and total deposits of \$124,270,559.10. The territory had no bonded indebtedness.

Agriculture.—The total value of crop and livestock production in 1952 was \$4,870,960, compared with \$2,186,233 for the previous year. Dairy products accounted for more than half of the agricultural income with livestock, vegetables, poultry products and grains following in that order. The average annual take from fur farming and fur trapping over the past ten years, exclusive of the fur seals taken under treaty regulation, was \$2,378,418.

Fisheries.—Alaska's salmon pack, considered the largest in the world, totalled 3,505,500 cases in 1952 with a value of about \$90,000,000. The halibut, shrimp, crab and cod fishery brought the total value of the sea food pack of the territory up to more than \$110,000,000 for the year.

Mineral Production.—In 1952 a sizeable iron deposit was discovered near Klukwan. During the year several major petroleum producers initiated extensive exploration programs in the territory. (ER. GR.)

The following table shows the tonnage and value of mineral production in Alaska in 1949 and 1950, data for 1951 not being available, and lists all items having values in excess of \$100,000.

Mineral Production of Alaska
(In short tons, except as noted)

Mineral	1950		1949	
	Quantity	Value	Quantity	Value
Coal	412,000	\$3,033,000	434,000	\$3,309,000
Gold (oz.)	289,000	10,125,000	229,000	8,030,000
Sand and gravel	3,050,000	2,377,000	?	*
Tin concentrate	?	170,000	?	115,000
Other minerals . . . . .	...	2,147,000	...	4,095,000
Total		\$17,852,000		\$15,549,000

*Value included with other minerals.

Albania. A people's republic in the western part of the Balkan peninsula, Albania is bounded north and east by Yugoslavia, south by Greece and west by the Adriatic sea. Area: 11,100 sq.mi. Pop.: (1930 census) 1,003,097; (mid-1951 est.) 1,200,000. Language: literary Albanian and two spoken dialects, the Gheg dialect north of the Shkumbi river and the Tosk in the south. Religion: Moslem 65%, Greek Orthodox 23%, Roman Catholic 11%. Chief towns (1949 est.): Tiranë (cap., 40,000); Scutari or Shkodër (30,000); Koritsa or Korçë (28,000); Elbasan (18,000). Chairman of the presidium of the people's assembly in 1952, Omer Nishani; prime minister, minister of foreign affairs and of national defense, Gen. Enver Hoxha.

History.—During 1952 Albania lived through another year of its precarious existence as a soviet satellite state, cut off from the rest of the eastern European bloc, without any important change of its political or economic structure. There was ample evidence that the Communist government was so preoccupied with the maintenance of the regime in power and with the problems arising from the country's isolation that it was unable to make any marked progress toward its main aims—collectivization of agriculture and industrialization. This was borne out during the second congress of the Albanian Workers' (Communist) party held in Tiranë in March and April. The prime minister, General Hoxha, who made the principal speech, declared: "We have to admit that the Two-Year Agricultural plan was not properly organized or carried out. . . . This has resulted in a decrease in the individual production of the peasants." This two-year plan (1949-50) should have been followed by a five-year plan, which was in fact officially inaugurated in 1951, but because of the regime's political instability it was not actually launched until the summer of 1952, leaving the government three and a half years in which to reach its goals. It was not surprising therefore that the Communist party congress was held in an atmosphere of almost unrelieved gloom, or that it was followed by the dismissal of four ministers for inefficiency, including Manush Muftin, deputy premier and member of the Politburo, and Iosip Pashko, minister of state control and secretary of the central committee of the party.

The theme of the country's isolation was underlined by frequent announcements throughout the year about the activities of hostile agents introduced illegally into the country by Albania's neighbours, Greece and Yugoslavia, supported by Great Britain and the United States. The government also complained of continuous frontier violations by Greek and Yugoslav troops, including armed raids on frontier villages.

Meanwhile the U.S.S.R. continued to exploit the Albanian economy to its own advantage without committing itself to Albania's defense. It consistently refused to grant Albania a mutual defense treaty. Nevertheless, although no official information was forthcoming, it became clear that there was a change in emphasis in Soviet-Albanian relations which was also reflected inside the Albanian Communist hierarchy. For the first time the Albanian press referred to the presence of non-Russian technicians in Albanian industries (Bulgarian experts were specifically named), a development which gave rise to the belief that the soviet government considered Albania too isolated and exposed for a large number of soviet engineers and technicians. The soviet minister, D. S. Chuvakhin, was recalled to Moscow, and Tuk Jakova, a former deputy prime minister who had lost his post during the ascendancy of Gen. Mehmet Shehu, the minister of the interior, returned to favour.

No settlement was reached in the dispute between Albania and Great Britain over the Corfu channel mining incident in which 44 British lives were lost in 1947.

(M. MACK.)

Education.—Schools (1949): elementary 1,910, pupils 162,000; higher elementary 145, secondary 20, total pupils 19,140; a teachers' college was opened at Tiranë in 1946; Enver Hoxha announced in Moscow in Oct. 1952 that Albania had five institutions of higher education.

Finance.—Budget (1951 est.): revenue 9,500,000,000 leks, expenditure 9,100,000,000 leks including 3,607,000,000 leks invested in the national economy. Monetary unit: lek with official exchange rates of 12.50 to the rouble and 50 to the U.S. \$1.

Transport and Communications.—Roads (1949): 1,766 mi. Licensed motor vehicles (Dec. 1950): cars 500, commercial 1,240. Railways (1951): c. 81 mi., i.e., normal gauge lines linking Durazzo with Tiranë and Elbasan via Kavajë-Peqin. Radio receiving sets (1950): 40,025.

Agriculture.—Main crops (metric tons, 1947 est.): maize 140,000; wheat 54,000; (1935-39 average): oats 10,300; barley 4,700; olives 17,000; tobacco (1939-41) 2,500. Livestock (1946 est.): sheep 1,548,000; goats 854,000; cattle 345,000; pigs 35,000; horses 50,000; asses 40,000.

Industry.—Crude oil output: (1950) 131,500 metric tons. A textile works was opened at Fier in Nov. 1951 with a planned yearly production of 20,000,000 m. of cotton fabrics. A sugar refinery was completed in 1951 at Malik with a production capacity of 10,000 tons.

Alberta. The most westerly of the three prairie provinces of Canada, Alberta was created by parliament in 1905. Area: 255,285 sq.mi., of which 6,485 sq.mi. are water; pop.: (1951) 939,501. Largest city: the provincial capital, Edmonton (1951) 158,709; metropolitan area, 172,112.

History.—The 57-member legislature wound up its business in April 1952 and Social Credit Premier Ernest C. Manning called an election for Aug. 5. It was hotly contested; the principal issue between the Social Crediters and the Liberals was their stand on the export of natural gas. The Social Crediters decided upon limited export because proven reserves had been established to meet Alberta needs for a minimum of 30 years; the Liberals claimed that export of natural gas would curtail the movement of industry to Alberta. When the returns were in, the Social Crediters had won their fifth straight election victory with 52 seats out of 61 (four new seats came from the 1950 Redistribution act which went into force in 1952). Premier Manning continued to place conservative financing ahead of Social Credit theories, and Alberta continued to enjoy unprecedented prosperity based on the oil and gas boom.

After a two-year investigation, the Alberta health survey committee made 87 recommendations, including the establishment of a complete program of health insurance, expansion of the provincial health department (to include child and maternal health, dental health and industrial hygiene) and subsidies to rural doctors. A special legislative committee made 22 recommendations for improvement of the Alberta workmen's compensation act, including elimination of the waiting period, increase of disability payments and increase of payments to child dependents.

Communication.—In 1951, at a cost of more than \$10,000,000, Alberta completed dirt work and graveling on 949 mi. of highway, surfaced 312 mi. of main highway and rebuilt 327 mi. of main and secondary roads. Plans were announced for five main north-south highways. A new bridge across the Athabasca river at Athabasca was opened June 1952 and stimulated development of the country northward.

Finance.—Bank clearings during 1951 totalled \$2,963,850,000, compared with \$2,626,870,000 for 1950; bank debits were \$6,241,574,500 and \$5,631,919,900 for those respective years.

Agriculture.—Despite the oil and natural gas boom, Alberta's production mainstay continued to be agriculture. Estimated values for 1951 (with 1950 figures in parentheses) were: over-all production, \$752,710,000 (\$561,836,000); grain, 387,613,000 bu. worth \$444,060,000 (250,183,000 bu. and \$301,048,000); fodder crops, 3,661,000 tons worth \$52,704,000 (2,186,000 tons and \$32,995,000); livestock marketings, 478,300 cattle, 82,760 sheep, 958,143 hogs worth \$166,307,000 (or \$13,950,000 more than in 1950); dairy products, \$44,182,000 (\$40,444,000).

Furs and Fisheries.—The 1951 fur crop sold for \$2,530,000, compared with \$1,888,918 for 1950. The 1951 fish harvest totalled 8,399,000 lb. worth \$862,000 (1950: 7,066,750 lb. and \$767,887).

Industry.—During 1951, 15 new industries having a total capital outlay of \$86,500,000 and providing 2,800 jobs were started. There were 750 other major industries in existence, producing in 1951 manufactures worth \$421,750,000 (1950: \$389,200,000). Trade figures for 1951, with 1950 in parentheses, were: wholesale, \$480,000,000 (\$430,000,000); retail, \$831,300,000 (\$747,690,000).

Minerals.—By 1952 Canada had become ninth among the world's oil-producing nations, and Alberta produced 96% of Canada's oil. During 1951 Alberta's wells yielded 45,915,385 bbl. of oil worth \$116,819,581, compared with 27,149,232 bbl. worth \$80,568,178 in 1950. In 1951, 1,179 wells were drilled, of which 763 became producers (1950: 1,009 drillings and 752 producers). A major discovery was reported in the Peace river district; a 711-mi. oil pipe line between Edmonton and Vancouver was under construction; uranium ore was found north of Athabasca lake. Coal production for 1951 totalled 7,661,276 tons, worth \$41,000,000 (1950: 8,118,206 tons; \$41,631,000).

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Alcohol, Industrial. Ethyl alcohol (methanol) continued in ample to surplus supply in 1952, with United States production apparently exceeding the 444,925,011 proof gallons of 1951. Prices declined from approximately 90 cents per gallon at the beginning of the year to about 70 cents for the natural denatured grade in tanks and less for the synthetic product derived in increasing amounts from petroleum.

The quantity of molasses required for this product decreased as production of the synthetic produce expanded. The five-year

chemical plan of the U.S.S.R. called for boosting the production of synthetic ethyl alcohol by 1955 by about 75%, compared with 1950 production. (J. K. R.)

Alcoholic Foundation, Inc. (Alcoholics Anonymous): see SOCIETIES AND ASSOCIATIONS, U.S.

Alcoholic Intoxication: see INTOXICATION, ALCOHOLIC.

Alcoholic Liquor: see BREWING AND BEER; LIQUORS, ALCOHOLIC; WINES.

Aleutian Islands: see ALASKA.

Alexander of Tunis, Harold Rupert Leofric

George Alexander, 1ST EARL, OF ERRIGAL (1891—), British field marshal, was born on Dec. 10. He was educated at Harrow and Sandhurst and commissioned in 1911 in the Irish guards. He served on the western front during World War I, receiving the distinguished service order and the military cross. At the beginning of World War II he commanded the 1st division in France and was responsible for the evacuation of more than 300,000 men of the British expeditionary force from the beaches of Dunkirk. In early 1942 he went to Burma where he was in charge of the retreat from that country. In August of the same year he was appointed commander in chief, middle east, and it was under him that the German and Italian armies were driven out of Libya. In Feb. 1943 he became deputy commander in chief, North Africa, under Gen. Dwight D. Eisenhower and later, in Nov. 1944, supreme Allied commander in the Mediterranean area. On June 4, 1944, Rome was taken by his armies and in May 1945 Field Marshal Alexander, as he then was, signed an armistice with the defeated German commander in Italy. In 1946 he was created a viscount and in the same year took office as governor general of Canada. His term of office as governor general was twice extended, but on Jan. 28, 1952, it was announced that he was to become British minister of defense from March 1. In June he went to Korea and Japan for military discussions. He left Tokyo for the U.S. and Canada on June 18 to confer with Gen. Omar Bradley. Lord Alexander returned to London on June 25.

Alfalfa: see HAY.

Algeria. A French territory of North Africa, Algeria is situated between Morocco (west) and Tunisia (east), with the status of government-general of the French union. Total area: 846,124 sq.mi., administered in two parts: northern Algeria (80,966 sq.mi.), comprising the overseas *départements* of Algiers, Oran and Constantine; and the four territories of southern Algeria (765,158 sq.mi.). Pop.: (1948 census) 8,681,785 including 816,993 (9.4%) in the southern territories; (1951 est.) 8,930,000. Arabs and Berbers, who are Moslem, constitute 86.7% of the population; Europeans (1936) 987,252, mainly Roman Catholic; Jews (1949 est.) 130,000. Chief towns (1948 census): Algiers (cap. 315,210); Oran (256,661); Constantine (118,774); Bône (102,823); Tlemçen (69,668). Governor general in 1952: Roger Léonard.

History.—In 1952 the Algerian assembly expressed its hope for wider economic, administrative and political autonomy, but at the same time asked for further financial help from France.

A French periodical launched a campaign for "the nationalization of the Sahara." This meant that France should have direct control over the Saharan territories, many of which were in fact controlled from Algeria. Protests were voiced in Algiers.

In April the 52 persons accused of plotting against the security of the state (the Blidah conspiracy) were tried by the Algiers court, and demonstrations took place. Messali Hadj,

leader of the extremist Mouvement pour le Triomphe des Libertés Démocratiques, was sentenced to reside under surveillance in France.

The four-year plan, taking account of the increase in population, made considerable provision for the development of agricultural resources and envisaged giving certain workers professional training for jobs in France. The harvest was to a large extent enough for local requirements.

Education.—Schools (1951): pupils, primary 350,000; secondary 24,000; technical 3,000; University of Algiers, students 5,000.

Finance.—Budget (1951-52 est.): balanced at 72,000,000,000 fr. Note circulation (Dec. 1951) 71,000,000,000 fr. Algerian franc=metropolitan franc, with an exchange rate of 350 to the U.S. dollar in 1952.

Foreign Trade.—(1951) Imports 201,126,000,000 fr. (including 151,778,000,000 fr. from France); exports 121,437,000,000 fr. (including 80,266,000,000 fr. to France and 11,600,000,000 fr. to Great Britain). Principal exports: wine, cereals, iron ore, vegetables, citrus fruits, phosphates.

Transport and Communications.—Railways (1950) 4,500 km.; state roads 8,000 km.; secondary roads 26,000 km. Motor vehicles licensed (1950) 173,000. Ships entered (1951): Algiers 2,185; Oran 1,519. Aircraft landed 10,108.

Agriculture.—Main crops (metric tons, 1951): wheat 1,061,000; barley 575,000; oats 152,000; citrus fruits (1950) 250,000; olives (1950) 100,000; figs (1950) 50,000; dates (1950) 20,000; potatoes (1950) 210,000; other vegetables 250,000; tobacco (1950) 19,000; alfalfa grass 250,000; cork 50,000; wine 13,743,000 hl. Livestock: cattle 800,000; sheep 5,300,000; goats 3,200,000; horses (1950) 220,000; mules 230,000; asses 330,000; camels 150,000.

Industry.—Mineral production (metric tons, 1951): coal 250,000; iron ore 2,822,000; phosphates 769,000; zinc 21,000. Industrial production (in metric tons): cement (1951) 448,000; superphosphates (1950) 90,853,000; paper (1950) 12,000,000; pig iron (1950) 5,900,000; copper wire (1950) 3,500,000; matches (million boxes, 1950) 181,000,000; electricity, 665,000,000 kw.hr. (Hu. DE.)

United States.—When congress passed the Alien Registration act of 1940, all aliens living in the United States 30 days or longer were required to be registered and fingerprinted. During the registration period of Aug. 27 to Dec. 26, 1940, 5,009,857 aliens registered. The Internal Security act of 1950 amended the Alien Registration act of 1940, by requiring that every alien resident in the United States must report his address during the first ten days of January of each year. During 1951 approximately 2,365,000 alien reports were received, of which 100,000 were not tabulated because of incomplete information. The 1951 figures were not completely comparable with the 1940 figures since in 1951 only alien residents were required to furnish reports. The seven largest nationality groups who reported in 1951 were: Mexico (324,104); Italy (229,062); Canada (217,397); Poland (213,319); Great Britain (192,723); U.S.S.R. (126,010); and Germany (118,003).

Naturalizations.—The number of naturalizations, which declined rapidly after the peak year in 1944, for the first time took a sharp upward trend in the year ended June 30, 1952, to 88,655 or 33,939 higher than the 54,716 naturalized in the fiscal year 1951. One factor that changed the trend was the immigration of war brides and displaced persons after the termination of World War II. Many of these immigrants had lived in the United States long enough to meet the residence requirements and were becoming eligible for naturalization. Other factors probably accelerated alien interest in naturalization: (1) the military situation in Korea; (2) the alien address program, which reminded aliens of their alien status; and (3) the fact that companies engaged in defense production hired only citizens or aliens who had made a declaration of intention to become a citizen.

Of the 88,655 persons naturalized, 26,920 were naturalized under the general provisions of the nationality laws. Two-thirds of those who received certificates were persons married to citizens. This group, no doubt, included many war brides who had come to the United States since World War II. A total of 1,585 were military naturalizations.

Three-fourths of the 2,163 petitions denied were rejected

because the petitioners withdrew or failed to prosecute the petition. Another principal cause of denial was lack of knowledge and understanding of the fundamentals of the history, principles and form of government of the United States. All except 4 of the 279 certificates of naturalization revoked during the year were initiated by the foreign service of the state department because naturalized citizens became residents of foreign states within five years of naturalization. In 4 cases action was initiated by the immigration and naturalization service because naturalization had been fraudulently or illegally procured. In addition to those persons whose United States citizenship was revoked, there were 3,265 persons who expatriated themselves by affirmative action; 1,186 by voting in a foreign political election or plebiscite; 676 through residence in a foreign state; 622 by naturalization in a foreign state; 370 by serving in the armed forces of a foreign state; and 411 for other reasons.

Principal Countries of Former Allegiance of Persons Naturalized in U.S.

Former nationality	Years ended June 30				
	1952	1951	1950	1949	1948
British	14,993	10,867	12,697	13,284	12,361
German	13,538	5,439	6,065	5,777	7,486
Canadian	10,004	5,872	5,882	5,347	3,860
Italian	9,720	5,975	8,743	8,301	9,452
Polish	5,858	3,100	3,793	4,371	5,136
U.S.S.R.	2,851	1,830	2,122	2,752	3,143
Mexican	2,496	1,969	2,323	2,227	1,895
Filipino	1,813	1,595	3,257	3,478	5,768
Other	27,832	18,069	21,464	21,057	21,049
Total	88,655	54,716	66,346	66,594	70,150

New Legislation.—The major legislative project of the fiscal year continued to be the work begun early in 1950 on omnibus bills having for their purpose the recodification, and in many particulars the revision, of existing laws relating to immigration and nationality. These bills culminated in H.R. 5678, 82nd congress, which was enacted over the president's veto on June 27, 1952, and became public law 414. The Immigration and Nationality act of 1952 recodified and amended most of the existing laws on the subject.

Other public laws introduced in the 82nd congress relating to or affecting the work of the service and enacted during the year included the act of July 12, 1951 (public law 78), amending the Agricultural act of 1949; the act of Oct. 19, 1951 (public law 181), terminating the state of war between the United States and Germany; the act of March 20, 1952 (public law 283), creating a penalty for harbouring or concealing illegally entered aliens, and making it a criminal offense to transport certain illegally entered aliens with knowledge of such status; the act of April 9, 1952 (public law 307), making special quota immigration visas available to certain alien shepherders; the act of June 18, 1952 (public law 395), facilitating the acquisition of detention facilities. (See also IMMIGRATION AND EMIGRATION; LAW.)

(A. R. MY.)

United Kingdom.—The number of aliens registered in the United Kingdom on June 30, 1952, was 384,488 (males 229,917; females 154,571), of whom 128,546 were living in the metropolitan police district (London). The figure on June 30, 1951, had been 411,238 and on Jan. 1, 1952, was 401,151. The principal nationalities represented on June 30, 1952, and the number of each compared with the corresponding figures at the same date in 1951 were: Austrian 9,243 (10,348); Czechoslovak 4,441 (6,103); Danish 4,142 (5,255); Dutch 8,524 (9,360); French 15,225 (16,342); German 42,433 (45,285); Hungarian 4,101 (4,760); Italian 31,379 (25,396); Latvian 11,934 (13,436); Lithuanian 5,436 (6,388); Norwegian 5,258 (5,485); Polish 129,575 (143,253); Russian, including White Russian, 24,477 (26,078); Spanish 4,210 (4,016); Swiss 12,579 (12,933); U.S. 17,318 (17,400); Yugoslav 8,743 (9,431). The total included more than 7,000 aliens to whom no nationality could be attributed.

The number of incoming foreign travellers to the United Kingdom in the 12 months up to Sept. 30, 1952, was 811,211,

compared with 756,579 for the 12 months previous to Sept. 30, 1951.

In April 1952 the immigration inspection of passengers coming from Northern Ireland and the Republic of Ireland to Great Britain was abolished. In the same month an arrangement was made with the other signatories of the Brussels treaty—Belgium, France, Luxembourg and the Netherlands—to waive the requirement of individual passports for persons under the age of 21 travelling in a party of from 5 to 50 persons (excluding the leader) from one of the five countries to visit any of the others. Consular conventions with the United States and Sweden came into force in Sept. 1952. In October the United Kingdom concluded a visa abolition agreement with Turkey. As a result of earlier agreements, the nationals of the following countries were not required to obtain visas to travel to the United Kingdom: Belgium, Cuba, Denmark, France, Iceland, Italy, Liechtenstein, Luxembourg, Monaco, the Netherlands, Norway, San Marino, Sweden, Switzerland and the United States.

During the first nine months of 1952 nearly 26,000 permits were issued to allow foreigners to come and work in the United Kingdom for periods of varying length. Nearly 15,000 of these were for domestic employment in private households, hospitals and institutions, 2,700 for posts in industry and commerce and 2,700 for entertainment engagements. In addition, the recruitment of Italian men to work in undermanned industries continued.

From Jan. 1, 1952, the 15,000 former members of the German armed forces, 8,500 former Ukrainian prisoners of war and 1,000 Italian former prisoners of war who volunteered to remain in the U.K. to work in agriculture, instead of accepting repatriation at the end of 1948, were free to take any work they could obtain. In June 1952, former members of the Polish forces who were allowed to remain in the United Kingdom after demobilization, but who were subject to certain restrictions on their freedom to set up in business or to take employment, were released from these.

Between Jan. 1 and Oct. 1, 1952, 4,171 new applications for naturalization were lodged, compared with 3,576 for the same period in 1951. Certificates granted during the same period numbered 2,533. During the same period 3,712 foreign women who had married British subjects and 695 minors acquired British nationality by registration as citizens of the United Kingdom and colonies, compared with 4,528 and 768 respectively during the first nine months of 1951. (T. G. W.)

Alimentary System, Disorders of: *see* STOMACH AND INTESTINES, DISEASES OF THE.

Allergy. The scope of allergy had widened by 1952 to include a number of diseases in which allergic reactions may play an important role. This group includes rheumatic fever, periarteritis nodosa and several others referred to as collagenous diseases.

The cause of these conditions is related to development of hypersensitiveness to certain bacteria or drugs. This hypersensitiveness brings about changes in the connective tissue of the walls of arteries and elsewhere in the body.

Much work had been done on the role of the adrenal glands in allergic manifestations. In acute allergic disorders, such as severe, intractable asthma, nasal allergy, and urticaria, corticosteroids such as ACTH and cortisone are helpful in treatment. However, the administration of these drugs is not without danger and they should not be prescribed for ambulatory patients. It is necessary to hospitalize the patient and to study him carefully before the drugs are given. He must be watched continuously during the period of drug administration. Hormone

therapy is not a substitute for the proper and adequate study and management of the allergic patient. It is, rather, a procedure which should be used in emergencies and only for a relatively short time.

Intermittent positive pressure oxygen therapy had been used a great deal in the treatment of certain complications of bronchial asthma, such as pulmonary emphysema. This work was stimulated by an increased awareness of the role which these secondary changes play in the continuation of asthmatic manifestations.

The medical profession was becoming increasingly aware of the importance which drugs play in producing allergic manifestations. Whenever a patient develops unusual manifestations during the course of treatment for any condition, there exists the possibility that the very drugs that are administered to that patient for the relief of his symptoms may be responsible for the new symptoms. More and more, the problem was becoming not what drugs to give, but what drugs to cut. For example, the ointments which are prescribed for the relief of itching in allergic dermatoses may aggravate and contribute to the patient's symptoms.

Focuses of infection were believed to play a relatively unimportant role in the causation of allergic manifestations. If a patient has bad or abscessed teeth or bad tonsils, they should be removed, not because he is allergic but because such infections in themselves constitute an indication for the procedures.

Sensitization tests, such as skin testing, were believed to be important in the diagnosis of allergy, and yet by themselves do not constitute an allergic diagnosis. They are merely a guide which should be used in conjunction with the findings obtained from the history, physical examination, trial diets and environmental changes in directing the course to be followed in the management of the allergic patient.

The therapeutic results obtained in the treatment of children demonstrated the importance of the early diagnosis and early management of allergy in infants and children. No child or infant is too young to be subjected to a proper study of an allergic condition, because such early treatment may avoid complications which might make treatment difficult later on.

(*See also* CORTISONE, HYDROCORTISONE AND CORTICOTROPIN.)
(L. H. C.)

Alloys: *see* METALLURGY.

Almonds: *see* NUTS.

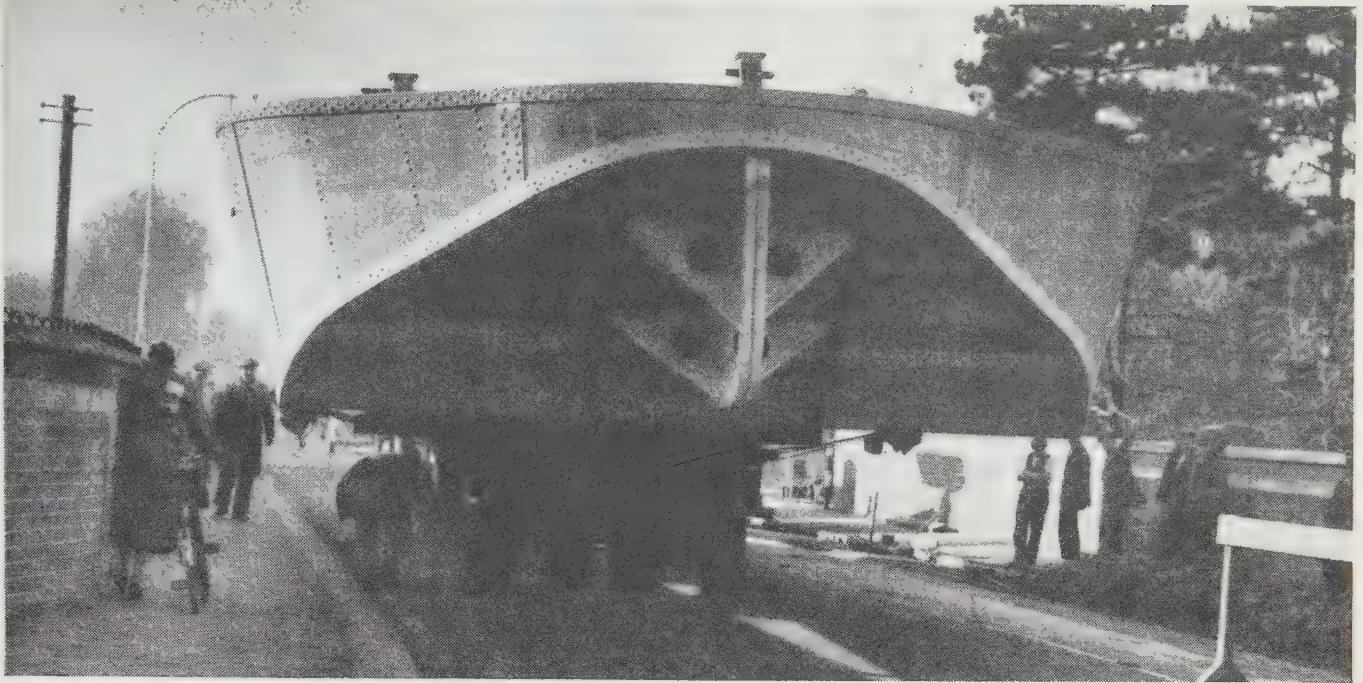
Aluminum. World production of aluminum increased by 19% in 1951, with 38% of the increase in the United States, 16% in Canada, 16% in Germany and 10% in France. Great Britain was the only major producer showing a drop in output.

Table I.—World Production of Aluminum

	(In thousands of short tons)						
	1945	1946	1947	1948	1949	1950	1951
Austria . . .	5.8	1.1	5.0	14.7	16.4	19.8	29.1
Canada . . .	215.7	193.4	299.0	367.1	369.5	396.9	447.1
France . . .	41.0	52.9	58.6	71.4	59.7	66.9	100.4
Germany . . .	22.2	...	...	8.0	31.8	30.7	81.7
Great Britain . . .	35.7	35.4	32.4	33.6	34.0	33.0	31.1
Italy . . .	4.8	12.2	27.6	36.5	28.3	40.9	54.8
Japan . . .	18.1	3.5	3.0	7.7	23.4	27.3	40.5
Norway . . .	5.1	18.4	23.9	34.2	38.6	51.3	56.5
Switzerland . . .	5.5	14.4	20.3	20.9	23.1	21.2	26.5
U.S.S.R. . .	95.2	115.2	132.2	154.2	182.2	210.2	220.2
United States . . .	495.1	409.6	571.8	623.5	603.5	718.6	836.9
Others . . .	13.6	12.7	15.8	25.7	29.7	19.4	39.2
Total . . .	958	870	1,189	1,398	1,441	1,647	1,964

United States.—The salient statistics of the aluminum industry in the United States, as reported by the U.S. bureau of mines, are shown in Table II.

Although production increased in each succeeding quarter from the end of 1949 to mid-1952, demand was consistently



ALUMINUM COAL BARGE built complete in England, being transported by diesel tractor en route to Cardiff for export. Steel shortages resulted in a shortage of barges but the aluminum alloy had advantages over steel, including resistance to corrosion

Table II.—Data of Aluminum Industry in U.S.

(In thousands of short tons)

	1946	1947	1948	1949	1950	1951
Production, primary . . .	409.6	571.8	623.5	603.5	718.6	836.9
Imports, primary . . .	42.6	15.6	89.1	85.2	187.8	141.6
Exports, primary . . .	16.7	62.3	49.1	36.8	20.5	12.0
Producers' stocks . . .	-26.3	+0.8	+2.4	+15.9	-12.5	-8.5
Available new supply . . .	461.9	524.2	661.9	636.0	898.4	975.0
Secondary recovery . . .	278.1	344.8	286.8	180.8	243.7	279.7
From old scrap . . .	90.5	163.8	95.6	44.6	76.4	71.7
Secondary imports . . .	14.5	15.7	71.7	40.1	68.0	20.0
Total supply . . .	566.9	703.7	829.2	720.7	1,042.8	1,066.7
Consumption, primary . . .	575.7	571.8	684.6	636.0	897.8	975.3

ahead of supply. The output in the first nine months of 1952 reached 701,961 short tons, 11% over that of the same period of 1951, with 14 reduction plants in operation in June 1952. In Aug. 1952 the price of aluminum was increased 1 cent per pound, to 19 cents for pig and 20 cents for ingot. (G. A. Ro.)

Ambassadors and Envoys. The following is a list of ambassadors and envoys to and from the United States, as of Oct. 1, 1952.

To the United States	Country	From the United States
*Naim, H. R. H. Sardar Mohammed . . .	Afghanistan	*Ward, Angus
*Paz, Hipólito J.	Argentina	*Nufér, Albert F.
*Spender, Sir Percy C.	Australia	*Jarman, Pete
*Loewenthal, Max	Austria	*Thompson, Llewellyn E., Jr. ¹
*Silvercruys, Baron	Belgium	*Cowen, Myron M.
*Andrade, Don Victor	Bolivia	*Sparks, Edward J.
*Salles, Walther Moreira	Brazil	*Johnson, Herschel V.
	Bulgaria ²	
*Barrington, James	Burma	*Sebold, William J.
*Kinny, Nong	Cambodia	*Heath, Donald R. ³
*Wrong, Hume	Canada	*Woodward, Stanley
*Corea, Sir Claude	Ceylon	*Satterthwaite, Joseph C.
*Nieto del Río, Félix	Chile	*Bowers, Claude G.
*Koo, V. K. Wellington	China	*Rankin, Karl L. ⁴
*Restrepo-Jaramillo, Don Cipriano	Colombia	*Waynick, Capus M.
*Oreamuno, Don J. Rafael	Costa Rica	*Fleming, Philip B.
*Choncho, Aurelio F.	Cuba	*Beaulac, Willard L.
*Procházka, Vladimír	Czechoslovakia	*Wadsworth, George ⁵
*Kauffmann, Henrik de	Denmark	*Anderson, Eugenie
*Thomen, Luis Francisco	Dominican Rep.	*Phelps, Phelps
Concha-Enríquez, Pedro ⁶	Ecuador	*Daniels, Paul C.
*Abdul Rahim, Mohammed Kamil	Egypt	*Caffery, Jefferson
*Castro, Don Héctor David	El Salvador	*Duke, Angier B.
Kaiv, Johannes ⁷	Estonia	(Legation at Tallinn closed)
*Imru, Ras H. S.	Ethiopia	*Childs, J. Rives
Nykopp, Johan A.	Finland	*McFall, Jack K.
*Bonnet, Henri	France	*Dunn, James C.
Krekeler, Heinz L. ⁸	Germany	*Donnelly, Walter J. ¹

To the United States	Country	From the United States
*Franks, Sir Oliver Shewell	Great Britain	*Gifford, Walter S.
*Politis, Athanasios G.	Greece	*Paurifoy, John E.
*Toriello, Don Guillermo	Guatemala	*Schoenfeld, Rudolf E.
*Léger, Jacques	Haiti	*Travers, Howard K.
*Valle, Don Rafael Heliodoro	Honduras	*Erwin, John D.
Weil, Emil	Hungary	Ravndal, Christian M.
Thors, Thor	Iceland	Lawson, Edward B.
*Mehta, Gaganvihari Lalubhai	India	*Bowles, Chester
*Sastroamidjojo, Ali	Indonesia	*Cochran, H. Merle
*Saleh, Allah-Yar	Iran	*Henderson, Loy W.
Bakr, Abdullah Ibrahim ⁹	Iraq	*Berry, Burton Y.
*Hearne, John Joseph	Ireland	*Matthews, Francis P. ¹⁰
*Eban, Abba	Israel	*Davis, Monnett B.
*Tarchiani, Alberto	Italy	*Bunker, Ellsworth
*Araki, Eikichi	Japan	*Murphy, Robert D.
Haikal, Yusuf	Jordan	*Green, Joseph C.
*You Chan Yang	Korea	*Briggs, Ellis O.
	Laos	Heath, Donald R. ³
Feldmans, Jules ¹¹	Latvia	(Legation at Riga closed)
Malik, Charles	Lebanon	Minor, Harold B.
*Simpson, Clarence L.	Liberia	*Dudley, Edward R.
	Libya	Villard, Henry S.
Žadeikis, Povilas	Lithuania	(Legation at Kaunas closed)
Le Gallais, Hugues	Luxembourg	Mesta, Perle
*Colina, Don Rafael de la	Mexico	*O'Dwyer, William
	Morocco	Vincent, John Carter ¹²
Shanker Shum Shere Jung Bahadur Rana, Gen. ¹³	Nepal	
*Roijen, J. H. van	Netherlands	*Bowles, Chester ¹⁴
*Munro, Leslie K.	New Zealand	*Chapin, Selden
*Sevilla-Sacasa, Don Guillermo	Nicaragua	*Scotten, Robert M.
*Munthe de Morgenstjerne, Wilhelm	Norway	*Whelan, Thomas E.
*Ali, Mohammed	Pakistan	*Bay, Charles U.
	Palestine	*Cabot, John M.
*Heurtematte, Don Roberto M.	Panamá	Tyler, S. Roger, Jr. ¹⁵
*Boettner, Don Luis Oscar	Paraguay	*Wiley, John C.
*Berckemeyer, Don Fernando	Peru	*Shaw, George P.
*Romulo, Carlos P.	Philippines, Re-public of the	*Tittmann, Harold H., Jr.
	Poland	
*Winiewicz, Jozef	Portugal	*Spruance, Raymond A.
*Fernandes, Luis Esteves	Rumania	*Flack, Joseph
Magheru, Mihai	Saudi Arabia	*Cannon, Cavendish W.
*Al-Faqih, Sheikh Asad	South Africa, Union of	Shantz, Harold
*Jooste, G. P.	Spain	*Hare, Raymond A.
	Sweden	
*Lequerica, Don José Félix de	Switzerland	*Gallman, Waldemar J.
*Boheman, Erik	Syria	*MacVeagh, Lincoln
Bruggmann, Charles	Thailand	*Butterworth, W. Walton
*Sarasin, Pote	Turkey	Patterson, Richard C., Jr.
*Erkin, Feridun C.	U.S.S.R.	*Moose, James S., Jr.
*Zaroubin, Georgi N.	Uruguay	*Stanton, Edwin F.
*Mora, José A.	Venezuela	*McGhee, George C.
Otañez, Aureliano ¹⁶	Vietnam	*Kennan, George F.
*Tran, Van Kha	Yemen	*Roddan, Edward L.
Abu-Taleb, Sayed Abdurrahman ibn Abdussamed ⁸	Yugoslavia	*Warren, Fletcher
*Popović, Vladimir	Unstarred—Minister.	*Heath, Donald R.
*Ambassador.		Hare, Raymond A. ¹⁷
U.S. high commissioner.		*Allen, George V.

(Footnotes continued on next page)

²Diplomatic relations severed Feb. 24, 1950.

³Resident in Saigon, Vietnam.

⁴Chargé d'affaires ad interim, minister and consul general; resident at Taipei, Formosa; embassy at Nanking closed March 5, 1950.

⁵Appointed Oct. 8, 1952.

⁶Minister counsellor, chargé d'affaires ad interim (Sept. 23, 1952).

⁷Acting consul general.

⁸Chargé d'affaires.

⁹Minister plenipotentiary, chargé d'affaires ad interim.

¹⁰Died Oct. 18, 1952.

¹¹Minister plenipotentiary, chargé d'affaires.

¹²Diplomatic agent with rank of minister, consul.

¹³Resident in London.

¹⁴Resident in New Delhi, India.

¹⁵Consul.

¹⁶Minister counsellor, chargé d'affaires ad interim (May 19, 1952).

¹⁷Resident in Jidda, Saudi Arabia.

American Academy of Arts and Letters: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Academy of General Practice: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Academy of Political and Social Science: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Association for the Advancement of Science: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Association of Law Libraries: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Association of University Professors: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Association of University Women: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Bankers Association: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Bar Association: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Bible Society: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Chemical Society: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Citizens Abroad. The number of United States citizens residing abroad during 1952 increased from 439,950 to 522,788—adding more than 82,000 persons to the colonies outside the United States. The increases were noted in each of the geographic areas reported in the table, with Canada, Iceland and Newfoundland showing the greatest increase, and the European area second in volume.

The coming into effect of the Treaty of Peace with Japan and of the administrative agreement, April 28, 1952, abolished the requirement of military permits for travel to Japan and opened the way for normal travel by means of passports, visaed by Japanese consular officers for civilians other than members of the armed forces component. Bearers of passports showing status as members of the armed forces component did not require Japanese visas for residence in Japan. Certain similar exceptions were made for dependents of military and civilian personnel.

On May 1, 1952, notice was issued to the public that thereafter passports would not be valid for travel to Albania, Bulgaria, China, Czechoslovakia, Hungary, Poland, Rumania or the

Estimate of American Citizens Residing Abroad

	Jan. 1, 1951	Jan. 1, 1952
South America	34,774	37,751
Mexico and Central America	48,389	49,312
Europe	118,815	136,988
Asia	31,716	38,383
Africa	10,243	15,950
Australia and New Zealand	6,136	6,710
West Indies and Bermuda	22,104	23,679
Canada, Iceland and Newfoundland	143,697	184,786
Philippines	23,987	28,999
Fiji	—	—
New Caledonia	89	230
Totals	439,950	522,788



U.S. ARMY WIVES aboard the S.S. "Washington" getting answers to questions from a ship's officer in charge of passengers. There were 411 wives and 626 children aboard, sailing under the army's plan for reuniting servicemen and their families in Europe.

Union of Soviet Socialist Republics unless specifically endorsed under authority of the department of state as being valid for such travel.

General travel abroad for the fiscal year 1952 exceeded that of any previous year.

(*See also* TOURIST TRAVEL.)

(R. B. S.)

American College of Dentists: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American College of Life Underwriters: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American College of Physicians: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American College of Surgeons: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Dental Association: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Dialect Society: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Economic Association: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Federation of Labor: *see* LABOUR UNIONS.

American Geographical Society: *see* CARTOGRAPHY; GEOGRAPHY; SOCIETIES AND ASSOCIATIONS, U.S.

American Historical Association: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Indians: *see* INDIANS, AMERICAN.

American Institute for Property and Liability Underwriters, Inc.: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Institute of Accountants: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Institute of Architects: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Institute of Chemical Engineers: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Institute of Electrical Engineers: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Institute of Mining and Metallurgical Engineers: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Iron and Steel Institute: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Law Institute: *see* SOCIETIES AND ASSOCIATIONS, U.S.

American Legion: *see* VETERANS' ORGANIZATIONS.

American Library Association. The American Library association (A.L.A.), official organization of librarians in the United States and Canada, had a membership in 1952 of more than 21,000 from the U.S. and possessions, Canada and more than 50 foreign countries, and was affiliated with more than 70 other library associations throughout the world. In 1951 the association had an endowment capital of approximately \$2,163,000 and a total income of about \$904,000.

Headquarters are located at 50 E. Huron St., Chicago 11, Ill., with David H. Clift as executive secretary and Mrs. Grace Stevenson as associate executive secretary.

The annual midwinter meeting of the association was held in Chicago, Jan. 29–Feb. 2, 1952. A near record attendance of 5,212 was registered at the 71st annual conference in New York city, June 29–July 5, 1952. Future conference plans called for a midwinter meeting in Chicago, Feb. 2–7, 1953, and annual conferences in Los Angeles, Calif., June 21–27, 1953, and Miami Beach, Fla., June 18–27, 1954.

Officers, elected by ballot, who assumed their duties at the annual conference were: president, Robert B. Downs, University of Illinois library, Urbana; first vice-president and president-elect, Flora B. Ludington, Mount Holyoke College library, South Hadley, Mass.; second vice-president, Lucile M. Morsch, Library of Congress, Washington, D.C.; and treasurer, Raymond C. Lindquist, Cuyahoga County Public library, Cleveland, O.

The annual A.L.A. citations for distinguished service as library trustees were awarded to Mrs. A. J. Quigley, Seattle, Wash., and Harold J. Baily, Brooklyn, N.Y. The 31st Newbery medal was given to Eleanor Estes for *Ginger Pye*, judged to be the most distinguished children's book of 1951. Nicholas Mordvinoff received the 15th annual Caldecott medal as illustrator for *Finders Keepers*, chosen as the best illustrated children's volume of the year.

Carl Vitz, chief librarian of the Cincinnati Public library, Cincinnati, O., received the Joseph W. Lippincott award (\$500) for outstanding professional achievement in the field of librarianship. The Margaret Mann citation, established in 1951 by the A.L.A. division of cataloguing and classification, was given to Marjorie L. Prévost, for distinctive professional attainment in cataloguing and classification.

The Ada McCormick *Letter* librarian award (\$100) went to Charlemae Rollins, children's librarian, George Hall branch, Chicago Public library, for an outstanding demonstration of the human qualities of librarianship. The Fitchburg Youth library, Fitchburg, Mass., received the *Letter* library award. Ten libraries were presented with the 1952 John Cotton Dana Publicity awards, sponsored by the *Wilson Library Bulletin* and the A.L.A. public relations committee, for effective public relations programs. The Field citation for library recruiting (\$100) was awarded to the Indiana Library association for the most effective recruiting of library personnel in 1951.

During 1952 the A.L.A. sponsored discussion programs, under local public-library leadership, on the American heritage and its application to present-day problems. This project was financed by a grant from the Fund for Adult Education, which was established by the Ford foundation. Six regional and local libraries, representing various types of communities, were chosen for the first year's demonstration. With an additional grant for 1952–53 the project activities would be expanded on a state-wide and regional basis and would include discussion programs on the American heritage for young people.

The A.L.A. received an additional grant of \$24,700 from the Fund for Adult Education for a survey of adult education

activities in public libraries.

The association continued to be concerned with the extension of complete and adequate library service for all citizens; censorship and intellectual freedom as applied to libraries; educational use of television; and the recruiting and training of librarians. During the year it worked actively with the American Book Publishers council on librarians' and publishers' mutual problems, and participated in the national nonpartisan register and vote campaign sponsored by the American Heritage foundation and other national organizations. A.L.A. also continued to co-operate with the U.S. state department in its information libraries program and the exchange of persons and books activities; administered the Japan Library school at Keio university, Tokyo; approved new minimum salary standards for professional librarians; and introduced in the U.S. house of representatives a new library services bill (S. 1452), which was designed to promote the further development of public library service in rural areas. (*See also* LIBRARIES.) (D. H. C.)

American Literature. The interest generated by a presidential election in the United States affected the literary scene of 1952. The concern with political matters which characterized nonfictional writing made even clearer the indifference to them which characterized fiction.

Writers approached politics from a number of angles: sociological, historical, psychological and anecdotal. Foreign correspondents wrote most frequently of the world situation as it related to the "cold war" and U.S. policy. There was also a natural flow of campaign literature.

In fiction the swell of novels about World War II seemed to have subsided without ever having reached the number or the excellence of those which came out of World War I. The south, rather than politics or war, was the topic of the most conspicuous group of novels. Two novelists of established reputation, Ernest Hemingway and John Steinbeck, produced new volumes. Two American literary events of unusual significance were the publication of the Revised Standard Version of the Holy Bible and "Great Books of the Western World."

Although most nonfiction writers concentrated on the American scene, there were several excellent reports on world affairs. Out of his years of political observation William L. Shirer wrote *Midcentury Journey*, a survey of western Europe's years of conflict. Leland Stowe's *Conquest by Terror* described the situation in the satellite countries of the U.S.S.R. L. S. Stavrianos' *Greece: American Dilemma and Opportunity* was a scholarly history of Greece during and since World War II and a criticism of the United States foreign policy there. Ray Brock reported on the struggle between the U.S.S.R. and the western powers for control of the middle east in *Blood, Oil and Sand*. Justice William O. Douglas recorded his visit to China and his views on the far east in *Beyond the High Himalayas*. Thomas E. Dewey's *Journey to the Far Pacific* approved U.S. foreign policy but stressed the dangers of trying to force Asia into western moulds. Among the strangely few books on the Korean conflict were *Battle Report* by Walter Karig and others, a continuation of a series drawn from official sources on World War II naval operations; and *The Hidden History of the Korean War* by I. F. Stone, an unorthodox analysis. *The Pattern of Responsibility*, edited by McGeorge Bundy, showed what lay behind the state department's actions, by selections from Secretary Dean Acheson's records.

The American Scene.—Perhaps the largest group of books about the American scene were expert analyses from special points of view. Robert Morrison MacIver, a sociologist, in *Democracy and the Economic Challenge* argued for a mixed economy. George A. Graham, a political scientist, presented a

thoughtful and scholarly discussion of corruption and moral standards in *Morality in American Politics*. Reinhold Niebuhr, a theologian, in *The Irony of American History* surveyed the failure of democratic accomplishments to keep pace with democratic theories. David Riesman, another sociologist, and Nathan Glazer, in *Faces in the Crowd*, anatomized the American personality as seen in a group of interviews, with emphasis on the correlation of political and personality patterns. Curtis D. MacDougall followed the point of view of the social psychologist in his *Understanding Public Opinion*. Herbert Agar, in *A Declaration of Faith*, urged the historical precedent of respect for the individual conscience. Frederick Lewis Allen's *The Big Change*, written in popular style, traced the economic and political transformation of the United States from 1900 to 1950. *The Future of American Politics*, by Samuel Lubell, was based on interviews and on a close statistical study of election returns of past years. Francis Biddle, in *The Fear of Freedom*, reviewed anti-subversive measures and found them sometimes dangerous to freedom. Jerome Davis' *Peace, War and You* presented the Quaker positive moral program for meeting the world's economic needs.

Other books treated more specific aspects of the national scene. Although Virgil W. Peterson's *Barbarians in Our Midst* was a history only of Chicago crime and politics, it was presented as a typical big-city pattern. Merle Miller, in *The Judges and the Judged*, analyzed and documented the paralyzing effect of the black list on radio and television writers and performers. Marquis Childs's *The Farmer Takes a Hand* was the story of the Rural Electrification administration's crusade to bring electricity to farms. *South of Freedom*, by Carl T. Rowan, described a northern Negro reporter's experiences in the south. Henry Kraus's pleasant *In the City Was a Garden* was an account of co-operative living in a housing project. Baker Brownell, in *The College and the Community*, blamed urban living for the failure of individuals to function as whole human beings.

Of books about the natural world, George Gamow's *The Creation of the Universe* posited a continuous evolutionary process and Harold C. Urey's *The Planets* discussed a theory of the origin of the solar system. Henry Chapin and F. G. Walton Smith traced the effect of the Gulf stream on climate and economy in *The Ocean River*. Marston Bates's *Where Winter Never Comes* offered a charming apologia for life in the tropics as well as an account of their geography, history, flora and fauna. Joseph Wood Krutch, in *The Desert Year*, chronicled the natural observations of a sabbatical year spent in New Mexico. Leonard Dubkin recorded his minute acquaintance with an albino bat in *The White Lady*.

An important work on American art was Hugh Sinclair Morrison's *Early American Architecture* which covered the period from the first colonial settlements of the Atlantic coast, the south, and west up to national times, and quoted extensively from contemporary diaries and chronicles. Carl W. Condit, in *The Rise of the Skyscraper*, made a technical and aesthetic study of America's contribution to world architecture. Arnold Hauser published a two-volume *Social History of Art*, discussing all forms of art from cave drawings to movies, with emphasis on art as the expression of the character of each age. Lloyd Goodrich wrote an excellent appreciation of a U.S. painter in *John Sloan*. Barry Ulanov's *A History of Jazz in America* was encyclopaedic in its scope and detail. Alice Evans Field wrote *Hollywood, U.S.A., from Script to Screen*, describing all the actual processes and technical factors of making a movie.

The field of biography and reminiscences was dominated by campaign literature. Prominent items were Noel Fairchild Busch's *Adlai E. Stevenson of Illinois* and John Gunther's

Eisenhower: the Man and the Symbol. The most controversial book of memoirs was Whittaker Chambers' *Witness*, a political and spiritual autobiography which added an essential document to the recent group of books on radical activities and the Alger Hiss case. Elizabeth Wallace wrote about a long life of teaching, travel and literary acquaintances in *The Unending Journey*. Ted Allan and Sydney Gordon wrote about Norman Bethune, who initiated the mobile blood bank, in *The Scalpel, the Sword*. Otto Kallir edited the artist's random reminiscences in *Grandma Moses: My Life's History*. Two theatrical autobiographies were *Tallulah: My Autobiography* by Tallulah Bankhead and *Dance to the Piper* by Agnes de Mille. Robert Payne recorded the life and achievements of Charles Chaplin in *The Great God Pan*.

Historical Works.—In 1952 significant biographies dealt with figures of the Revolutionary and Civil War periods. Edwin Thomas Martin wrote *Thomas Jefferson: Scientist*, interesting not only as biography but also as a chapter in the history of science. Howard Swiggett's *The Extraordinary Mr. Morris* gave an unbowdlerized picture of the founding father. Zoltán Haraszti, in *John Adams and the Prophets of Progress*, drew on a mass of hitherto unpublished marginalia as well as published writings to present the mind of John Adams and to establish his greatness as a political thinker. Douglas Southall Freeman added a fourth volume to his monumental *George Washington, A Biography*. The first work incorporating the new Lincoln material from the Library of Congress appeared, a one-volume biography, *Abraham Lincoln* by Benjamin P. Thomas. Another important item in the Lincoln bibliography was Thomas Harry Williams' discussion of the Civil War president as a military strategist in *Lincoln and His Generals*. A Civil War biography which had considerable popular appeal was Nina Baker's *Cyclone in Calico*, the story of Mary Ann Bickerdyke, the first field hospital nurse in U.S. history.

The flow of memoirs and collected papers continued. The fifth volume of *The Papers of Thomas Jefferson* appeared, edited by Julian Boyd and others. Elting E. Morison edited volumes v and vi of *The Letters of Theodore Roosevelt*, covering the years of the big stick. Herbert Hoover's *Memoirs: The Great Depression, 1929-1941* dealt with the origins of the depression, the campaign of 1932 and its aftermath. Arthur H. Vandenberg, Jr., edited *The Private Papers of Senator Vandenberg*. *Mr. President* was an authorized selection by William Hillman from the personal letters, diaries and papers of Harry S. Truman. Samuel I. Rosenman's *Working with Roosevelt* was a leisurely reminiscence of Franklin D. Roosevelt. Irving Dilliard collected papers and addresses of the jurist Learned Hand into *The Spirit of Liberty*.

Lynn Montross, in *Rag, Tag and Bobtail*, presented a new slant on the Continental army from 1775 to 1783 by drawing his material from diaries and documents of ordinary citizens in the army. Ola Elizabeth Winslow, in *Meetinghouse Hill, 1630-1783*, discussed the function of the pulpit as a sounding board for early New England theocracy. Bruce Catton's *Glory Road* told the story of the Army of the Potomac from Fredericksburg to Gettysburg. *The Negro Freedman*, by Henderson Hamilton Donald, studied the American Negro during the early years after Emancipation, finding that in slavery there had been no preparation for the adjustment to freedom. *The Diary of George Templeton Strong*, edited by Allan Nevins and Milton Halsey Thomas, gave the reader a contemporary eyewitness report on mid-19th century New York city. Among books of broader scope were Herbert Joseph Muller's *The Uses of the Past*, which presented profiles of former societies, and *Economic Forces in American History*, in which George Soule organized vast statistical information.

Fiction.—Although the year in fiction was characterized by

many new names, the most welcomed novel of the year was Ernest Hemingway's short work, *The Old Man and the Sea*, the spare, and often moving, story of an old fisherman's venture beyond known waters to catch a giant marlin, the catch a triumph in spite of the gradual destruction of the fish by sharks on the way home.

John Steinbeck returned to American readers with *East of Eden*, a large uneven novel which combined a history of his own family in the Salinas valley with portraits of a very good man and a very bad woman. Ralph Ellison's first novel, *Invisible Man*, roused a good deal of interest by its use of satire, violent humour and social observation in the story of a Negro's search for spiritual bearings. Gore Vidal's *Judgment of Paris*, in which a footloose young American pursues the three goddesses through contemporary European society, showed a growth in the writer's power.

The most conspicuous group of writers were southerners, whose works, while not uncritical of the good old ways, assumed values distinctly southern and often aristocratic. The level of writing varied enormously but probably none of it equalled that of such southerners as William Faulkner, Carson McCullers and Caroline Gordon. Of these, Elizabeth Spencer's *This Crooked Way* had considerable distinction, being three versions of the ambitious marriage of a poor man who comes down to the delta and fights his way to success. John Burrell, in *Little Mule*, pictured the struggle of a little boy in a poverty-stricken family to take his dead father's place on the farm. *The Alexandrians*, by Charles Mills, covered a hundred years in the life of a small aristocratic community. The impact of a young preacher on the

emotions of his lady parishioners is analyzed in both Lael Tucker's *Lament for Four Virgins* and Worth Tuttle Hedden's *Love Is a Wound*.

The year saw *Sironia, Texas*, by Madison Cooper, represented as the longest American novel ever published. But it also saw a solid group of excellent books distinguished for their conciseness. Jean Stafford's *The Catherine Wheel*, in spite of its rather melodramatic ending, was a controlled and effective study of a woman and her relationship to the children of a man she may marry. Wright Morris, in *The Works of Love*, created a striking character who fumbles for and cannot grasp the love of a woman or a son. The hero of Barnaby Conrad's *Matador* loses his life when he pushes beyond the limits of his art. Foibles of both the academic world and the liberal intellectual were anatomized in Mary McCarthy's *The Groves of Academe*. Isabel Bolton portrayed with skilful delicacy an old woman reviewing her life in *Many Mansions*. Two books whose excellence far transcended their type were H. L. Davis' *Winds of the Morning*, basically a western about an old man wrangling horses through the Columbia river country; and Michael Blankfort's *The Juggler*, a detective story, set in Israel, of a new immigrant's flight both from his nazi prison camp past and the detective who is pursuing him for his attempt to murder a policeman.

Two writers in considerable favour in recent years brought out books which added little to their stature. Paul Bowles, in *Let It Come Down*, presented a disillusioned bank clerk mixed up with criminals and spies in Tangier. Frederick Buechner, in *Seasons' Difference*, told of a young man's mystic vision and his attempts to make others see it.

Of novels whose chief interest lay in their special settings or milieux, Edna Ferber's *Giant* was the most sensational, largely because of the animosity it aroused in the inhabitants of Texas,

TENNESSEE WILLIAMS (right), U.S. playwright, with Christopher Isherwood, English novelist, at one of the literary cocktail parties of the book trade in 1952. Williams was elected to life membership in the National Institute of Arts and Letters on Feb. 7



the subject of her criticism. Pat Frank wrote about a heroic retreat from a Korean front in *Hold Back the Night*, one of the year's few war novels. At the other extreme was Carl Jonas' *Jefferson Selleck*, an attempt to re-create, by a first-person narrative, the life and minor troubles of an amiable Babbitt. Thomas Sterling, in *Strangers and Afraid*, created characters far more complex and real than the usual sociological Negro types. Granville Hicks portrayed rural democracy in *There Was a Man in Our Town*. *The Spire*, by Gerald Warner Brace, was a satirical picture of a New England college and its people.

The most popular of the year's historical novels was Thomas Bertram Costain's *The Silver Chalice*, a story of Joseph of Arimathea and the Holy Grail. Truman Nelson's *The Sin of the Prophet* was a fictionalized account of Theodore Parker and the Abolitionists in Boston. *The Gown of Glory*, by Agnes Sligh Turnbull, concerned a preacher in a small Pennsylvania town during the early 20th century. Clyde Brion Davis' *Thudbury; an American Comedy* was social history of the same era as seen in the life of an upstate New York magnate.

Among collections of short stories and sketches one of the most popular was James Thurber's *The Thurber Album*, centred around the Columbus, O., of his youth. There was the posthumous publication of Gertrude Stein's *Mrs. Reynolds, and Five Earlier Novelettes*. The stories in Dawn Powell's *Sunday, Monday and Always* were biting satires. *Some Others and Myself*, by Ruth Suckow, included seven stories and a memoir of her life in the midwest. Langston Hughes's *Laughing to Keep from Crying* was a group of stories, many of them funny, about Negroes in different parts of the world. Eleanor Clark's *Rome and a Villa* was a series of sketches re-creating Rome.

Scholarship.—The year in scholarship brought a number of biographies and critical studies of major American writers. Leon Howard, in *Victorian Knight-Errant*, studied the early literary career of James Russell Lowell. Several items were added to the growing Melville library: Lawrance Thompson, in *Melville's Quarrel with God*, argued a new interpretation of his whole literary career; Merrell Davis studied one book thoroughly in *Melville's Mardi*; Luther Mansfield and Howard P. Vincent edited *Moby-Dick* with voluminous notes. The "American Men of Letters Series" added Richard Volney Chase's *Emily Dickinson*. *Sam Clemens of Hannibal*, the first volume of a biography projected by Dixon Wecter, was a superb picture of Mark Twain's formative years and of the town which was so rich a source of material for him. On the border line of belles lettres and Americana was James Monaghan's *The Great Rascal*, a portrait of Ned Buntline, the dime novelist and promoter of Buffalo Bill.

Studies of 20th-century figures included Mark Harris' *City of Discontent*, a re-creation of Vachel Lindsay's Springfield, Ill. Ellsworth Barnard surveyed the poet's entire works in *Edwin Arlington Robinson, a Critical Study*. Harold Watts, in *Ezra Pound and the Cantos*, upheld the integrity of the work but admitted flaws. Carlos Baker's *Hemingway: the Writer as Artist*, while it included some biographical material, concentrated on the writer's ideas and theories. Irving Howe's *William Faulkner: a Critical Study* augmented the reputation of a leading novelist; Rossell Hope Robbins' *The T. S. Eliot Myth* derogated that of a leading poet.

Among more general works a landmark was *The Confident Years: 1885-1915*, the completing volume of Van Wyck Brooks's distinguished "Makers and Finders: A History of the Writer in America, 1800-1915" series. Edward Charles Wagenknecht's *Cavalcade of the American Novel* was a critical history in terms midway between those of the sociological and the "new" critics. John Gassner edited the third volume of *Best American Plays* with an introductory survey of the American theatre since the

end of World War I. Orville Prescott's *In My Opinion* was an inquiry into the contemporary novel.

Conrad Aiken's *Ushant* was part biography, part work of art, and part expression of his poetic life. *The Necessary Angel*, by Wallace Stevens, was a group of essays on reality and imagination. Paul Hindemith, in *A Composer's World*, discussed the theory and nature of music.

Collections of letters included *The Letters of Hart Crane and From Main Street to Stockholm*, Sinclair Lewis' letters to his publisher. Richard Beale Davis edited Chivers' *Life of Poe* and Dixon Wecter edited and wrote an introduction for Mark Twain's *Report from Paradise*.

Poetry.—Two collections by eminent poets appeared during the year, Wallace Stevens' *The Man with the Blue Guitar* and Marianne Moore's *Collected Poems*. A new volume in the "Yale Series of Younger Poets" was W. S. Merwin's *A Mask for Janus*, which reflected not too sombrely on the desolation of our times. Samuel Yellen's *In the House and Out* was also tinged with a sense of doom. Thomas Hornsby Ferril's *New and Selected Poems* used American themes and folkways. Ernest Kroll wrote *Cape Horn, and Other Poems*. The lyrics of Robert Hillyer's *The Suburb by the Sea* were pleasant and relaxed. Other volumes included Shirley Barker's *A Land and a People*, on New England themes, and Joseph Bennett's *Decembrist*. Babette Deutsch's *Poetry in Our Time* was a history of contemporary English and American poetry; and Louise Bogan's survey, *Achievement in American Poetry, 1900-1950*, contained extended criticism of Pound and Eliot. (See also BOOK PUBLISHING; CHILDREN'S BOOKS; ENGLISH LITERATURE; LITERARY PRIZES.) (H. M. H.)

American Mathematical Society: see SOCIETIES AND ASSOCIATIONS, U.S.

American Medical Association: see SOCIETIES AND ASSOCIATIONS, U.S.

American Optometric Association: see SOCIETIES AND ASSOCIATIONS, U.S.

American Prison Association: see SOCIETIES AND ASSOCIATIONS, U.S.

American Society of Civil Engineers: see SOCIETIES AND ASSOCIATIONS, U.S.

American Society of Composers, Authors and Publishers: see SOCIETIES AND ASSOCIATIONS, U.S.

American Society of Mechanical Engineers: see SOCIETIES AND ASSOCIATIONS, U.S.

American Sunday-School Union: see SOCIETIES AND ASSOCIATIONS, U.S.

American Veterans' Committee: see VETERANS' ORGANIZATIONS.

American Veterans of World War II (Amvets): see VETERANS' ORGANIZATIONS.

Anaemia: see BLOOD, DISEASES OF THE.

Andorra. A small autonomous principality between France and Spain, Andorra is bounded north by the departments of Ariège and Pyrénées Orientales, and south by the Spanish province of Lérida. Area: 191 sq.mi. Population (1952 est.): 6,000. Language: Catalan. Religion: Roman Catholic. Capital: Andorra-la-Vieja (pop., 1952 est. 600). Co-princes: the president of the French republic and the bishop of Urgel, Sp., respectively represented by their *viguiers*. An elected general council of 24 members appoints one of its members as the *syndic général des vallées* (from 1946, Francisco Cayrat).

History.—Twelve out of 24 members of the general council were re-elected on Dec. 15, 1951. Only the heads of families voted. This system had been replaced in 1933 by universal

suffrage, but in 1941, as a result of an agreement between the French Vichy government and the bishop of Urgel, Andorra returned to the old system.

Jean Menant was appointed French *viguier* in succession to André Bertrand; he was sworn in at a solemn sitting of the general council and the syndics did him homage. Jaime Sansa Nequi continued to serve as the Spanish *viguier*.

The 60 French *gardes mobiles*, stationed in the territory from autumn 1944, left Andorra. The population of Las Escaldas, a township rapidly growing since 1946, exceeded that of Andorra-la-Vieja.

Angling. In 1951, 16,026,699 fishing licences were sold in the United States, representing a gross cost of \$35,554,285 to anglers, including special permits, trout stamps, etc. Michigan and Wisconsin were over the 1,000,000 mark in total number of licences sold, but California derived the largest income, with \$2,986,352.

The 44th annual national casting tournament was held at Peoria, Ill., Aug. 20-24, 1952. The distance trout fly event was won by John Dieckman with a long cast of 165 ft. and an average of 159½ ft.; the ¾-oz. distance bait-casting event was won by Clem Forcade with a long cast of 349 ft. and an average of 336¾ ft.; in the ⅝-oz. distance bait-casting event, Ernest Liotta established a new world's record with a long cast of 449 ft. and an average of 432½ ft.

The ninth International Tuna Cup match was held at Wedgeport, N.S., Sept. 10-12, 1952, and the Alton B. Sharp trophy was won by the Cuban team. The U.S. team was second and the British team third. The quality of the fishing in Soldier's Rip, traditional grounds of the match, was poor, so the fleet was moved to the mouth of the Tusket river. This area is protected from heavy seas.

The International Game Fish association's outstanding world's record catch for the year was a 1,135-lb. black marlin, the largest billfish in the history of big-game angling, which was taken by S. Kip Farrington on Sept. 28, 1952, in the waters off Talara, Peru. Other record fish listed during the year numbered seven (most of these were caught in previous years). A 279-lb. alligator gar was caught on Dec. 2, 1951, in the Rio

Grande river, Texas, by G. Valverde. A black bullhead weighing 8 lb. was taken at Lake Waccabuc, New York, on Aug. 1, 1951, by Kani Evans. A 94½-lb. blue catfish was caught on May 22, 1949, in the James river, South Dakota, by Roy A. Groves. An 11½-lb. arctic charr was caught in Richmond Gulf, Hudson bay, on Aug. 10, 1950, by John Durant. A 4-lb. 12-oz. white perch was caught in Messalonskee lake, Maine, on June 4, 1949, by Mrs. Earl Small. A 23-lb. 6½-oz. pollack was caught on May 29, 1952, by A. L. Hansen at Chatham, Mass. A 66-lb. roosterfish was caught on Aug. 14, 1949, by W. R. Good, at Bahia de Los Angeles, Mex.

(A. J. ME.)

Anglo-Egyptian Sudan. A territory in northeast Africa, the Anglo-Egyptian Sudan is under the joint sovereignty of Great Britain and Egypt. Area: 967,500 sq.mi. Pop. (no census ever taken, 1951 est.): 8,740,000. Languages: English, Arabic and various Nilotic and Negro tribal dialects in the south. Religion: Arabic minority is Moslem, the Negro population mainly heathen; only c. 20% of the population in the south is Christian. Chief towns (pop., 1948 est.): Khartoum (cap., 71,400); Omdurman (125,300); El Obeid (70,100); Wad Medani (57,300); Port Sudan (47,000). Governor-general: Sir Robert Howe.

History.—The affairs of the Sudan during 1952 were once more intimately bound up with the development of Anglo-Egyptian relations. When these became critical at the time of the unilateral denunciation by Egypt of the 1936 Anglo-Egyptian treaty and of the 1899 condominium arrangements for the Sudan, on Oct. 27, 1951, it was stated as one ground for this action that Great Britain had "persistently tried to separate the Sudan from Egypt." This provoked from the British foreign office a reaffirmation of the "two fundamental principles" of their policy namely, "that they will agree to no change in the status of the Sudan without consultation with the Sudanese, and that they will maintain the right of the Sudanese freely to choose their own status."

On Jan. 17, 1952, a draft constitution, prepared by the

ARABS EXCITEDLY reporting the theft of their camels to a district commissioner in the Anglo-Egyptian Sudan



Sudanese Constitutional commission, was submitted to the legislative assembly. It proposed a bicameral parliament consisting of a chamber of deputies of 100 members with power to elect the prime minister and of a senate having 30 elected and 20 nominated members. Other than the prime minister, the council of ministers was to consist of Sudanese, eligible for, but not necessarily members of, parliament, and chosen by the governor general in consultation with the prime minister. External affairs and defense matters were to some extent reserved to the governor general who might, in an emergency, preside over the council of ministers. Differences within the Sudan were reflected in the provision for a minister of southern affairs, who was himself to be a southerner. It was made clear that this was to be no more than a temporary constitution, designed to function until the Sudanese had decided upon their future. For this purpose it was suggested that a constituent assembly should be set up before the end of 1953. This, on the advice of a resident international commission, should supervise the achievement of full self-determination.

Meanwhile the two major groups of parties or fronts (Umma, or Nation, standing for independence, and Ashigga, aspiring to the Nile valley unity) had agreed on Jan. 3 to ask for a plebiscite on the future of the country. The increasing tempo of political life was reflected in the appearance of new parties, one the Sudan Republican party, favouring the creation of a secular Sudanese republic within the Commonwealth of Nations, in accordance with the example set by India, and another a Socialist party.

The reopening of Anglo-Egyptian negotiations in April provoked a message from Miralai Abdullah Khalil, the leader of the legislative assembly and also secretary-general of the Umma party, expressing confidence in British intentions and attacking Egypt's "deplorable attitude" and "attempts to impose her crown on us." However, a strong Umma delegation accepted an invitation to visit Egypt in May.

On April 23 the legislative assembly approved the draft constitution with some modifications. Substantial powers remained with the governor general, but his right to overrule decisions of parliament was specifically limited. The senate was to be in accordance with the recommendations of the Constitutional commission but the chamber was reduced in size to 78 members. Of these 24 representing the more politically advanced areas were to be elected by manhood suffrage and secret ballot, and 54 were to be chosen by manhood suffrage exercised through tribal electoral colleges. The assembly provided for the exercise by the Sudanese of their right of self-determination at such a time and in such a manner as they themselves should determine.

After Gen. Mohammed Naguib (himself of Sudanese birth) had attained power, the Egyptian government began a re-examination of its policy toward the Sudan. (See also EGYPT.)

(H. S. D.)

Angola: see PORTUGUESE OVERSEAS TERRITORIES.

Animal Fats: see VEGETABLE OILS AND ANIMAL FATS.

Animal Industry, Bureau of: see AGRICULTURAL RESEARCH ADMINISTRATION; VETERINARY MEDICINE.

Annam: see INDOCHINA.

Anniversaries and Centennials: see CALENDAR, 1953, page xxii.

Antabuse: see INTOXICATION, ALCOHOLIC; PSYCHIATRY.

Antarctica. The antarctic continent lies almost entirely within and is circumscribed by the Antarctic circle. With an area of nearly 6,000,000 sq.mi., equal to the United States and Europe combined, nine-tenths of it is covered by an ice sheet, thousands of feet thick in places. The 2,000,000

sq.mi. area thus far seen by man has an estimated elevation of about 5,000 ft., with the south pole at a height of slightly less than 10,000 ft. The 14,000-mi. coast is largely inaccessible to ship navigation because of sea ice barricading the coastal shores.

History.—During the 1952 season, the Argentines increased their activities in their claimed sector of Antarctica by establishing an additional base on the northeastern tip of Palmer peninsula. The base, which was set up in the latter part of March, was named *Esperanza* (hope). In early February, when the British survey ship "John Biscoe" landed at Hope bay, the Argentines who were already there fired shots over the heads of the British landing party which was seeking to re-establish a base evacuated in 1949. The Argentine group prevented the landing by ordering the British not to disembark. The British in turn ordered their frigate "Burghead Bay" from the Falkland Islands. The Argentines later admitted that they had "acted in error," and the British finally landed stores and building materials without further interference. To substantiate their nations' claims, the British maintained five bases on the continent, the Argentines six and the Chileans three.

In early February the Norwegian sealer "Norsel" evacuated the personnel from the combined Norwegian-Swedish-British expedition which had conducted scientific research and geographical exploration in the Norwegian-claimed sector of Antarctica. From their wintering base Maudheim, seismological soundings were completed southward for a distance of 300 mi., and the thickness of the ice cap was determined to vary from 900 to 7,450 ft. Several hundred hitherto unknown square miles of land were mapped with the expedition's aircraft, and 500 mi. of coast line exactly delineated. Captain John Giaever of Norway was in command of the base since it was first set up in Jan. 1950. The scientific expedition was under the over-all direction of a Swedish glaciologist, Hans Wilson Ahlmann, and a Norwegian oceanographer, Harald U. Sverdrup.

In Jan. 1950 the French expedition, commanded by Paul-Émile Victor, established the Port Martin base in the French-claimed sector of Adélie Land to the south of Australia. In Jan. 1952 a relief party of 16 men arrived at the base on board the Norwegian chartered ship "Tottan." The day the ship was to sail north with the outgoing party, the main bunkhouse at the base was destroyed by fire. This necessitated abandonment of the station, and seven men were left at an auxiliary base which had been set up earlier about 70 mi. west of Port Martin. This base was located in close proximity to a rookery of about 4,000 penguins of the emperor type discovered by Andre Liotard. The men were to make an intensive study of penguin life over a period of one year.

The Australian government continued to maintain weather observing stations on Heard, Macquarie and Kerguelen Islands to the south of Australia. Plans were being made by P. G. Law, head of the Australian antarctic expeditions, for the establishment of technical research stations on the Australian-claimed sector of the antarctic continent. The snow-covered, icebound land had never been fully explored geographically nor geologically, and many Australian scientists believed it might contain vast mineral resources.

(F. RE.)

Anthropology. The year 1952 was one of marked activity and accomplishment in all branches of anthropology. Universities broadened the scope of their training programs, and research and publication proceeded at an accelerated rate, stimulated in part by increased support from foundations and other sources. Coincident with the wider recognition and acceptance of the important role of anthropology in human affairs was a healthy tendency on the part of anthropologists

to re-examine and define more sharply their objectives and to improve and refine their methods and techniques. As examples might be mentioned two papers analyzing and interpreting some of the social and psychological factors involved in culture change: "Experimental Design in the Study of Cultural Change," by George Spindler and Walter Goldschmidt, and "Some Dynamic Forces in Tlingit Society," by Frederica de Laguna, both published in the *Southwestern Journal of Anthropology*, and another group of papers in the *American Anthropologist* on "The Training of the Professional Anthropologist," by Theodore McCown, W. D. Strong, C. F. Voegelin and Z. S. Harris, W. N. Fenton, Eliot Chapple and Margaret Mead. With a Ford foundation grant, Cornell university, Ithaca, N.Y., established a field methods training program, under the direction of S. A. Richardson, to provide training in new techniques of interviewing and observation in the social science disciplines. At Stanford university, Stanford, Calif., the foundation also supported a new program, directed by Felix M. Keesing, which aimed at a broader, interdisciplinary approach to the problems of social change and the economic advancement of underdeveloped areas.

As part of a broad program for the assessment and better utilization of the human resources of the United States, the American Anthropological association joined the American Council of Learned Societies in circularizing its members to obtain precise information on their academic and professional background, research activities and specialized knowledge.

A number of international anthropological conferences and symposia were held during the year. The 30th International Congress of Americanists convened at Cambridge, Eng., in August, followed by the 4th International Congress of Anthropological and Ethnological Sciences, in Vienna, Aus., and the 2nd Pan-African Congress on Prehistory in Algiers in September. The Wenner-Gren foundation International Symposium on Anthropology, organized by A. L. Kroeber and a planning group of seven anthropologists, was held June 9-20 at the foundation's headquarters in New York city. The theme of the symposium was "A World Survey of the Status of Anthropology," and 80 anthropologists and other scientists from the United States and 18 other countries participated. The symposium was based on 50 background papers, each reviewing the present status of knowledge in a particular field and the problems arising therefrom. Cultural interchange between east and west, particularly between China and western Europe, was the subject of a symposium of the British Society for the History of Science held in London.

The Guggenheim Memorial foundation awarded 22 fellowships for work in anthropology and related fields. The Wenner-Gren foundation awarded 33 grants-in-aid and fellowships and initiated a project for preparation of a "Handbook of World Resources for Research and Education in Anthropology," to contain summary descriptions of the organization and operations of all institutions with interest in anthropology. Erminie W. Voegelin began preparation of the section on U.S. resources.

The Bureau of Ethnic Research, an information and research centre for the study of modern Indian groups in the southwestern United States, was established at the University of Arizona, Tucson, under the supervision of Emil W. Haury and William H. Kelly. Cornell university set up a social science laboratory at the Vicos hacienda in northern Peru with Allan R. Holmberg as director. The laboratory would study the effects of new health measures, agricultural methods, education and industrialization on the Indian inhabitants. A grant from the Carnegie Corporation of New York enabled Northwestern university, Evanston, Ill., to broaden its African area program by creation of a new African study centre, with Melville J. Herskovits as director. With the support of the Nuffield foundation of Great Britain the



INDIAN SKELETONS discovered on Santa Rosa Island, Calif., in 1952, by Philip C. Orr, anthropologist at the Santa Barbara Museum of Natural History. They were believed to be remains of an Indian culture more than 8,000 years old, whose members were stronger and taller than Indians whom the Spaniards met on reaching California

Royal Anthropological institute established the Nuffield Blood Group centre, with headquarters in London. The new organization would accumulate and analyze data on human blood groups, make its results available to research workers and carry out or stimulate field work. A series of radio broadcasts on the "Ways of Mankind" was begun at the University of California at Los Angeles, under the direction of Walter Goldschmidt. The program, sponsored by the National Association of Educational Broadcasters with a grant from the Ford foundation, would attempt to dramatize the basic concepts of anthropology and sociology for school audiences and the public.

Viking fund medals were awarded to Ralph Linton, general anthropology, Carleton Coon, physical anthropology, and Frank H. H. Roberts, archaeology. Kaj Birket-Smith was named Huxley memorial lecturer for 1952, and Rivers memorial medals were awarded to L. S. B. Leakey and Monica Wilson. Brewton Berry received the Ainsfield-Wolf award for his book *Race Relations*.

William S. Laughlin resumed his ethnological and physical anthropological work in the Aleutian Islands, and G. C. Lucier made a study of the nonmaterial culture of the Noatak Eskimos of northern Alaska, both projects supported by the Arctic Institute of North America. Frederica de Laguna and Catherine McClellan conducted ethnological work among the Tlingit of Yakutat bay, and Edmund S. Carpenter made a study of space and time concepts of the Aivilik Eskimos on Southampton Island, north of Hudson bay. Field research in South America by the University of California, Berkeley, included ethnological studies in Brazil by William D. Hohenthal, in Bolivia by John F. Goins and in Venezuela by H. T. McCorkle, Jr. Stig Rydén made a third expedition to the Tiawanaco area of Bolivia for the ethnographical department of the Gothenburg museum, Göteborg, Swed., and Kaj Birket-Smith of the National museum, Copenhagen, Den., conducted ethnological work on Rennell Island.

Ethnological studies of the Plateau tribes were made by Norman Lerner, Al and Letitia Mohr and Thomas Garth for the University of Washington, Seattle.

The second and third volumes of *Proceedings of the 29th International Congress of Americanists*, edited by Sol Tax and including selected papers on "Acculturation in the Americas" and "Indian Tribes of Aboriginal America," were published by The University of Chicago. The status of anthropological research in Alaska was discussed by Viola Garfield, Margaret Lantis, Frederica de Laguna, W. S. Laughlin and J. L. Giddings, Jr., in *Science in Alaska*, a volume of selected papers of the first Alaskan Science conference, edited by H. B. Collins and published by the Arctic Institute of North America. The sixth edition of the Royal Anthropological Institute's classic manual, *Notes and Queries on Anthropology*, appeared in a new format and with completely revised contents covering physical and social anthropology, material culture and field antiquities. Karl Gustav Izikowitz' *Lamet, Hill Peasants of French Indo-China*, an integrated study of a little-known tribe in northern Laos, was published by the Gothenburg museum.

The methodology and scope of social anthropology were discussed by Raymond Firth in *Elements of Social Organization*, a volume that focused attention on the situation of primitive societies and peasant communities in the industrialized world of today. An interpretation of the archaeological data relating to primitive economy was presented by J. G. D. Clark in *Prehistoric Europe: the Economic Basis*. The most substantial contribution in the field of primitive economics was M. J. Herskovits' *Economic Anthropology*, an enlargement and revision of the author's standard reference work, *The Economic Life of Primitive Peoples*. Philip Mayer's "Two Studies in Applied Anthropology in Kenya" reported on field investigations on the economic life of the Gusii tribe.

The status of constitutional research and its relation to anthropology as a whole was discussed in an article by Edward E. Hunt, Jr., "Human Constitution: An Appraisal," published in the *American Journal of Physical Anthropology*. Another article in this journal by W. W. Howells, "A Factorial Study of Constitutional Type," described an independent, statistical approach—the factorial method—for critical evaluation of the Sheldon system of somatotyping. One of the most significant contributions of recent years to the problem of Neanderthal man was F. Clark Howell's article, "The Place of Neanderthal Man in Human Evolution," published in the same journal. Howell emphasized the differences in morphology and age between the classic Neanderthals of the early fourth Glacial and the earlier forms (Ehringsdorf, Galilee, Saccopastore, Mount Carmel) of the third Interglacial, which made it necessary to differentiate between the two groups when considering their role in human phylogeny. The earlier Neanderthals resembled modern man in a number of physical characters, and the Mount Carmel population of Palestine is regarded as directly ancestral to modern man. The later, classic Neanderthals, descended from Ehringsdorf and Saccopastore types, represent a peripheral, isolated group that developed in western Europe at the beginning of the fourth Glacial period and became extinct either prior to or after the arrival of modern man who in the meantime had been developing farther to the east.

The last work of Robert Broom, *Swartkrans Ape-Man: Paranthropus Crassidens*, by J. T. Robinson as joint author, was published by the Transvaal museum, Pretoria, U. of S. Af. Other important publications of the year were *Human Locomotion and Body Form*, by Dudley J. Morton; *The Comanches; Lords of the South Plains*, by Ernest Wallace and E. Adamson Hoebel; *Symposium on Local Diversity in Iroquois Culture*, edited by William N. Fenton; *The Four Ages of Tsurai; a Documentary History of the Indian Village on Trinidad Bay*, by Robert F.

Heizer and John E. Mills; *Ainu Folklore*, by Carl Etter; *Bibliography of African Anthropology, 1937-49*, by W. D. Hambly. (See also ARCHAEOLOGY.) (H. B. Cs.)

Anti-aircraft Guns: see MUNITIONS OF WAR.

Antibiotics: see BACTERIOLOGY; CHEMOTHERAPY; NUTRITION, EXPERIMENTAL; RESPIRATORY DISEASES; STOMACH AND INTESTINES, DISEASES OF THE.

Antigua: see LEEWARD ISLANDS.

Antimony: see MINERAL AND METAL PRODUCTION AND PRICES.

Apples: see FRUIT.

Apricots: see FRUIT.

Aqueducts. The golden jubilee year of federal reclamation in the United States was signalized in 1952 by the integrated operation of the aqueducts, power plants and other facilities on some of the largest multiple-purpose water conservation projects in the world.

Established under the Reclamation act approved by Pres. Theodore Roosevelt on June 17, 1902, the national water resource program on its 50th anniversary embraced 69 projects which in 1951 (latest crop year) furnished a full or supplemental supply of irrigation water for 125,000 farms, consisting of 6,713,000 ac. in the 17 western states.

Facilities on these projects included more than 18,000 mi. of canals and laterals, 5,500 mi. of drains, 108 storage and 71 diversion dams, 331 major pumping plants and 10,550 mi. of operating roads.

Farmers on reclamation projects raised crops with a new all-time, all-high gross value of \$821,722,000, the sixth consecutive year that crop values exceeded the \$500,000,000 mark. The cumulative value of reclamation crops produced since 1906 was \$7,983,529,000, approximately seven times the total investment in all irrigation features on all reclamation projects.

The year 1952 was highlighted by the placing in service of three outstanding irrigation pumping plants—the Grand Coulee pumping plant on the Columbia Basin project in Washington, the Tracy pumping plant on the Central Valley project in California, and the pumping plant on the Colorado-Big Thompson project.

When in full operation, each of the 12 giant pumps in the Grand Coulee plant would lift more than 1,000,000,000 gal. of water daily 280 ft. out of the Columbia river to irrigate more than 1,000,000 ac. of land in eastern Washington.

Aqueduct features on the Columbia Basin project include the Feeder canal whose 16,000 cu.ft. per second capacity is almost enough to carry the average flow of the Colorado river. Six major canals on the project have a combined length of 300 mi.

Integrated operation of man's longest and largest mass transfer of water was initiated in the Central valley of California. Under this program, Sacramento river water stored behind Shasta dam is delivered 500 mi. to dry lands in the San Joaquin river valley. At Tracy, Calif., giant pumps lift the water 200 ft. The project includes the 153-mi. Friant-Kern canal and the 120-mi. Delta-Mendota canal. The former delivers San Joaquin river water from Millerton lake behind Friant dam to areas as far south as Bakersfield, Calif. The latter transfers Sacramento river water from the San Francisco bay area southward 120 mi., discharging it into the Mendota pool in the San Joaquin basin, thereby providing irrigation water to replace that diverted by the Friant-Kern canal.

Three pumps with a combined capacity of nearly 500,000 gal. of water per minute were set in motion during the year at the Granby, Colo., pumping plant, high on the west slope of the Rockies, to supply irrigation water through the Colorado-Big Thompson project, for 700,000 ac. of land on the east slope. This project is famous for its 13-mi. Alva B. Adams tunnel,

the longest irrigation tunnel in the world, carrying the water through the continental divide.

Also included among the major aqueduct systems in the federal reclamation program was the All-American canal in California.

This waterway is 232 ft. in width at the water surface, 160 ft. wide at the bottom and 20.6 ft. in depth with an initial capacity of 15,155 cu.ft. of water per second. The project includes the 125-mi. Coachella canal which branches from the 80-mi. All-American main canal near the Mexican border about 20 mi. west of Yuma, Ariz., and terminates near Indio, Calif.

(See also CANALS AND INLAND WATERWAYS; DAMS; IRRIGATION; TUNNELS.)
(M. W. Ss.)

Arabia. Arabia is a peninsula of southwestern Asia of approximately 1,027,300 sq.mi., with a total population estimated at 9,277,000. It consists politically of two independent Arab states, Saudi Arabia (*q.v.*) and Yemen (*q.v.*); the protected sultanates of Oman and Muscat; the autonomous sheikhdoms of Bahrein, Kuwait, Qatar and the Trucial sheikhdoms; and Aden colony and protectorate (*q.v.*). Language: Arabic. Religion: Moslem (Sunni).

Bahrein.—Area: 213 sq.mi. Pop. (1951 est.): 110,000. Capital, Manamah. Ruler: Sheikh Sir Sulman ibn Hamad al Khalifah. British political resident for the Persian gulf area in 1952, Sir Rupert Hay; political agent for Bahrein, W. S. Laver.

Kuwait.—Area: c. 9,000 sq.mi. Pop. (1951 est.): 170,000. Ruler, Sheikh Abdullah bin Salim al-Subah. British political agent in 1952, C. J. Pelly.

Oman and Muscat.—Area: c. 65,000 sq.mi. Pop. (1951 est.): 550,000. Capital, Muscat. Ruler, Sultan Said bin Taimur. British consul in 1952, Maj. F. C. L. Chauncy.

Qatar.—Area: c. 4,000 sq.mi. Pop. (1951 est.): 17,000. Ruler, Sheikh Ali bin Abdullah al-Thani.

Trucial Sheikhdoms.—Area: c. 16,000 sq.mi. (including the sheikhdoms of Sharjah, Ras al Khaimah, Umm al Qawain, Ajman, Dubai, Abu Dhabi and Kalba). Pop. (1951 est.): 80,000.

History.—The loss of Anglo-Iranian oil supplies, which had ceased in June 1951, had been more than made up by increased production from other neighbouring oilfields, including Kuwait where by the end of 1951 output was raised by 58%, and Qatar where the increase was 47%.

In the first half of 1952 this increased production was maintained from both fields.

In June, after an exchange of diplomatic notes, the British government rejected the Iranian claim that the Bahrein islands were an integral part of Iran. It maintained its contention that Bahrein was a state under British protection and that it would not recognize the Iranian claim to it or to any other territory belonging to any state under British protection in the Persian gulf.

In January a new well was discovered in Kuwait about seven miles from the main oilfield at Burgan. Early in the year the sheikh of Kuwait approved a development scheme for his capital. It foreshadowed the rebuilding of most of the city over a period of 15 years.

Early in the year the British protected trucial sheikhs made repeated representations regarding the delay in the development of their reputed oil resources.
(O. M. T.)

Economy.—Crude oil production in Bahrein, Kuwait and Qatar was as follows: *Bahrein* (1950) 1,500,000 metric tons, (1951) 1,509,000 metric tons, (1952, six months) 750,000 tons; *Kuwait* (1950) 17,018,000 tons, (1951) 28,327,000 metric tons, (1952, six months) 18,700,000 metric tons; *Qatar* (1950) 1,600,000 metric tons, (1951) 2,348,000 metric tons, (1952, six months) 1,534,000 metric tons.

Arab League: see EGYPT; IRAQ; JORDAN; LEBANON; MIDDLE EAST; SAUDI ARABIA; SYRIA.



SEGMENT of the colossal statue of a goddess found in the Temple of Poseidon near Corinth, Gr., in 1952, by archaeologists of The University of Chicago

Archaeology. Eastern Hemisphere.—Part of the archaeological news of the year 1952 pertained to actual excavations; a fair part also pertained to new understandings gained through the publication of reports on excavations done some time before but hitherto undocumented. With the appearance of Alfred Rust's *Die Höhlenfunde von Jabrud* (a Syrian cave), R. Neuville's *Le Paléolithique et le Mésolithique du Désert de Judée* (materials from Palestinian caves), and G. Caton-Thompson's *Kharga Oasis in Prehistory*, it became clearer that the near and middle east was an area of major importance during Pleistocene prehistoric times. The full delineation of the middle Pleistocene prehistory of east central Africa also became available with the appearance of L. S. B. Leakey's *Olduvai Gorge*. Important additions to the literature of the later ranges of archaeology also appeared.

A very heartening aspect of the 1952 field year was the return to their old excavations of so many of the various national professional schools of archaeology. The Louvre was again at work in Syria, the Germans in Turkey, the British at Jericho in Jordan, and the Italians at Phaistos in Grecian Crete. Thus the old familiar international character of field research continued to reassert itself.

Pleistocene Prehistory.—The most spectacular news was of finds from the continuing excavation of the rock shelter near Angles-sur-l'Anglin, Vienne, Fr. There, in a Magdalenian context, Dorothy Garrod and Suzanne de Saint-Mathurin extended their clearance of the magnificent frieze of life-sized relief sculptures of ibexes, horses and human figures. This art was dated at about 12,000 years ago.

A. C. Blanc described the finding of semifossilized human footprints in a deep cave near the village of Toirano, Liguria, It. The prints, which were rather short but broad and with a vigorous little toe, were found in association with footprints and bones of the cave bear. This extinct animal is usually found in context with Neanderthal man in Italy, and Blanc suspected that the prints might be those of Neanderthals.

The Near-Middle East.—In Egypt, Zakaria Goneim discovered and began clearance of a great 3rd dynasty pyramid terrace,



MAIN CEMETERY of ancient Eleusis, Gr., where extensive excavations were conducted by G. E. Mylonas of Washington university, St. Louis, in 1952. The graves, built over each other and next to each other, dated roughly from 1800 B.C. to 25 B.C.

with a carefully laid limestone enclosure wall and the remains of a step pyramid. The complex resembled that of the step pyramid and enclosure attributed to Zoser, but was structurally more advanced; it was never completed, and its attribution to a particular pharaoh was not yet certain. The Oriental institute's Luxor expedition concentrated on the triumphal relief of She-shonk I, on the Bubastite gate.

Several expeditions worked with considerable success in Iraq. The Iraqi Directorate-General of Antiquities continued its restoration of the great Parthian desert fortress of Hatra. At Nippur, D. E. McCown's joint University museum (University of Pennsylvania, Philadelphia)-Oriental institute (The University of Chicago, Ill.) expedition recovered a very large cache of Sumerian literary texts and some interesting architectural details in the scribal quarter. In other areas an imposing temple of the goddess Inanna was provisionally traced and an earlier (first half of the third millennium B.C.) temple was discovered. A group of Sumerian statues was recovered, and the season's finds made a great contribution to the understanding of Nippur's character as a great religious and literary centre of ancient Sumeria and Babylonia.

Northward in ancient Assyria, M. E. L. Mallowan's British School of Archaeology in Iraq (Baghdad)-Metropolitan Museum of Art (New York city) excavations at Nimrud—the capital in which Assur-nasir-pal II accumulated the great treasures his armies had won—recovered a fine collection of large ivory carvings, a variety of small objects, commercial and historical texts and fragments of a series of monumental reliefs. One of the ivories showed a lioness killing a Nubian in a field of lotus blossoms and was inlaid with gold, lapis lazuli and carnelian.

Another important pre-World War II expedition—that of the Louvre museum (Paris) under André Parrot at Mari on the

Syrian Euphrates—resumed its work. The core of an Early Dynastic ziggurat was tested, and more of the familiar Mari carved bone figures and sculpture were recovered.

In Jordan, Kathleen Kenyon's joint British and American schools expedition recommenced work at the site of biblical Jericho. Miss Kenyon's preliminary note in *Antiquity* added much needed clarity to the understanding of the "neolithic" settlement, which is known to have been of considerable size and apparently fortified. An architectural distinction is possible between the prepottery and the pottery bearing layers. An international expedition of the various schools in Jerusalem searched about 40 caves in the Dead sea area for further documents of the "Dead Sea scroll" type. A pair of inscribed bronze scrolls was recovered, which it was believed might contain Old Testament documents, but their unrolling would be difficult as the metal had crystallized. The American school continued its work at the Moabite site, Dhiban; the French proceeded at Tell al-Farah.

The Israel Department of Antiquities, under S. Yeivin's direction, undertook a number of excavations. The cave of Kabbara was reopened for its prehistoric materials, the deeper levels in the southeastern part of the site of Khirbet Kerak were tested to virgin soil with an "Early Bronze I" yield, even earlier materials were examined at Afula, and a Hyksos cemetery was excavated near Naan. At Caesarea the accidental discovery of a statue led to extensive excavations in the Graeco-Roman period.

The new *Israel Exploration Journal* was appearing, with articles in western European languages and a fine quality of illustration.

In Turkey, the government Antiquities service was relatively inactive. The British Institute of Archaeology at Ankara resumed work at Sultan Tepe (probably ancient Harran) and more clay tablets were recovered; the school's new journal, *Anatolian Studies*, appeared in a very interesting first issue. The

long-range German program of work at Bogazkoy, the Hittite capital, recommenced under Kurt Bittel, Hans Guterböck and R. Naumann.

Clearance in the acropolis and in storerooms of the largest temple was being undertaken, and a rich cremation cemetery was under excavation.

In Iran only the work of the French under R. Ghirshman at Susa was proceeding, in later historic levels. Froelich Rainey, director of the University museum, carried on an archaeological reconnaissance in Afghanistan.

Classical Lands.—There was considerable activity on Cyprus. At the University museum's site of Kourion, S. Weinberg continued architectural clearance of the earlier "Late Bronze Age" levels, and G. H. McFadden proceeded with the excavation of the sanctuary of Apollo. At Paphos the British under T. B. Mitford began work on the mound of the old town and recovered Cypriote, Mycenaean, Geometric and Archaic Greek materials. Joan Taylor of the London institute excavated a "Late Bronze Age" sanctuary at Pigadhes. Claude Schaeffer published the spectacular metal and faience finds of the 1949 French season at Enkomi.

On Crete the Italian school under Doro Levi resumed its work at the palace of Phaistos. The earlier levels of the installation were tested, rich finds of the handsome "Kamares" pottery were made, and there was a suggestion—through lack of pottery of the early Minoan type in a contact zone—that some compression might be necessary in the Cretan chronology. At Knossos the British school under Piet de Jong and Sinclair Hood undertook the clearance of four late Minoan tombs which appeared during construction work for a new hospital. Pottery, seals, a sword and a fine early Greek helmet were recovered.

The 16th season of excavations of the American School of Classical Studies in the Athenian agora was devoted to the clearing up of the market place, during which the foundations of a 1st-century temple of Ares appeared. Fragments of a 5th-century B.C. altar of Ares and of a 4th-century figure of muse type were found, and walls of various periods were traced. Some earlier Mycenaean and Protogeometric graves were cleared. Both the American school and Oscar Broneer of The University of Chicago were at work in the Corinth district. The German school had reopened its Athens headquarters. Work on the restoration of the Greek museums was seriously curtailed by the cessation of Marshall Plan funds.

In Italy Amedeo Maiuri, long-time director of the Scavi di Pompeii e di Ercolano, Naples, had laid plans for uncovering the two-fifths of Pompeii which still lies under ash. The excavation of houses in the southeastern quarter, near the Palestra and the amphitheatre, had begun. A magnificent series of Roman mosaics was being uncovered in a large villa near Piazza Armerina in Sicily. G. V. Gentili believed the villa to date to the 3rd century and to have been inhabited for several centuries; because of the lack of Christian symbols in the mosaics, Gentili believed the villa must have remained in the hands of a line of patricians of pagan persuasion.

Italian excavations under L. B. Brea on the Aeolian islands of Panaria and Lipari yielded an interesting series of antiquities from "neolithic" to Greek times, with suggestions of early contact from Crete and possibly western Asia. J. B. Ward-Perkins, of the British school in Rome, continued excavations on the site of Sabratha in Tripolitania, a city once inhabited by Phoenicians, Romans and Byzantines.

Europe.—Little news was available from eastern Europe; the Czechoslovakian *Archeologické Rozhledy* contained brief notes on various post-Pleistocene finds in Czechoslovakia and Poland. From Yugoslavia D. Garasanin reported in *Arkeoloski Vestnik*, 1952, on a very fine stylized human head of baked clay, found

near the town of Pristina; the head was assigned to the later Vinca phase. In Britain J. G. D. Clark completed his work at Star Carr on the important "mesolithic" bog site. Various municipal and college training program excavations were reported from England and Scotland: the fortifications of Norwich, the Roman wall at Dorset, Saxon huts and Roman buildings at Canterbury, a "neolithic" site in the East Anglian fenlands, and a pair of Yorkshire barrows were among the things tested. At Jarlshof on the Shetland Islands, J. R. C. Hamilton cleared the foundations of the broch tower and its surrounding stone huts of the Pictish village of c. 2,000 years ago.

India.—The Deccan research group under H. D. Sankalia established a five-part relative chronological scheme for their area by excavations in sites running from Pleistocene down to Moslem times.

(R. J. B.)

Western Hemisphere.—The annual meeting of the Society for American Archaeology was held at Columbus, O., May 1-3, 1952, and the principal topic of discussion was the techniques and results obtained by the radiocarbon dating method developed by W. F. Libby and his co-workers at Chicago, Ill. Among other problems discussed was that of contamination of samples by radioactive dust created by the atomic bomb tests since 1945. Since the recent tests in Nevada this had become particularly serious and fieldworkers were advised to place samples in air-tight containers as soon as they were collected. The Institute of Nuclear Studies at The University of Chicago was engaged in the development of a scintillation counter to replace the grid counter which was being used. This not only promised to extend the range of dating, but might also shorten the time necessary to make the determinations and increase accuracy. In addition to the laboratories at The University of Chicago, Columbia university and the University of Michigan which were operating and producing dates of archaeological and geological samples,

PICTISH VILLAGE of Jarlshof as excavated in the Shetland Islands, Scot., an Iron Age settlement contemporary with Roman rule in southern Britain. Excavations, undertaken by the ministry of works, were in their final phases in 1952. Foreground shows the courtyard of the broch (circular stone tower enclosing apartments) and wheelhouses



other laboratories were being set up at Yale university and at the universities of Pennsylvania, California, Texas and Colorado. Several other institutions were considering such installations.

Early Man.—The remains of a mammoth skeleton were excavated near the village of Santa Isabel Ixtapan in the dry bed of Lake Texcoco, 18 mi. N.E. of Mexico City and about 1 mi. from the locality where the Tepexpan skeleton was discovered. Luis Aveyra and Manuel Malonado Koerdell of the Dirección de Prehistoria, Instituto Nacional de Antropología e Historia, who were in charge of this work, discovered flint artifacts in association with the bones. Three United States specialists, as well as a number of Mexican archaeologists, were invited to observe the continuation of the work. Six artifacts were discovered in close association with the partially disarticulated elephant and one of these was a projectile point very similar to the Scottsbluff type. This clear-cut evidence of man in late Wisconsin glacial times was buried in the lake deposits of the Becerra formation.

Another mammoth with artifacts associated was discovered in southern Arizona, just north of the Mexican border, by Fred Navarrete of Naco, Ariz. This was reported to the Arizona State museum at the University of Arizona, Tucson, and a party headed by Emil Haury of the university continued the excavation. A total of eight projectile points of the Clovis Fluted type were found in direct association with the skeleton; five of them were discovered in place by the museum party. Ernst Antevs, a Pleistocene geologist who was present at the excavation, estimated a minimum age of 10,000 years.

Work was continued on an early man site at Lind Coulee in the eastern part of the state of Washington. This excavation, under the direction of Richard D. Daugherty of the State College of Washington, Pullman, had produced more than 100 artifacts.

Arctic.—In Eskimo archaeology, particular interest had centred on the problem of the Dorset culture. The first information about Dorset dwellings came from excavations made by Deric O'Bryan at Mill Island. Bernard G. Hoffman published a short but highly significant paper (*American Antiquity*, vol. 18, no. 1) which utilized the recently available dating of late Pleistocene events and of the Dorset-related early cultures of the northeastern United States to examine the possibility of whether these cultures could have derived their traits from Dorset. He suggested that such early cultures as the Old Copper culture of Wisconsin and the Lamoka, Frontenac and Laurentian cultures of New York state may be in part ancestral to Dorset rather than the reverse.

A party from Peabody museum, Harvard university, Cambridge, Mass., headed by Wilbert Carter, continued excavations begun in 1951 in prehistoric sites in the vicinity of Point Barrow, Alsk. This work was supported by the office of naval research and based at the Point Barrow Arctic Research laboratory.

James van Stone of the University of Alaska, College, made an archaeological survey of sites on Nunivak Island, and J. L. Giddings, Jr., of the same institution examined some limestone caves in the headwaters region of the Firth river in northeastern Alaska and made collections of dendrochronological specimens in the same area.

W. S. Laughlin headed a party from the University of Alaska which continued the program of research in the Aleutian Islands. Work was concentrated in the eastern islands and particular attention was paid to the dating of an early lamellar flake industry. On the basis of radiocarbon dates, Laughlin estimated that prehistory of the islands had been traced back for about 4,000 years.

Pacific Coast.—Charles E. Borden, University of British Columbia, Vancouver, continued excavations at the deep site which

he discovered in the Musqueam reserve in 1951. A number of artifacts were recovered and material from the lower levels was markedly different from the protohistoric Musqueam remains in the upper levels. The same investigator salvaged the finds from a site in Vancouver city. These consisted mostly of stone bowls and perforated stones.

The University of Washington, Seattle, had several parties in the field. Carroll A. Burroughs conducted the summer field session at a shell midden site on San Juan Island. Douglas Osborne assisted by several students made a survey of the Okanogan region, investigated several caves in central Washington, and continued excavations in the McNary reservoir on the Columbia river near Pasco, Wash.

The annual Northwestern Archaeological conference was held at the University of Washington, May 2-3, 1952. It was attended by about 150 people.

In California, A. E. Treganza excavated two sites in Calaveras county, a continuation of the salvage work in Farmington reservoir under the University of California Archaeological survey. These were both late prehistoric sites and one continued to be inhabited until about 1870.

A class in field methods was directed by William J. Wallace at a shell mound site located on Little Sycamore creek in Ventura county. A limited range of artifacts was found, including pitted hammerstones, manos, metates and a few large projectile points. Five flexed burials were found. A well-developed calcareous layer, incrustation on the artifacts, as well as the types of objects found, suggested that the occupation was rather old.

Southwest.—The Anthropology section of the Southwestern Division of the American Association for the Advancement of Science met at Boulder, Colo., on May 2. The greater part of the meeting was devoted to a symposium on Colorado prehistory. The annual Pecos conference was held at Santa Fe, N.M., Aug. 11-13.

The University of Colorado field school, directed by Robert Lister and Herbert Dick, co-operated with the Denver Museum of Natural History party headed by Marie Wormington, continuing the excavation of caves near Grand Junction, Colo., which was begun the previous year. Additional evidence was accumulated on the preceramic and preagricultural occupation of the area.

The University of New Mexico field school was held in two sections. One, under the direction of Florence Hawley Ellis, excavated at the Pojoaque, near Santa Fe. This pueblo was abandoned about 50 years earlier. The other section, under Paul Reiter, completed the excavation of a cave in Lincoln county.

The field school of the University of Arizona was again located at Point of Pines. Under the direction of Emil Haury, the students excavated a Tularosa Phase site and tested in several villages dating between 700 and 1000 A.D.

T. L. Smiley published an important paper on southwestern dendrochronology ("A Summary of Tree-Ring Dates from Some Southwestern Sites," University of Arizona *Bulletin* 22, no. 4). This compilation listed 5,612 dated specimens from 365 separate sites and gave discussions of the archaeological significance of the dates. Another development, not listed in the above publication, consisted of additions to the Southwestern Tree-ring calendar from Basket Maker II sites near Durango, Colo. The calendar extended to 58 B.C. and the earliest bark date was 46 A.D.

Plains.—The University of Nebraska, Lincoln, was host to the ninth Plains Conference for Archaeology on April 11 and 12. Donald D. Hartle described the excavation of Rock Village, an early 19th-century Hidatsa site located in Garrison reservoir in North Dakota. The houses discovered conform very well

to descriptions of Hidatsa dwellings of that period. The excavation of Fort Stevenson, a military post established late in the last century directly across the Missouri river from this Hidatsa village, was described by Hubert Smith.

A seriation of collared and uncollared rims from seven Upper Republican sites in Nebraska was presented by George Metcalf. This study promised to measure change within the ceramics of this cultural phase, but the existing data did not indicate which end of the sequence was most recent. E. Mott Davis of the Nebraska State museum, Lincoln, reported on the work of that institution at the Red Smoke site. This was an early preceramic station on Lime creek in the Medicine Creek reservoir area. The most important finding was the association of Plainview and Meserve types of projectile points in the same levels.

Eastern United States.—The Illinois State museum, Springfield, issued the fifth volume in its scientific series, the first devoted to archaeology (*Hopewellian Communities in Illinois*, edited by Thorne Deuel). The five papers in this volume added to the evidence that there was cultural change within the Hopewell culture. It was most interesting that the cultural complex which had been determined to be early Hopewell (radiocarbon date about 0-200 B.C.) had a number of similarities to the comb-ceramic cultures of Siberia and Japan.

The museum at Ocmulgee National monument, near Macon, Ga., was completed and opened to the public. It was one of the best arranged of the smaller archaeological museums.

The archaeological research of Florida State university, Tallahassee, was centred on preceramic sites in southern Jefferson county. The number of these sites discovered indicated that there was a fairly large early population. Ripley P. Bullen of the Florida park service excavated a Weeden Island period site at the Manatee Springs state park. Many artifacts were found in the small village site but unfortunately Bullen did not succeed in working out house patterns, a badly needed type of information for this period.

James A. Ford of the American Museum of Natural History, New York, N.Y., conducted brief exploratory excavations at the Poverty Point site in northern Louisiana. An examination of aerial photographs revealed that there is a remarkable arrangement of six concentric earth embankments lying to the east of the 70-ft. high mound that stands on this site. The outermost embankment is three quarters of a mile in diameter. Trenches across these embankments demonstrated that they are artificial and were constructed during the period of the preceramic Poverty Point cultural complex. The entire construction seemed to be related to an old channel of the Mississippi river which geological studies had dated as about 1500 B.C. However, the radiocarbon date for a site of the same culture, excavated the preceding year in Mississippi by Ford and Philip Phillips of Harvard university, was 399±80 B.C.

Middle America.—The most spectacular discovery of the year was made in the Temple of the Inscriptions at Palenque, Mex. For the last four field seasons Alberto Ruz Lhuillier of the Instituto Nacional de Antropología e Historia had been engaged in clearing a rubble-filled stairway that was discovered underneath a stone slab that forms part of the floor of the temple. This stairway led down to the base of the 20-m. pyramid which forms the foundation for the building. In the spring of 1952 a stone doorway was discovered at the foot of the stairs and this gave access to a vaulted chamber. The walls of this chamber were covered with typical Maya paintings, somewhat damaged by lime deposits. In the centre of the chamber was a sealed stone sarcophagus richly carved in low relief and sitting on low stone blocks. Late in the year, this casket had not been opened because considerable preliminary work was necessary to ensure that the heavy stone lid could be raised without damage to the

box or its contents.

The Carnegie Institution of Washington, D.C., continued its Maya area program. The map of the numerous house mounds at Mayapán was completed and several of the smaller structures excavated. Graves were discovered beneath the house floors. R. E. Smith also dug in one of the many cenotes at the site. This had a stairway leading down to the water and an artificial platform on the floor of the cavern. E. M. Shook completed a study of the great wall which surrounded the city, and T. Proskouriakoff began recording the numerous sculptures that had been found.

J. Charles Kelley and a party of 14 students from the Southern Illinois university, Carbondale, excavated a series of sites in the vicinity of Durango, Mex. Their most important results were secured at a large mountain-top site north of Durango where stone-walled houses were arranged on terraces. The architectural aspects of this site appeared Mexican, but the artifact contents seemed to be more closely related to the southwest. The majority was plain buff and plain redware, with minor percentages of simple red-on-brown and red-on-buff. This new cultural phase promised to assist in filling the gap that was formerly thought to exist between the cultures of Mexico and the southwestern United States.

South America.—Stig Rydén of the Gothenburg museum, Göteborg, Swed., terminated a year of work at Cochabamba and other sites in Bolivia. Excellent results were secured but unfortunately he was not granted permission to export study collections. This delayed report of his findings.

In Peru, Duncan Strong of Columbia university headed a party working in Nazca valley. Stratigraphic excavations in refuse deposits had clarified the chronology of this portion of the south coast which had formerly been deduced from cemetery finds.

The Instituto de Archaeología de la Serena of Chile continued investigation of problems of Diaguita culture. (See also ANTHROPOLOGY.) (J. A. FD.)

Archery. The 68th annual National Archery association tournament was held at Jackson, Mich., Aug. 4-9, 1952, with 148 archers participating. Several new records were established at this time. The championship scores of the winners in

Target Archery

Men's championship	Robert Larsen, Phoenix, Ariz.
Scores: Double York round	279-1,653
Double American round	180-1,460 3,113
Ladies' championship	Ann Weber Corby, Denville, N.J.
Scores: Double National round	143-1,103
Double Columbia round	142-1,188
Double American round	180-1,388 3,679
Junior boys' championship	Robert Schafer, Kalamazoo, Mich.
Scores: Double Hereford round	276-1,760
Double American round	180-1,288 3,048
Junior girls' championship	Lorna Price, Phoenix, Ariz.
Scores: Double National round	143-977
Double Columbia round	144-1,112
Double American round	179-1,335 3,424
Intermediate boys' championship	Ronald Ockerman, Fairborn, O.
Scores: Quadruple Jr. American round	359-2,631
Intermediate girls' championship	Ann Marston, Wyandotte, Mich.
Scores: Double Columbia round	144-1,016
Double Jr. American round	179-1,277 2,293
Beginner boys' championship	Gary Dustin Hall, Tecumseh, Mich.
Scores: Quadruple Jr. Columbia round	277-1,762
Beginner girls' championship	Judy Myrick, Chicago, Ill.
Scores: Quadruple Jr. Columbia round	88-364

Crossbow

Men's championship	George M. Stevens, Marcella, Ark.
Scores: Double American round	180-1,252
Double American round	172-1,068 2,320
Ladies' championship	Alice Smith, Jackson, Mich.
Scores: Double American round	150-770
Double American round	145-757 1,527

Clout Shoot

Men	(36 arrows at 180 yd.)	Max Hamilton, Phoenix, Ariz.	36-268
Ladies	(36 arrows at 140 yd.)	Ann Corby, Denville, N. J.	36-266
Ladies	(36 arrows at 120 yd.)	Sylvia Wesendank, Little Rock, Ark.	36-280
		Jean Lee, Greenfield, Mass.	
Boys	(36 arrows at 120 yd.)	Bob Schafer, Kalamazoo, Mich.	36-276
Girls	(36 arrows at 120 yd.)	Lorna Price, Phoenix, Ariz.	36-298

the men's, women's and junior divisions were as shown in the table.

The Phoenician Archers (Phoenix, Ariz.) with a team of four men again won the men's team round event (96 arrows at 60 yd.) with a total score of 378-2,582. The North Detroit Archers of Detroit, Mich., won the ladies' team round (96 arrows at 50 yd.) with a total score of 380-2,566. Mrs. Ann Weber Corby of Denville, N.J., topped the previous records in the double national and double Columbia rounds. Competition between Mrs. Corby and Jean Lee, champion for the previous three years, was keen and scores were close throughout the entire tournament.

The 69th annual tournament of the National Archery association was to be held at Amherst, Mass., Aug. 10-14, 1953.

Jean Lee of Greenfield, Mass., captured the world women's championship crown for the second time when she participated at Brussels, Belg., July 23-28, 1952. Her total score was 3,815. Mrs. Jean Richards of Laguna Beach, Calif., took second place with a total score of 3,035.

The team round was won by the archers of the United States.

The 1953 world championships were to be held at Madrid, Sp., July 22-28.

(L. E. Bs.)

Architecture. Among the chief factors influencing the architectural profession in the United States during 1952 were the easing of government controls on key building materials and credit financing, coupled with a realization on the part of investors that building costs were not likely to decline for an extended period and might mount appreciably in the foreseeable future. The early part of the year was unmarked by any great change from that of 1951. Government and defense building still represented the major share of large projects. Various surveys and reports indicated that roughly one-half of the architectural firms experienced some decline in business but that one-quarter of the firms reported a definite rise which was largely tied in with government and defense industry contracts. Beginning in the second quarter of the year, acceleration was noted in new work covering a broader range of projects as well as modernization work on most classes of structures.

The quality of work executed was notable. Serious effort was directed toward enhancing the efficiency and "livability" of both commercial and domestic structures that promised to have important social and economic significance in all parts of the country. Seldom before had the amenities of comfortable living and working conditions been more widely considered. This applied in factories, laboratories, office buildings, institutions, housing projects, apartments, private residential work and throughout most types of buildings.

From the aesthetic point of view, the major works showed high standards of distinction in design marked often by a restrained purism and sparing use of thoughtfully controlled enrichment, as in Skidmore, Owings and Merrill's new Lever house in New York city.

From the engineering point of view, the year was marked by further experimentation in methods of construction, new materials and ingenious employment of mechanical equipment. For example, one of the first buildings in America to utilize prestressed concrete as a structural system was erected on the new \$9,000,000 campus of Manhattanville college at Purchase, N.Y., from the designs of Eggers and Higgins. Among other structural innovations of interest were the 75-ft.-span light ribbed timber roof employed by E. J. Bartel in Newton, Kan., and the 222-ft. diameter thinly spun dome of the Jordan Marsh store in Shoppers' World at Framingham, Mass., designed by Ketchum, Gina and Sharp.

Governmental Buildings.—The United Nations' group in New York, as the conference building and the general assembly

building were completed, proved the outstanding architectural attraction for critics. While the secretariat building was described on one hand as a potential fragmentation bomb in case of war, on the other the whole group was interpreted as a laboratory for the engineering of world peace. The architects' whole conception became more apparent as the project drew toward completion and respect mounted for the collaborative design effort headed by Wallace K. Harrison.

Office Buildings.—For the first time since World War II, the desire to achieve office buildings that are also civic monuments manifested itself in several cities. In some of these, potential revenue was sacrificed to attain distinguished design results and increased desirability of occupied space. Most conspicuous of these was Lever house in New York city, which utilizes a splendid open court with fine planting effects which permanently protect the light source of the glass-sheathed main mass of the building and add distinction, although reportedly sacrificing a potential \$200,000 per year of valuable rental space in order to do so.

The new 41-story Prudential building by Naess and Murphy, which was under construction in Chicago, Ill., was designed to offer its tenants unusual luxury services, rather than competitive rents.

The Alcoa building, Pittsburgh, Pa., by Harrison and Abramovitz, dramatically capitalized on its Golden Triangle location. Using aluminum extensively for exterior wall panels the building was, perhaps, the lightest weight building of comparable dimension. It used ingenious sealed yet easily washed from the inside windows, inside ceilings, ducts and piping in conjunction with a steel frame, fireproofed with foam concrete. Rino Levi's new co-operatively owned and occupied office building in São Paulo, Brazil, used glass of graded translucence on each of its 15 stories on the cool fronts and employed solid walls largely on those fronts exposed to intense sunlight.

Schools and Colleges.—Unusual activity continued in the construction of public schools. Except in congested urban areas, there was a marked trend toward low spreading buildings, often employing noise-buffer courts and easy relationship to the out of doors. Attractiveness and increased livability from the pupil's point of view were admirably achieved, as in Flewelling and Moody's new El Segundo (Calif.) public school and the Portola Junior high at El Cerrito, Calif., by Miller and Warnecke. Activity in college and university building was highlighted by the spectacular Ciudad university near Mexico City, where Carlo Lazo co-ordinated the services of 140 architects in designing a new campus to accommodate 26,000 students with facilities which included a stadium seating 110,000. Frank Lloyd Wright's continuation of his notable project of a new campus for Florida Southern college, Lakeland, Fla., was of marked architectural interest.

Hospitals.—The year saw the completion of the 40th Veterans administration hospital since the end of World War II. Among the many hospital projects of merit should be mentioned the New York University Bellevue Medical centre and the medical centre for Ohio State university, Columbus, both by Skidmore, Owings and Merrill; St. Mary hospital, Pueblo, Colo., by Fisher and Fisher; and the neurology building at Philadelphia General hospital by Harbeson, Hough, Livingston and Larson.

Suburban Merchandizing Centres.—The marked trend in development of large-scale suburban extensions of metropolitan shopping facilities continued unabated as highlighted in Detroit's \$18,000,000 Northland Shopping centre by Victor Gruen and San Francisco's \$6,000,000 Macy store in the Hillsdale development by Welton Becket and Associates.

Housing Developments.—Under continuing authorization of the Federal Housing act of 1949, 50,000 housing units were



Above: SKELETON of the dome capping the General Assembly building at U.N. headquarters in New York city. The Assembly hall was completed late in 1952. In the background looms the slablike Secretariat building



Above, right: LEVER HOUSE in New York city, an all-glass-and-metal structure chosen as one of three First Honor award winners in 1952 by the American Institute of Architects. Skidmore, Owings & Merrill, architects

Right: MODEL of the new cathedral to be erected at Coventry in Warwickshire, Eng., designed by Basil Spence and on view in the Royal academy exhibition in 1952



Below: STADIUM of Rice institute in Houston, Tex., with separated upper tier for greater ease of evacuation, ventilation and closeness of all seats to the stadium field; it could disgorge 70,000 persons in ten minutes. Lloyd, Morgan and McGinty, architects



undertaken in the first half of 1952. Added to other thousands of units which were privately financed, the total was impressive in numbers, but small compared with the need. During the first seven months of the year it was estimated that 670,000 homes were started (about 1½% less than in 1951).

In the field of small houses, the contractor-sponsored "estate" grouping was pronounced but the trend was to offer the purchaser more space for his money and increasingly the builder found it financially advisable to enlist the professional services of the well-trained architect to assure the success of his project. The large-scale residence continued to be a highly exceptional occurrence but the moderate size house geared to informal, efficient and pleasant living was noteworthy in numerous cases, such as the Rawson house on Long Island, N.Y., by Petroff and Clarkson and the subtropical house for Roland Phillips at Miami, Fla., by Igor B. Plevitzky.

Industrial Building.—Among the many important industrial projects should be noted the Armstrong Cork laboratories near Lancaster, Pa., by Shreve, Lamb and Harmon; the Budd Co. Chase plant at Gary, Ind., by Giffels & Vallet and L. Rossetti; the TVA Kingston (Tenn.) Steam plant by the TVA division of design; and the completed first unit of Columbia Broadcasting's Television city in Hollywood, Calif., by Pereira and Luckman.

Ecclesiastical Building.—There were two buildings in Missouri by J. D. Murphy that command attention, namely, St. Peter's in Kirkwood and St. Ann's in Normandy. Percival Goodman and Associates' Temple Beth Israel at Lima, O., and Kivett & Meyer's synagogue and school in Kansas City, Mo., were resourceful designs of distinction, representing different aesthetic approaches to the problem.

In summary it can be said the architectural profession held its own both in quality and extent of work accomplished. While final figures had not yet been tabulated, it appeared that the U.S. departments of commerce and labour's estimate of \$32,200,000,000 of new construction for the year (about \$1,000,000,000 more than for 1951) would easily be reached.

(J. G. V. D.)

Great Britain.—In Great Britain 1952 was remarkable less for the completion of any spectacular buildings than for gradual but steady progress in realizing plans laid in previous years. Among a number of excellent schools completed to the designs of the London County council architect's department (Robert H. Matthew, architect in charge) was a primary school for 100 children at Benbow street, Deptford. The construction was of a light welded, galvanized steel frame with walls of precast concrete slabs. Another L.C.C. school (one of the first schools to use prestressed concrete) was built in Poplar to the designs of Cecil Handisyde in association with Hammet and Norton; Felix S. Samuely was consulting engineer. The system, designed for a multistory structure, was as follows: structural columns of *in situ* reinforced concrete; main beams of prestressed concrete soffits with precast trough-shaped units between and *in situ* concrete poured on top to bond the whole into one monolithic structure.

A large housing scheme at Priory Green, Finsbury, London, designed by Tecton with Skinner, Bailey and Lubetkin as executive architects, was occupied during the summer. It comprised 269 flats in two eight-story and four four-story blocks. Construction—the same for all blocks—was reinforced concrete cross walls varying from 5 in. to 7 in. in thickness, with reinforced concrete floor slabs 4½ in. thick. The main elevations were divided into panels with an infilling of 4½-in. brickwork with straight vertical joints, separated from an inner lining of 2¼-in. cell concrete by a 2-in. air cavity. The ends of the reinforced concrete cross walls were covered by cast-iron downpipes, and

the edges of the floor slabs with horizontal gutters, both of rectangular section.

The "Commonwealth house" was exhibited on a site near New bridge, Middlesex. Designed by C. A. V. Smith and J. P. Meckridge, an Australian architect, it was intended mainly for export. In view of the shortage of skilled building labour in the colonies, the aim was to produce a house capable of quick erection by average handymen and occupying the minimum of shipping space. It was hoped eventually to produce 20,000 of the houses each year. The estimated cost for a minimum of ten houses was £1,150 each (free on board). The total floor area provided was 905 sq.ft.

In the new towns housing was well under way: most spectacular were the large blocks of flats (small though the proportion of these to houses would be). At Sish lane, Stevenage, Hertfordshire, the firm of Yorke, Rosenberg and Mardall was responsible for a group of buildings which included a seven-story block. This was constructed with a reinforced concrete box frame with no projecting beams or columns. Where cross wall and floor slabs projected beyond the main building face they were covered with blue-gray frostproof eggshell glazed tiling. Flank walls were finished outside with panels of 4½-in. brick in Flemish bond, the headers having snapped ends facing outward and allowed to project to random lengths, giving a rich textural effect. The whole scheme comprised 110 flats in all with 54 flats in the seven-story block and the rest in two- and three-story blocks.

By the end of the year demolition of the temporary Festival of Britain exhibition buildings on the South Bank site, London, was completed. Several of the buildings in the downstream section were retained, among them the Telekinema for use as the National Film theatre, and the former administration building for use as offices by the Council of Industrial Design.

South Africa.—A number of tall office and flat buildings were erected in Johannesburg. Nearly all of them exhibited similar characteristics: a frank expression of the grid structure in the elevations; unpretentious but well-considered detailing; and well-balanced handling of texture and pattern. Groot Drakenstein, a typical block of luxury bachelor flats, was 13 stories high, all flats consisting of a single living room with dining recess and balcony, and separate kitchen and bathroom. The framework was reinforced concrete with a panel infilling of red and plum-coloured rustic bricks. The architects were H. H. Le Roith and Partners.

Europe.—Denmark.—In Copenhagen a 14-story office building was completed to the designs of Mogens Jacobsen and Alex Poulsen. The structure was of reinforced concrete with a facing of prefabricated panels. Two noteworthy small houses both showed American influence. One at Vedbaek, built by the architect Haldor Gunegsson for himself, acknowledged a debt to Frank Lloyd Wright with its brick walls, shingle roof and large sliding glass doors. The other at Hellebaek near Elsinore, again built by an architect, Jorn Utzon, for himself, was nearer in manner to the houses of the San Francisco bay region. All the outer walls were of glass but for the north wall which was of yellow bricks and entirely without windows. The roof was surfaced with aluminum.

France.—Plans for the new Paris headquarters building for the United Nations Educational, Scientific and Cultural organization were published in November. The estimated cost of the building was £2,750,000. The money would be made available as an interest-free loan by the French government. The architects were Marcel Breuer (U.S.), Bernard Zehrufuss (France) and Eero Saarinen (U.S.), with Pier Luigi Nervi (Italy) as engineer. A consultant advisory panel included Lucio Costa (Brazil), Walter Gropius (U.S.), Le Corbusier (France), Sven Markelius (Sweden) and Ernesto Rogers (Italy). The site chosen was one

bordering the Bois de Boulogne between the Porte Dauphine and the Porte Maillot. The scheme comprised three main blocks: a 16-story slab structure containing offices and, in a lower block, a hall for conferences; linking them would be a rectangular four-story block containing the delegates' lounges, committee and board rooms, patios, restaurant, library and ancillary rooms. The structure would be of reinforced concrete throughout. (See also BUILDING AND CONSTRUCTION INDUSTRY; HOUSING; TOWN AND REGIONAL PLANNING.) (I. R. M. M.)

Areas and Populations of the Countries

of the World. The political entities of the world are listed here with their areas, populations and number of persons per square mile. The latest census or official estimates are given for each country. Areas in square miles are in accordance with the boundaries for the year of the population figure unless otherwise noted. Some of the later boundary adjustments had not been recognized at the end of 1952 by the U.S. government. The subtotals for colonial groupings within continents do not carry density figures.

Where two figures are given for a country, the most recent is used in the continental and world totals.

The table provides a fundamental basis for country comparisons.


Areas and Populations of the Countries of the World—Continued

Name of continent and state	Area (in sq.mi.)	Population (in thousands)	Persons per sq.mi.
British colonies, dependencies, condominium, protectorate and protected state	23,800	535	
French colonies	9,199	123	
New Zealand	103,416	1,940	18.8
New Zealand dependencies and trusteeship	1,656	103	
United States possessions, territory and trusteeship	7,402	601	
†EUROPE (exclusive of U.S.S.R.)	1,903,915	397,115	208.6
Albania	11,100	1,200	108.1
Andorra	191	6	31.4
Austria	32,375	6,919	213.7
Belgium	11,783	8,678	736.5
British colonies and dependencies	124	333	
Bulgaria	42,796	7,310	170.8
Czechoslovakia	49,330	12,340	250.2
Denmark (excl. Greenland, incl. Faeroe Islands)	17,109	4,335	253.4
Estonia	18,357	1,200	65.4
Finland (including Åland Islands)	130,159	4,051	31.1
France	213,010	42,239	198.3
Germany (1937 area, 1939 population)	181,742	69,317	381.4
Germany (1952, including Saar)	137,452	70,954	516.2
Greece (including Aegean Islands)	51,182	7,631	149.1
Hungary	35,893	9,390	261.6
Iceland	39,768	145	3.6
Ireland, Republic of	26,602	2,959	111.2
Italy (1951)	116,224	47,021	404.6
Latvia	25,395	2,100	82.6
Liechtenstein	61	14	229.5
Lithuania	25,173	3,000	119.2
Luxembourg	1,010	300	297.0
Monaco	0.6	21	35,000.0
Netherlands	12,868	10,286	799.3
Norway (including Spitzbergen)	149,161	3,295	22.1
Poland (pre-World War II)	150,052	35,339	235.5
Poland (1952)	120,359	25,500	212.9
Portugal (incl. Azores and Madeira Islands)	35,415	8,606	249.6
Rumania	91,654	16,200	176.8
San Marino	38	13	342.1
Spain (including Canary Islands)	194,945	28,306	145.2
Sweden	173,390	7,073	40.8
Switzerland	15,940	4,806	301.5
Trieste, Free Territory of	293	372	1,269.6
United Kingdom	94,501	50,370	533.0
Vatican City	0.5	1	2,000.0
Yugoslavia (after Sept. 15, 1947)	99,181	16,441	165.8
U.S.S.R. (1939)	8,173,557	170,467	20.9
U.S.S.R. (1950 area, 1950 pop. est.)	8,598,700	201,300	23.4
NORTH AMERICA	9,375,934	223,608	23.8
British colonies and dependencies	21,060	2,886	
Canada	3,843,144	14,430	3.8
Costa Rica	19,238	825	42.9
Cuba	44,217	5,523	124.0
Danish colony (Greenland, including ice cap)	840,000	23	0.03
Dominican Republic	19,129	2,167	113.3
El Salvador	13,176	1,920	145.7
French territory and departments	1,206	573	
Guatemala	45,452	2,887	63.5
Haiti	10,748	3,112	289.5
Honduras	59,160	1,505	25.4
Mexico	760,373	25,715	33.8
Netherlands overseas territory (The Netherlands Antilles)	403	166	411.9
Nicaragua	57,145	1,088	19.0
Panama (excluding Canal Zone)	28,575	805	28.2
United States	3,022,387	157,505	52.1
United States possessions	590,521	2,478	
SOUTH AMERICA	6,856,975	112,310	16.4
Argentina	1,079,965	17,641	16.3
Bolivia	416,040	3,054	7.3
Brazil	3,286,170	53,377	16.2
British colonies and dependencies	90,681	433	
Chile	286,323	6,032	21.1
Colombia	439,714	11,266	25.7
Ecuador	104,510	3,077	29.4
French department (French Guiana)	34,740	26	0.7
Netherlands overseas territory (Surinam)	55,212	223	4.0
Paraguay	157,047	1,425	9.1
Peru	482,258	8,405	17.4
Uruguay	72,172	2,365	32.8
Venezuela	352,143	4,986	14.2
AFRICA	11,570,031	196,499	17.0
Belgian colony and trusteeship	925,907	15,237	
British colonies, dependencies, protectorates, trusteeships and condominium	2,998,207	68,813	
Egypt	386,110	20,729	53.7
Eritrea	47,875	1,100	23.0
Ethiopia	350,000	10,000	28.6
French colonies, trusteeships, protectorates, departments and overseas territories	4,221,467	51,495	
Italian trusteeship	198,000	1,247	6.3
Liberia	43,000	1,350	31.4
Libya	679,340	1,124	1.7
Portuguese colonies	794,959	10,559	
South-West Africa (mandate of Union of South Africa)	317,725	430	1.4
Spanish colonies and protectorate	134,715	1,597	
Tangier, International Zone of	232	172	741.4
Union of South Africa	472,494	12,646	26.8
ANTARCTICA	6,000,000	Uninhabited	
ASIA (exclusive of U.S.S.R.)	10,541,576	1,289,550	122.3
Afghanistan	251,000	12,000	47.8
Arabian desert	193,000	Largely uninhabited	
Bhutan	18,000	300	16.7
British colonies, dependencies, protectorates, protected state and independent state under British protection	245,902	10,781	
Burma	261,749	18,674	71.3
Ceylon, Dominion of	25,332	7,743	305.7
China (35 provinces, including Formosa, Kwantung and South Manchurian railway, Manchuria and Tibet)	3,876,956	475,000	122.5
French overseas territory and associated states	272,548	27,897	
India, Republic of	1,138,814	356,892	313.4
Indonesia	583,479	76,500	131.1
Iran	634,413	20,000	31.5
Iraq	168,040	5,100	30.3
Israel	8,084	1,605	198.5
Japan	146,690	84,400	575.4
Jordan, Hashemite Kingdom of	37,110	1,320	35.6
Korea	85,225	30,000	352.0
Kuwait	9,000	170	18.9
Lebanon	3,470	1,285	370.3
Mongolian People's Republic	606,000	885	1.5
Nepal	54,000	7,000	129.6
Netherlands New Guinea	151,789	1,020	6.7
Oman and Muscat	65,000	550	8.5
Pakistan, Dominion of	365,907	75,687	206.8
Philippines, Republic of the	115,600	21,400	185.1
Portuguese colonies	8,876	1,427	
Qatar	4,000	17	4.3
Ryukyu Is. (U.S. occupied territory)	935	929	993.5
Saudi Arabia	597,000	6,000	10.1
Syria	72,200	3,517	48.7
Thailand (Siam)	198,272	18,836	95.0
Trucial Sheikhs	16,000	80	5.0
Turkey	296,185	20,935	70.7
Yemen	31,000	1,600	51.6
AUSTRALIA and OCEANIA	3,303,607	13,314	4.0
Australia	2,974,581	8,539	2.9
Australian dependency, territory and trusteeship	183,553	1,473	

*In computing the world density the area of Antarctica is omitted.

†Areas and populations of Baltic republics included in 1950 U.S.S.R. totals.

Argentina. A republic occupying the southeasternmost section of South America, Argentina is bounded on the north by Paraguay, Bolivia and Brazil; on the south and west by Chile; and on the east by Uruguay, the River Plate and the Atlantic ocean. It is the second largest Latin-American nation—only Brazil is larger—with an area of 1,079,965 sq.mi. and a population of 17,641,000 (est. 1951), mostly of European ancestry. The capital and leading port, Buenos Aires, has 3,371,000 inhabitants (est. 1950). Other leading cities are: Rosario, 467,937; Córdoba, 369,886; Avellaneda, 279,572; Eva Perón (La Plata), 271,738; Lanús, 242,760; Tucumán, 194,166; Santa Fé, 168,791; Lomas de Zamora, 125,943; Mar del Plata, 114,729; Mendoza, 105,328; and Bahía Blanca, 112,597. Religion: Chris-



tian, mostly Roman Catholic. President in 1952: Gen. Juan D. Perón (*q.v.*).

History.—During 1952 the Perón regime, although apparently secure in power, continued its curtailment of civil liberties and blamed foreign interference for the difficulties faced by the nation. The economic situation continued bad, although some attempts were made to correct it.

President Perón started the year with conciliatory gestures by announcing that he expected a loyal opposition and by freeing some political prisoners, including two deputies. These peaceful overtures, however, did not last very long. In mid-January 61 persons, including 25 women, were arrested for belonging to an association known as the "Board for Better Social Conditions," which was identified as an opposition group. Several incidents of people jailed for opposing the regime were reported by the press.

The cost of living was reported to have gone up 80% since Sept. 1949. The Argentine peso, valued at 4 to U.S. \$1 in 1947, reached 30 to U.S. \$1 in the black market. The drought had been severe during the last two years and the government's economic policy had not provided any incentive for farmers to increase production. The nationalization of the railroads had not produced the economic benefits expected. Fares had been increased, but no improvement of the property or the rolling stock had been made.

The government blamed the economic crisis on increased consumption in Argentina and abroad. The Unión Cívica Radical, leading opposition party, however, quoted official statistics to prove that the crisis was caused by curtailed production. In 1941 Argentina produced 8,150,000 tons of wheat compared with 5,200,000 tons in 1949; in 1941 it produced 10,238,000 tons of corn compared with 6,788,000 in 1949; in 1941, 22,232,000 tons of linseed were produced while in 1949 only 11,876,000 tons were grown. In 1941 there were 20,517,000 ha. under cultivation while in 1949 there were only 15,876,000 ha. cultivated.

In February Perón announced an austerity plan to increase production and reduce consumption. He set the example by giving up one month of his own salary, and urged the nation to utilize food to the maximum extent possible and to reduce wastage. Two meatless days a week were proclaimed throughout the nation, gasoline consumption was reduced by 50%, ten Argentine consulates abroad were closed, payments to farmers were increased 33%, all production was to be increased 20%, cattle were not to be slaughtered until they had attained full growth, prices were frozen, and salaries were to be increased according to a set scale. These raises would include all increases since 1949.

Further control and centralization was promised by Perón in a speech to provincial governors when he announced that in the future all public works would be controlled by a federal council; the national congress would pass a penal code for the entire nation and the codes approved by the provinces would be repealed; the ministry of education would exercise greater control over all schools; and all social welfare activities would be under the Eva Perón foundation. Perón also announced that the organization of the Peronista party would be decentralized and moved to the provinces in order to develop more party leaders.

Although a new United States ambassador, Albert F. Nufer, was appointed in April, relations between the two countries remained cold and distant. Early in the year Saul S. Saulson, a U.S. citizen, was arrested for alleged participation in local

MASSES OF FLOWERS for Eva Perón banking the street near the General Confederation of Labour building where her body lay in state in Buenos Aires, Arg. Señora Perón died on July 26, 1952

politics. Later Roberto Mujica Lainez, Argentine employee of the United States Information service, was arrested and held for more than nine hours. Perón told a visiting delegation of United States businessmen that he welcomed foreign capital, but so far foreign investments in Argentina had been few. The United States was blamed for plots against the government and Perón.

In March when the national congress met, with women for the first time holding 26 legislative seats, Perón and J. Hortensio Quijano were proclaimed president and vice-president respectively. Final revised figures for the Nov. 1951 elections were announced. The Peronista party received 4,745,168 votes; the Unión Cívica Radical 2,415,795; the Partido Demócrata (Conservative) 175,399; the Communists 71,318; the Socialists 54,920 and about 10,000 votes were scattered among minor parties. Quijano died prior to his inauguration and a minor constitutional crisis developed because there was some confusion as to the manner of designating his successor. In September congress designated Adm. Alberto Teisaire, president of the senate, as vice-president of the republic.

On July 26 Eva Perón's death shocked the nation. Thousands of Argentines paid their last respects to Señora Perón as her body lay in state, thus proving her popularity and hold on the masses. Her husband assumed the functions she had fulfilled in the ministry of labour and the Eva Perón foundation. Prior to her death La Pampa territory was redesignated Eva Perón province and after her death the city of La Plata was renamed in her honour.

(J. McAd.)

Education.—On June 30, 1951, there were 15,874 primary schools with 2,446,138 pupils and 101,646 teachers. There were 2,069 public secondary, normal and special schools with 360,917 students and 46,204 teachers; 32 autonomous schools with 2,544 students and 206 teachers; and 1,132 private schools with 153,926 students and 4,993 teachers. There were national universities at Buenos Aires (41,325 students), La Plata (7,409), Córdoba (9,355), Cuyo (2,596), Tucumán (3,191) and the national university of the Litoral at Santa Fé (16,325). University professors totalled 3,621. In 1951 there were 2,190 motion-picture theatres with seating capacity of 957,209.

Finance.—The monetary unit is the peso, valued on Aug. 28, 1952, at \$0.1333 U.S. currency, basic rate; \$0.2000, preferential rate; and \$0.0714, free market rate. The 1953 budget as approved by congress in Sept. 1952 allocated 8,320,900,000 pesos for the national administration (to be covered by general revenues estimated at 8,354,500,000 pesos), 1,110,000,000 pesos for public works and other capital expenditures (to be covered by borrowing), 3,657,600,000 pesos for autonomous agencies (self-balancing) and 2,703,000,000 pesos for special accounts (self-balancing). Allocations for the 1953-58 five-year plan were to be made later. Expenditure of the national administration amounted to 5,102,300,000 pesos in 1950; general revenue was 5,202,300,000 pesos. The national debt was 18,158,400,000 pesos on Dec. 31, 1950 (Dec. 31, 1949: 15,194,500,000 pesos), of which 15,996,900,000 pesos represented the funded debt and 2,161,500,000 pesos the short-term floating debt. The debt figures did not include the floating debt at call or the debt of the official agencies and of provincial and municipal governments. Currency and subsidiary money in circulation on Aug. 31, 1952, totalled 15,153,000,000 pesos, and on that date the Central bank had gold holdings of \$268,000,000. The cost of living index (Buenos Aires) stood at 314 in April 1952 (1948 = 100).

Trade and Communications.—Exports in 1951 were officially valued at 6,709,200,000 pesos and imports at 10,491,900,000 pesos (provisional figures). Leading exports were cereals and linseed (23%), meat (16%), wool (14%), hides (9%) and forest products (5%); leading imports, machinery and vehicles (19%), iron and steel and manufactures (15%), fuel and lubricants (10%), textiles (10%) and timber (9%). Leading customers were the U.S. (18%), the United Kingdom (18%), Brazil (10%), Italy (7%) and Germany (7%); leading suppliers, the U.S. (20%), Brazil (9%), the United Kingdom (7%), Germany (6%) and Sweden (5%).

Railway mileage (1949) totalled 26,923 and that of the national highways about 43,500. Registered motor vehicles on Jan. 1, 1951, included 275,000 cars, 140,000 trucks and 16,000 buses. Argentine air lines flew 9,481,300 mi. in 1951 and carried 296,100 passengers. According to *Lloyd's Register of Shipping*, the merchant marine (June 30, 1951) consisted of 363 steamers and motor ships (100 tons and over) aggregating 979,210 gross tons.

Agriculture.—Production figures for the crop year 1951-52 were officially reported as follows (in metric tons): wheat 2,050,000; rye 87,000; barley 349,000; oats 442,000; millet 214,000; maize 1,990,000; linseed 302,300; sunflower 660,000; raw cotton 399,000; rice (rough) 191,000; tobacco 35,100; yerba maté (1951) 106,200; sugar cane (1950-51) 8,415,600. Exports in 1951 (metric tons) included wheat 2,454,900; maize 297,900; linseed 181,000; oats 112,500; barley 154,500; rye 203,000.

The livestock census of July 1, 1947, showed 41,268,470 cattle, 7,237,663 horses, 50,856,556 sheep, 2,981,406 pigs and 4,933,679 goats. Wool exports in the wool year ending Sept. 30, 1952, were reported unofficially at 96,061 bales, of which 61,935 bales went to the U.S. In 1951, 1,652-

582 frozen beef quarters, 118,688 mutton carcasses and 788,436 lamb carcasses were exported. Quebracho extract exports (including re-exports) totalled 258,000 metric tons in 1951.

Manufactures.—Industrial establishments numbered 101,884 in 1947 (65,803 in 1943). Industrial employment in June 1950 totalled 917,700 persons, of whom 210,600 were employed in the food and beverage industries and 132,900 in the textile industry. Official production figures for 1951 included portland cement 1,540,600 metric tons; flour 2,013,000 tons; soap 147,400 tons; paper 141,473 tons; quebracho extract 218,100 tons; cotton yarn 91,320 tons; manufactured gas 274,924,000 cu.m.; electric energy 4,718,007,000 kw.hr.

Mineral Production.—Petroleum production totalled 3,889,600 cu.m. (about 25,150,000 bbl.) in 1951. Production of lead totalled 35,736 metric tons and zinc 31,480 tons. Coal imports were 2,167,600 metric tons, about two-thirds of which came from the U.S.

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Arizona. Arizona, called the "Grand Canyon state," lies in the southwestern part of the United States, being bounded on the west by the Colorado river and Nevada and on the south by Mexico. The area is 113,575 sq.mi. The population (1950 census) was 749,587, an increase of 50.1% over that of 1940, 416,000 being urban and 333,587 rural. Whites composed 81.2%, Negroes 3.5% and Indians 8.8%. Based on increased school attendance, the population for 1952 was estimated at 827,113. The capital, Phoenix, had (1950) a population of 106,818; Tucson, 45,454; Mesa, 16,790; Douglas, 9,442; Yuma, 9,145; Glendale, 8,179; Tempe, 7,684; Flagstaff, 7,663; and Prescott, 6,764.

History.—State officers (1952), all Democrats except the Republican governor, were: chief justice, Levi S. Udall; governor, J. Howard Pyle; secretary of state, Wesley Bolin; treasurer, E. T. Williams, Jr.; attorney general, Fred O. Wilson; superintendent of public instruction, Marion L. Brooks. Since state elections occur every two years, the legislature was the same in 1952 as in 1951, the senate Democratic and the house largely so. One act was the repeal of an initiative measure, approved at the general election of 1948, providing for a retirement fund for employees in state, county and school corporations. There were three provisions for state reorganization and the creation of new departments to be submitted to the voters in 1952. Provision was made for increasing salaries of state and county officials. Since the underground water level had fallen from 90 ft. to 300 ft. in places, Governor Pyle had asked for an underground water control measure. An appropriation of \$100,000 was secured for a new ground water commission. A second session for the year was called in July to make an appropriation to match the government appropriation for old-age security.

Education.—The public schools reported for 1951-52 an enrolment with number of teachers as follows: elementary schools, 138,287 and 4,363; high schools, 33,424 and 1,599. The larger cities also had a considerable number of secondary and elementary private schools and parochial schools.

Social Insurance and Assistance, Public Welfare and Related Programs.—The total number of recipients of state assistance in July 1952 was 20,124. The state welfare appropriations were: children's colony, \$274,836; industrial school, \$470,849; state hospital, \$1,768,189; crippled children service, \$275,000; pioneer home, \$173,157; prison, \$562,947; aid to the blind, \$244,796; dependent children, \$1,345,357; old-age assistance, \$3,916,500.

Communications.—The Arizona highway department reported the following mileage for 1952: state highways, 3,963; county roads, 15,368; federal aid highways, 2,514; national roads, 8,324. Railroad mileage was 2,617. The number of telephones, as of Aug. 31, was 182,993.

Table I.—Principal Crops of Arizona

	1952 Estimate	1951	Average, 1941-50
Barley, bu.	5,885,000	4,900,000	4,023,000
Wheat, bu.	468,000	572,000	571,000
Oats, bu.	550,000	369,000	386,000
Sorghums grain, bu.	1,350,000	1,092,000	2,076,000
Corn, bu.	525,000	320,000	388,000
Alfalfa seed, bu.	105,000	171,000	137,000
Flaxseed, bu.	52,000	126,000	520,000
Cotton, bales	1,050,000	803,000	249,000
Grapefruit, boxes	3,000,000	2,140,000	3,344,000
Oranges, boxes	1,050,000	730,000	992,000
Potatoes, bu.	1,487,000	1,387,000	1,292,000

Source: U.S. Department of Agriculture.

Table II.—Mineral Production of Arizona

(In short tons, except as noted)

Mineral	Quantity	Value	Quantity	Value
	1950		1949	
Clays	224,000	\$ 512,000	190,000	\$ 433,000
Copper	403,000	167,773,000	359,000	141,450,000
Gold (oz.)	118,000	4,141,000	109,000	3,815,000
Lead	26,000	7,123,000	34,000	10,607,000
Lime	52,000	718,000	44,000	608,000
Sand and gravel	2,499,000	1,590,000	1,512,000	971,000
Silver (oz.)	5,325,000	4,820,000	4,971,000	4,499,000
Stone	228,000	140,000	356,000	203,000
Zinc	60,000	17,176,000	71,000	17,523,000
Other minerals . . . . .	...	3,413,000	...	985,000
Total		\$207,406,000		\$181,094,000

Banking and Finance.—National banks, June 30, 1952, had deposits of \$405,999,727; loans and discounts, \$168,523,971; government securities, \$134,895,526. State banks had deposits of \$154,842,649; loans and discounts, \$48,085,558; government securities, \$67,299,637, the total being in excess of that of 1951. By the end of Aug. 1952, state tax collections reached \$37,634,086.16, the highest in the state's history, and there was a surplus in the treasury in excess of the state's debt.

Agriculture.—A report for 1951 placed the value of crops at \$298,364,000, and livestock and animal products at \$107,239,000.

Manufacturing.—In July 1952 there were 27,200 persons employed in manufacturing in the state. Wages for 1951 were \$64,491,802. The most important industries were: furniture, lumber and wood products, primary metal industries, clothing, food and kindred products. (H. A. H.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in Arizona during 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Arizona ranks first in the production of copper, second in asbestos, third in zinc and fourth in silver, and stands 15th in the value of mineral output, with 1.75% of the U.S. total.

Arkansas. Arkansas, a south-central state of the United States, was admitted to the union in 1836. Its area is 53,104 sq.mi., including 429 sq.mi. of water. The 1950 official census showed a population total of 1,909,511, a decline of approximately 40,000 since 1940. The 1950 census figures placed 67% of the population in rural areas compared with 77.8% in 1940. The population was listed as 77.1% native white, .5% foreign born and 22.3% Negro.

Little Rock, the capital city, had 102,213 inhabitants in 1950. Other principal cities are: Fort Smith, 47,942; North Little Rock, 44,097; Pine Bluff, 37,162; Hot Springs, 29,307; El Dorado, 23,076; Fayetteville, 17,071; Jonesboro, 16,310; Blytheville, 16,234; Texarkana, 15,875.

History.—Francis Cherry, Jonesboro judge, defeated incumbent Sidney McMath for the Democratic nomination for governor in the Aug. 12, 1952, primary by a vote of 237,448 to 139,052. Other principal state officers nominated in the 1952 primary (such nomination is tantamount to election in Arkansas) were: Nathan Gordon, lieutenant governor; Tom Gentry, attorney general; C. G. Hall, secretary of state; J. Oscar Humphrey, auditor; J. Vance Clayton, treasurer; Claude Rankin, land commissioner.

Education.—For the school year of 1951-52 Arkansas had 2,061 elementary schools with an enrolment of 333,822, and 635 secondary schools with an enrolment of 78,304. Total college and university enrolment for 1951-52 was 20,971. Teachers and principals in elementary schools numbered 7,576; in secondary schools, 5,764. Expenditures from state funds for the year ending June 30, 1952, totalled \$20,731,305. A. B. Bonds, Jr., was commissioner of education.

Social Insurance and Assistance, Public Welfare and Related Programs.—For the fiscal year ending June 20, 1952, old-age assistance grants in the amount of \$15,641,555 were paid to a monthly average of 60,045 recipients. A monthly average of 13,797 families received a total of \$6,257,423 for dependent children; an average of 1,907 blind persons received a total of \$614,843; and an average of 2,427 general relief cases received \$381,202.31. For the three months of April, May and June 1952, an average of 159 permanently and totally disabled persons received a total of \$12,914. Mrs. Henry Bethel was commissioner of welfare.

Unemployment benefits paid during the fiscal year totalled \$5,647,080, a weekly average of \$16.76 to 36,616 beneficiaries. Arkansas maintained one penitentiary and four reformatories at a total expense of \$689,533.16. These institutions housed an average of 1,552 adults and 252 juvenile inmates.

Communications.—Expenditures by the state government on highways during the fiscal year ending June 30, 1952, totalled \$27,000,000. At the end of that period, the state highway system comprised 9,992 mi. County highways, not in the state system, had a mileage of 55,228. Approximately 6,000 mi. of roads in the state system were paved, surfaced or graded. Main-track railway mileage was 4,236.15; airway mileage, 850. There were 85 airports and two seaports. Approximately 274,800 telephones were in use in the state.

Banking and Finance.—Arkansas had 178 state and 52 national banks on

Table I.—Principal Crops of Arkansas

Crop	Indicated 1952	1951	Average 1941-50
Corn, bu.	14,471,000	23,218,000	28,821,000
Cotton, bales	1,250,000	1,249,000	1,373,000
Cottonseed, tons	"	524,000	557,000
Hay, tons	901,000	1,294,000	1,462,000
Rice, 100-lb. bags	9,340,000	9,011,000	6,871,000
Soybeans, bu.	13,920,000	12,444,000	4,759,000
Oats, bu.	3,575,000	3,050,000	7,166,000
Potatoes, bu.	816,000	1,106,000	2,820,000
Sweet potatoes, bu.	420,000	518,000	1,483,000
Apples, bu.	270,000	510,000	582,000
Peaches, bu.	1,539,000	1,044,000	2,027,000
Grapes, tons	8,800	10,800	9,480
Pecans, lb.	2,700,000	5,350,000	3,950,000

*Not available.

Source: U.S. Department of Agriculture.

June 30, 1952. Deposits in state banks totalled \$383,179,000, resources \$417,988,000. Deposits in national banks totalled \$440,867,000, resources \$477,457,000. The six state and 35 federal savings and loan associations in Arkansas had combined resources of \$83,585,936. Real and personal property tax assessments, listed by law at 20% of value, totalled \$768,704,597. State treasury revenues during the fiscal year were \$101,207,000 and expenditures were \$99,699,000. Direct obligations totalled \$122,001,000.

Agriculture.—The U.S. bureau of agricultural economics estimated the value of crops harvested from 5,570,000 ac. in 1951 at \$454,562,000, an increase of \$24,577,000 over 1950. Production of field crops was 3% above 1950 but 2% below the 1941-50 average and 24% below the record production of 1948. Cotton was the state's most valuable crop in 1951, worth \$273,420,000. Rice ranked second with a value of \$45,055,000 (the second time in history that rice placed ahead of corn). The corn crop was valued at \$40,632,000; followed by hay, \$32,609,000; soybeans, \$32,354,000; and strawberries, \$6,259,000. Cash receipts to farmers from farm commodities sold during 1951 totalled \$564,519,000, a 10% increase over 1950. Of this total, livestock accounted for \$202,421,000, or 36% compared with 30% in 1940 and 26% in 1930.

Manufacturing.—Gross sales or receipts of all manufactured goods for 1951 totalled \$887,000,000, as reported by 3,389 manufacturing establishments. Wages in manufacturing during the year totalled approximately \$191,514,406 and were paid to a monthly average of 82,109 employees. During 1951, the state Resources and Development commission reported 103 new industrial plants established and substantial expansion made in 33 existing industries. The greatest number of new units were listed in food processing and chemical production plants. (S. McM.)

Table II.—Principal Industries of Arkansas

Industry	Gross sales or receipts 1951	1950
Food and kindred products	\$189,000,000	\$183,000,000
Chemicals and allied products	171,000,000	131,000,000
Lumber and products	166,000,000	181,000,000
Petroleum and coal products	90,000,000	95,000,000
Paper and allied products	61,000,000	64,000,000
Primary metal industries	45,000,000	48,000,000
Leather	25,000,000	26,000,000
Stone, clay and glass products	20,000,000	21,000,000

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in Arkansas in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Arkansas ranks first among the states in the production of bauxite and barite, and stands 22nd in the value of mineral output, with 1% of the U.S. total.

Table III.—Mineral Production of Arkansas

(Short tons, except as noted)

Mineral	Quantity	Value	Quantity	Value
	1950		1949	
Barite	343,000	\$3,089,000	363,000	\$2,907,000
Bauxite	1,464,000	7,532,000	1,226,000	6,434,000
Clays	461,000	996,000	434,000	1,067,000
Coal	1,169,000	8,883,000	962,000	7,535,000
Natural gas (thousand cu.ft.)	48,047,000	1,682,000	47,788,000	1,912,000
Natural gasoline (bbl.)	1,395,000	3,926,000	1,427,000	4,080,000
Petroleum (bbl.)	31,108,000	76,530,000	29,986,000	74,360,000
Petroleum gases (bbl.)	938,000	1,197,000	853,000	1,492,000
Sand and gravel	4,118,000	3,447,000	2,507,000	2,129,000
Stone	3,953,000	7,419,000	1,279,000	2,247,000
Other minerals . . . . .	...	3,941,000	...	5,360,000
Total		\$118,642,000		\$109,523,000

Armies of the World. Major developments affecting the ground forces of the world during 1952 were:

The North Atlantic Treaty nations met in Lisbon, Port., in February and agreed on the minimum forces necessary for the protection of western Europe.

The war in Korea continued to be stalemated just north of the 38th parallel with fighting confined to probing attacks until October, when the Chinese made a determined effort to capture the mountains protecting Seoul.

In Indochina the French gained momentary advantage in driving back the Viet-Minh in the beginning of the year only to lose

t in the Communist attacks during the fall. There was evidence of increased aid from the Chinese Communists to the Viet-Minh.

Great Britain was forced to use its troops to protect its rights in the Suez Canal Zone against Egyptian forces determined to drive all British from the area. A change in the Egyptian government followed the period of unrest and eased the crisis.

The sovietization of the eastern European armies continued, although there was also evidence of unrest and disaffection, particularly among the officer cadres.

North Atlantic Treaty Organization.—The council of the North Atlantic Treaty organization (NATO) met in Lisbon in February and reached agreement on the strength of the forces to be mobilized during 1952, the bases and facilities to be built, the creation of a six-nation European army, and the return of western Germany to equality and responsibility. The commitment for 1952 on the part of the member nations was for 50 divisions in various strengths of readiness.

The agreed-on principles for a treaty establishing the European Defense Community provided for an army comprising troops from six powers—France, West Germany, Italy, Belgium, the Netherlands and Luxembourg. This European army would be associated with the U.S. and British commonwealth troops under the common command of SHAPE (Supreme Headquarters, Allied Powers in Europe).

NATO forces conducted three main operations during 1952. In Operation "Holdfast," British, Dutch and Belgian troops practised defensive exercises. French and U.S. troops conducted airborne operations along the Rhine defense line in Operation "Equinox"; and in Operation "Ancient Wall" Italian Alpine troops practised the defense of key bases in the Alps.

In Exercise "Rosebush" two armoured divisions, the 1st French and the 2nd U.S., were charged with the mission of seizing Rhine bridges between Mainz and Coblenz, Ger. The U.S. 4th infantry division and 3rd French infantry division were to withhold the aggressor forces east of the Rhine for 72 hr. (See also NORTH ATLANTIC TREATY ORGANIZATION.)

United States.—The U.S. defense appropriation for the fiscal year 1953 (July 1, 1952–June 30, 1953) was \$46,610,938,912. The army's share of the budget was \$12,239,500,000.

Disposition.—During 1952 all of the regular infantry divisions were located overseas. Divisions stationed in the U.S. included two airborne, one armoured division and four national guard infantry divisions which had been called to active duty. Six U.S. divisions were engaged in Korea, two were stationed in Japan. In addition, the 7th army in Germany was composed of four infantry and one armoured divisions, plus a constabulary force.

Organization.—The average available strength of the army during 1952 was 1,552,000 men. Strength was maintained through the draft which had inducted more than 1,000,000 men since its resumption in 1950. During the year congress approved legislation which provided that the army would be backed by a portion of the 1,000,000-man ready reserve to be organized for the armed services. All other reserves would be in standby status. Standby reserves would be liable for service only in time of war or emergency declared by congress or when the ready reserve was exhausted. The congress also expressed its intent that veterans of Korean fighting should not be recalled for emergency service unless no other qualified reserves were available.

During 1952 the army recalled approximately 160,000 reserves for two-week periods of field training on a compulsory basis. Approximately 11,000 officers holding mobilization designations were required to report for 15-day mandatory training.

During the year the number of aircraft and pilots which were an integral part of the army increased greatly. Strength in aircraft and pilots numbered approximately 1,600, with a tenta-



GEN. DWIGHT D. EISENHOWER receiving the Médaille Militaire, highest French military honour, from Premier Antoine Pinay in May 1952. The general was taking formal leave of Paris as commander of Allied powers in Europe

tive goal of between 3,000 and 4,000 planes and helicopters. There was no army aviation corps or branch, but eight branches utilized aircraft organically: infantry, artillery, armour, engineers, signal corps, ordnance, transportation and medical corps. For example, each infantry division received 26 aircraft of which 10 were helicopters and the balance light aircraft for observation purposes.

Training.—Training exercises held by the U.S. during 1952 included Exercise "Pine Ridge," held in the Elkins, W.Va., area during August and September to train troops for cross-country operations in rough, mountainous terrain.

Exercise "Longhorn," held in Texas, was the largest army-air force manoeuvre held since World War II. Troop carrier operations were conducted in cross co-ordination with the technical air control system, making the radar control facilities in the forward areas direct air drops. This enabled much greater accuracy in dropping men and cargo to ground units in close proximity to the enemy. It also provided for the eventual elimination of "Pathfinder" techniques wherein advanced parties were dropped in a paratroop invasion area in advance to guide in the main force. New armoured techniques were also developed in Exercise "Longhorn," with the 1st armoured division making use of the 100th heavy tank battalion in company strength. Armoured-air co-ordination was improved with air force officers riding in the advance tanks. At the conclusion of the exercise, the 31st infantry division was air-transported from Texas to its regular training centre at Camp Atterbury, Ind.

A second major exercise, "Snowfall," tested 32,000 troops and about 200 aircraft in cold weather conditions. The exercise included air drops, night attacks and offensive and defensive operations with simulated atomic weapons. Major units engaged

in this exercise included the 11th airborne division and 3rd armoured cavalry. The principal objective in the exercise, in addition to testing equipment, was to determine what use could be made of airborne troops when facing atomic weapons.

The army announced that professional and scientific men called in the draft would receive only half the normal basic infantry training, to be immediately followed by specialists' training in such fields as physics, chemistry, engineering, etc.

Equipment.—A new lightweight air-to-ground plane was developed for the army during 1952 to provide close air-ground support. The FD-25 Defender with a speed range of 35 to 182 m.p.h., cruising range of 630 mi., was designed to provide battalion support. The plane carried forty 2.75-in. rockets, or 32 individually launched 2.75-in. rockets, or four 5-in. rockets. In place of the rockets the Defender could carry two 40-gal. napalm bombs or two 250-lb. general purpose bombs. The plane's fixed armament consisted of two .30-calibre machine guns.

Troops in Korea tested an all-nylon lightweight armoured vest weighing approximately eight pounds. The vest was designed as protection against mortar, grenade and shell fragments.

Exercise "Snowfall" provided a test for winter equipment. Camouflage was one of the major problems. No satisfactory winter boots had yet been developed. A larger arctic tent was required, as was better ski equipment.

Reports indicated that the army had developed atomic shells which could be fired from heavy artillery of the 8-in. howitzer type. Tests were conducted at Yucca Flat, near Las Vegas, Nev., with troops located in the area of atomic blasts. The artillery piece weighed 85 tons, was 280 mm. and was transported by front and rear tractors. It could be placed in a position and fired in 15 min. The range of the weapon was approximately 20 mi. (See also ATOMIC ENERGY.)

New equipment was developed for the army anti-aircraft command, including radar-controlled fully automatic 77-mm. guns and guided missiles. These were in addition to the 90-mm. and 120-mm. anti-aircraft guns.

An improved model of the jeep was produced. The new model cost less, consumed less gasoline, and had a splashproof ignition system for driving in shallow water. The new version was pow-

ered with a 72-h.p. engine, compared with the old 60-h.p., and had a machine-gun mount for protection of the crew.

A new M-48 or Patton-48 tank was tested by the army. The tank, which weighed 49 tons, was powered by a 810-h.p. air-cooled engine with cross drive transmission. It had a lower silhouette than any other U.S. tank and an egg-shaped sloping elliptical hull and turret, increasing the difficulty of shell penetration. This tank had wider treads than previous medium tanks. It carried a crew of four and mounted a high velocity 90-mm. gun with removable tube that could be quickly replaced in the field. It also carried two .50-calibre and one .30-calibre machine guns.

The M-47 tank was adopted as the new medium tank of the army. This tank weighed 48 tons, carried a crew of five, had an air-cooled 810-h.p. engine, and was equipped with a 90-mm. high-velocity gun. (See also MUNITIONS OF WAR.)

U.S.S.R.—The official version of the defense appropriation gave a figure of 23.8% of the record budget of \$119,000,000,000. This appropriation was approximately 18% larger than that for the preceding year. The increased budget was slated for additional production of guns and tanks and expansion to the armament industry.

Disposition.—There continued to be 36 Soviet divisions in east Germany, although only 22 of these divisions were at combat strength, totalling approximately 230,000 men. The remaining divisional headquarters were for administration of various technical units and anti-aircraft and anti-tank regiments. The 22 line divisions were believed to be at approximately 95% of strength (the normal strength of a Soviet division being around 8,000 men). It was reported that the class of 1930 was sent home from Germany and demobilized. There were reports, unconfirmed, that the Soviets planned to send additional line divisions to east Germany. In addition to the Soviet divisions in Germany, there were approximately four divisions in Austria and six in Poland. Two of the divisions in Poland were armoured. A strategic reserve of 30 combat divisions was reported to be stationed in the Minsk-Leningrad area.

Over-all strength of the Soviet army continued at approximately 175 divisions. However, in addition to regular troops, the Voluntary Society for Assistance to the Armed Forces continued to train approximately 16,000,000 civilians in various military techniques. This society engaged in training in rifles, grenade-throwing and other basic fundamentals of infantry fighting.

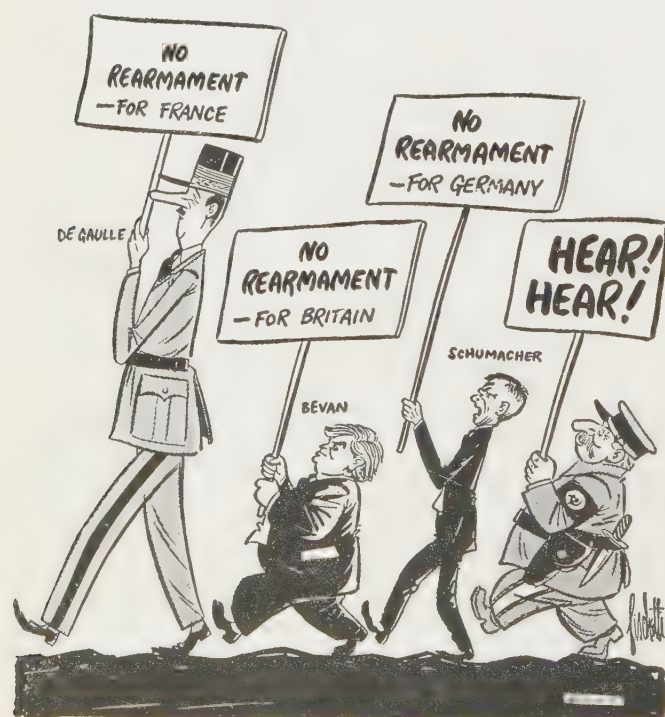
Reports indicated that the satellite nations had 70 active divisions under a peacetime establishment of 9,000 men to a division or a total of 630,000 men. The length of conscription in the satellite nations was two years and in some categories three. Estimated strengths in divisions included Poland 22, Hungary 16, Bulgaria 12, Rumania 15 and Czechoslovakia 15.

Equipment.—The Soviet group of armies in east Germany was refitted during the year with new field and anti-aircraft artillery and motor transport. This equipment was sent to the 18 tank or mechanized divisions.

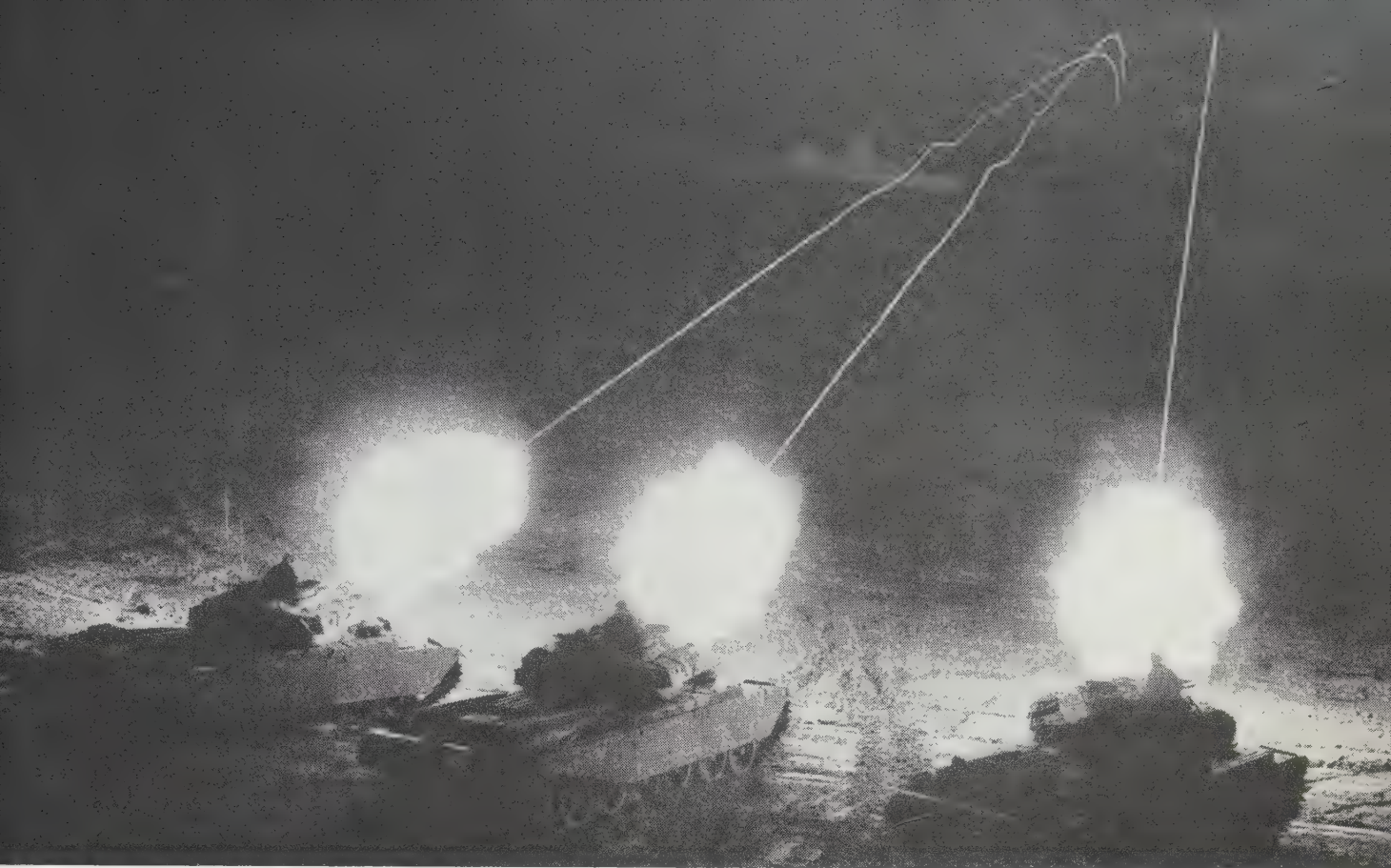
The U.S.S.R. also continued to rearm the satellite armies. All old heavy equipment such as tanks, guns and trucks were replaced by modern Soviet material. However, the transformation of the satellite infantry divisions into Soviet-type mechanized rifle divisions was reported to be making slow progress. The U.S.S.R. was reported to rate the efficiency of the satellite armies in the following order: Bulgaria, Hungary, Poland, Rumania and Czechoslovakia.

China.—*Nationalist.*—The military advisory group from the U.S. was doubled in size to speed the training of nationalist troops on Formosa. The army on Formosa totalled approximately 300,000 combat troops, with approximately the same number of troops in service units and headquarters.

Communist.—The Chinese Communist army numbered ap-



"IN STEP," a cartoon by Fischetti of the NEA Service, Inc., published in 1952



CENTURION MEDIUM TANKS firing tracer ammunition during night practice at Hühne in the British sector of Germany during 1952. The tracks on the film show the simultaneous firing of the shells and their trajectory

approximately 2,800,000 active troops, plus an estimated 2,000,000 reserve and garrisoned forces. The combat forces were grouped in four to six field armies containing between 75 and 100 divisions each. Of these troops approximately 900,000 were in Korea. There were only five artillery divisions with heavy artillery, and three armoured divisions with approximately 500 tanks, probably Soviet T-34s.

Very extensive training was being conducted in the military academy at Peking, as well as the artillery schools at Peking and Paoting, and armoured schools at Fengtai, Süchow, Nanking and Erumtsi.

Increased emphasis during the year was placed on modernizing the army and revising its tactics and training in order to provide increased firepower. Special artillery and armoured force commands were organized. Unconfirmed reports indicated the establishment of tank repair factories.

Reports indicated that the Chinese Communists planned to supplement the 18th division in Tibet with additional troops in order to dominate the Himalayan area.

The headquarters of the 4th field army, previously at Hanow, had been shifted to Canton. This shift took the army headquarters closer to the southeast coastal defenses.

According to an article written by Gen. Hsio Hua of the political department of the military council, "the Soviet army of today will be the model of the People's Liberation Army of tomorrow." The premier announced that Communist China had organized an armed militia of 12,000,000 men to act as reserve forces for the regular field armies.

France.—The French omnibus military appropriations bill totalled \$3,700,000,000, a record-high defense budget accounting for 33% of French government spending for 1952. The budget was an increase of 71% above that for 1951. It would make available to the North Atlantic Treaty Organization forces by 1953, eight combat-ready divisions with four additional divisions

ready for immediate mobilization. France expected \$625,000,000 worth of offshore contracts from the U.S. for its armament industry. The actual amount received was \$185,000,000, creating serious budgetary difficulties. There were reports that France would request additional British and U.S. troops to be sent to Europe in 1953 to make up for deficiencies that the French armament program could not meet.

European Defense Community.—One of the major problems facing France during the year was the ratification of the treaty on the European Defense Community. There was considerable objection in France to the treaty on the basis that it did not contain sufficient guarantees against the dangers of a rearmed Germany. (See also EUROPEAN UNION.)

The War in Indochina.—At the beginning of the year the Vietnam army consisted of approximately 60,000 regular troops with a similar number of auxiliary troops. This army relied largely on French officers, with approximately 3,750 serving in the Vietnam army formations. The major operational units were 35 battalions supplied with light arms from U.S. military equipment. There was no general staff and the Vietnam officers, totalling approximately 1,000, had only 4 colonels and 76 majors. The National Military academy produced 200 lieutenants every nine months. During the year the first regimental combat team was formed under Gen. Nguyen van Hinh, the first commanding general of the Vietnam army. The French shifted the command of the Vietnamese army to General Nguyen, and assigned the independent Vietnamese force to occupy captured areas and mop up guerrilla resistance. The Vietnamese forces concentrated on the development of armour, artillery, engineering and other specialized units.

The total number of troops in the anti-Communist armies in Indochina was approximately 300,000. Of these more than 55,000 were French. Another 130,000 were French Union troops (Moroccans, Algerians, Senegalese and Foreign Legion). Another 100,000 were Vietnamese.

The Viet-Minh forces numbered approximately 400,000 al-

though a large number of these were irregulars. There was an attrition of Viet-Minh strength during the early months of the year as a result of heavy fighting in the Tonkin war theatre. In this battle zone Viet-Minh regulars were well armed with basic infantry weapons but lacked heavy weapons, armoured vehicles and transport and had no air support. By the start of the rainy season in June, the French and allied forces had to a large degree driven the Viet-Minh forces from the Red river delta. From Nov. 1, 1951, to May 30, 1952, the French counted 16,756 Viet-Minh dead and had taken 9,801 prisoners. French estimates put total Viet-Minh casualties at more than 50,000.

In October the Viet-Minh launched new attacks directed at recapturing lost territory in the Red river delta. The initial attacks succeeded in capturing several outposts from the French in the area of Hanoi. The French estimated that the Viet-Minh had been able to rebuild two or three divisions during the rainy season.

There was increasing evidence during the year of additional Communist Chinese military advisers and technicians supporting the Viet-Minh forces in Indochina. These Chinese forces were estimated to number 10,000.

Great Britain.—The annual defense budget approximated \$3,250,000,000. The conscription term was continued at a two-year period as the regular and reserve forces exceeded 1,250,000. Tank production was accelerated during 1952 with emphasis placed on the manufacture of Centurion tanks which were given a "super priority" rating for production. Guided missiles and anti-mine equipment were also given "super priority" ratings and together with Centurion tanks composed approximately one-sixth of British armament production.

Britain received from the U.S. under the Mutual Security Aid program anti-tank rocket launchers, rocket ammunition, tank transporter tractors and medium and self-propelled guns.

Disposition.—During 1952 approximately 12,000 troops served in Korea, where together with the Australian, Canadian and New Zealand troops they were brigaded into the Commonwealth division. In addition, 22,000 troops served in Malaya and 11,000 in Hong Kong.

Plans to raise two battalions of colonial troops in the West Indies for service anywhere in the Caribbean were announced. These would replace the single Jamaican battalion which was limited to local service.

The strength of the British army reached an effective fighting organization of ten divisions, plus ten reserve divisions.

An agreement was under negotiation with the Japanese to obtain permission to maintain commonwealth troops in Japan after the occupation ended.

Organization.—During the year Gen. Sir John Harding succeeded Field Marshal Sir William Slim as chief of the imperial general staff. General Harding, who commanded the 7th armoured division at El Alamein, was formerly commander of the British army of the Rhine. In that post General Harding was succeeded by Lieut. Gen. Sir Richard Gale, a wartime commander of airborne troops.

Malaya.—Gen. Sir Gerald Templer was sent to Malaya during 1952 to accelerate the campaign against the Communists. The Malayan federation police force was put through an intensified period of training. Plans were drawn up for arming more than 100,000 of the 320,000 home guard. A new conscription law was passed to permit the enlargement of the regular and auxiliary military formations. The regular forces in Malaya consisted of 30,000 troops plus 120,000 police regulars, specialists and auxiliaries. It was estimated that there were approximately 8,500 Communists, most of which were Chinese.

Other Powers.—**Australia.**—In order to make up for the failure of the recruiting campaign, more personnel was recruited in

Great Britain. About 3,000 British former servicemen were recruited for service in the Australian army, and 100 former British army officers were sought to alleviate a 20% shortage of officers.

The first paratroopers trained in Australia were graduated during the year from the School of Land-Air Warfare at Williamstown, N.S.W.

The army took over the training of pilots for reconnaissance, communications and air medical evacuation missions. Light aircraft units were manned with pilots chosen from the army and familiar with the tactical requirements of the ground forces.

Belgium.—A defense budget of \$200,000,000 was passed. The term of conscription was reduced from 24 to 21 mo. by a special act of the cabinet. The reduction in the term of conscription reduced by 15% the effectiveness of the three active divisions.

About 20,000 native troops were being trained in the Belgian Congo for defensive purposes. The troops were led by 356 Belgian officers and 406 noncommissioned officers who had volunteered for five-year terms.

The Luxembourg foreign minister announced plans to integrate the Luxembourg army into the Belgian armed forces.

Denmark.—A defense strength of approximately 225,000 was the goal for 1952, including an army of 100,000, a local defense force of 20,000 and a home defense force of 50,000.

The establishment of a permanent fully trained division was commenced. In order to man the division, conscription was extended from 12 to 18 mo.

Germany, West.—Agreement was reached among the North Atlantic nations on the rearmament of western Germany. Admitting Germany as a full member of the European Defense Community, the western powers provided that a German force would be integrated into the European army. Strength of the force was tentatively set at between 300,000 and 400,000 men, organized into 12 divisions. Restrictions were placed on any German production of atomic weapons, chemical or biological warfare instruments, deep-sea naval vessels, guided missiles or military aircraft. However, the Bonn government would be allowed to manufacture tanks and artillery of all sizes as well as lighter arms. West of the Rhine it would be permitted to manufacture explosives and propellants as well as guided missiles. It was further agreed that Germany should continue to pay the occupation costs of the British, French and U.S. troops for one year following the conclusion of the peace treaty. This amounted to approximately \$2,700,000,000.

The western German government planned to call 60,000 volunteers from the former army as the cadre for the new force as soon as the treaty was ratified. These volunteers would be trained for four to six months during which time the German *bundestag* would be asked to prepare a conscription law for drafting men 19 to 21. The army would consist of eight infantry and four armoured divisions backed by a tactical air force of 1,746 jet fighters. This army would be integrated into the European army which would total in all 43 divisions. (Other contributions to this army would include France 12 divisions, Benelux 5 divisions and Italy 12 divisions. These divisions were slightly smaller than U.S. divisions, consisting of 13,000 men per infantry and 12,600 per armoured or mechanized division. This combat strength would be raised by 2,000 men per division in the event of war.)

In June 30 west German officers commenced working with an interim subcommittee of the European Defense Community. Attention was devoted to personnel and administration, organization and training, communications and logistics.

Germany, East.—During 1952 there was a sharp increase in the funds available to the east German government for construction of military training facilities and barracks. Reorganiza-



ITALIAN ARMY MANOEUVRES, using medium Sherman tanks, in northern Italy in 1952

tion of the *Bereitschaften* (readiness force) into cadre formations capable of rapid expansion into combat divisions was completed. Reports indicated that at least one armoured division was being formed. There were also indications that a number of plants in eastern Germany had been retooled to produce Soviet heavy weapons, indicating the possibility that eastern Germany could arm its own force. Best indications were that the east German force had the potentiality of being organized into 25 divisions, although probably not consisting of more than 100,000 men during 1952.

Greece.—Armed forces totalled approximately 176,000, with a conscription period of three years. However, there were discussions of cutting the conscription to two years because of reduction in U.S. aid. This would reduce the size of the Greek army to approximately 145,000. The Greek army was organized into ten divisions, with shortages in tanks and anti-aircraft artillery.

Preliminary discussions were held on co-operation with Yugoslavia. Discussions between Greek and Yugoslav officers were directed toward reaching an entente in the event of a Soviet or satellite attack.

Italy.—Twelve divisions were to be fully mobilized by the end of 1952 with three additional divisions to be organized in 1953, provided that military equipment was received from the U.S. Italy provided four divisions to the integrated European Army (Mantova, Legnano, Fulgore and Cremona), plus one armoured brigade (Ariete) and two Alpine brigades (Julia and Tridentina). In addition the Friuli and Granatieri infantry divisions and the Triestina, Avellino, Aosta and Pinerolo divisions were to be fully organized and trained and held in reserve. A second armoured division, the Centauro, and a third Alpine brigade, the Taurinense, were to be organized. Italy had received more than 800 tanks plus artillery, electronic equipment and anti-tank and anti-aircraft equipment.

During 1952, \$822,000,000 or 24.1% of the budget was earmarked for defense, an increase in the defense appropriation of approximately one-fifth.

During March 1952, the first joint exercises of the southern European forces were held near the Italian-Yugoslav frontier around Udine. These exercises were directed by Italian Gen. Maurizio Lazarro de Casiglioni, commander of the Allied land forces in southern Europe. The command involved included the 2nd Italian army corps, composed of three infantry divisions, two armoured brigades and one Alpine brigade.

Korea (Republic of).—During the year the army's strength was increased to ten divisions plus special units. More and more South Korean units were moved into key positions in the front line until more South Korean troops were holding front-line positions than all foreign troops combined. Shortage of good officers still plagued the South Koreans, although an increasingly large number of officers received training in the U.S., particularly in infantry, armour and engineering.

The Netherlands.—Approximately \$470,000,000 was scheduled for the Netherlands defense expenditure in 1952.

Army plans listed a goal by the end of 1954 of five front-line divisions organized into one corps of three divisions, plus two independent divisions. In addition, communications troops would be organized to defend lines of communication and vulnerable points in the Netherlands.

A request was made to SHAPE to provide U.S., British and French officers to advise in the training of troops. In addition, these liaison officers were to act as staff officers in the headquarters of the corps and two divisions that the Dutch provided for SHAPE. Dutch officers numbering 200 to 300 were sent to the U.S. for intensive training. A total of 60,000 to 70,000 Dutch troops were called to active duty for periods varying from one to three months to serve in the SHAPE manoeuvres.

Norway.—The defense budget for 1952 was a record \$137,200; the largest proportion of the budget was allocated to the army which was to be expanded to a total of 11 brigades by 1955. The standing peacetime defense establishment consisted of two divisions of reduced strength. This was supplemented by the home guard. The principal difficulty facing Norway was the development of a corps of officers and noncommissioned ranks sufficient to lead the army of expanded size.

Poland.—Reports indicated that an efficient and well-equipped Polish army of 500,000 had been developed by Marshal Konstantin Rokossovsky. The army consisted of 22 divisions, including 4 armoured and 4 motorized equipped with Soviet heavy tanks. In addition to the army, there was a fully armed security corps numbering 60,000 and a frontier defense corps of 40,000.

Sweden.—Principal developments included re-equipping the army with modern weapons and increasing the firepower of the artillery. Major developments also included acceleration of the program to place major defense industries, aircraft installations, army barracks and hospitals underground.

Switzerland.—Although the permanent regular ground force numbered only approximately 500 men, all commissioned or non-commissioned officers, an army of 600,000 could be placed in the field within 48 hr. This consisted of 4 corps, composed of 9 infantry divisions, 3 motorized brigades and 24 squadrons of cavalry, plus fortress troops. Approximately 25% of the national budget was allocated to defense. All small arms were produced in Switzerland, with motor transport and tanks purchased from the U.S. or Great Britain. During the year a proposal to increase rearmament by \$345,000,000 was defeated by popular vote.

Turkey.—Turkey's advent to the North Atlantic Treaty organization together with Greece was one of the important developments of the year. Headquarters of the Turkish-Greek forces in NATO were opened at Izmir.

U.S. military advisers were attached to each corps, division and separate brigade of the Turkish army. These teams consisted of advisers on infantry, artillery, administration, engineer, signal and ordnance. Strength of the Turkish army was approximately 400,000 men maintained by universal military training, with compulsory service for two years at the age of 20.

Yugoslavia.—The defense appropriation amounted to 22% of the national income or approximately \$666,000,000.

A military agreement was reached between Yugoslavia and the U.S. during 1952 providing for the latter to supply tanks and heavy artillery to the Yugoslav army. This agreement followed an inspection tour of Yugoslav installations by a U.S. military mission. In addition, U.S. supplies of transportation and signal equipment and light weapons continued and a study was made of financing orders for military equipment in Yugoslavia to contribute to the expansion of the armament industry. Aid was received from Great Britain and France as well as from the U.S. (See also ATOMIC ENERGY; AVIATION, MILITARY; NAVIES OF THE WORLD.) (L. B. K.)

Arsenic: see MINERAL AND METAL PRODUCTION AND PRICES.
Art: see ARCHITECTURE; PAINTING; SCULPTURE; etc.

Art Exhibitions. An exhibition not only of great interest but superb in quality was "Two Thousand Years of Tapestry Weaving," from Egyptian and Graeco-Roman times to the present, put on at the Wadsworth Atheneum in Hartford, Conn. Adèle Weibel, curator emeritus of textiles of the Detroit Institute of Arts, organized the exhibition. Among the 182 items was one of the famous Vie Seignuriale tapestries lent by the Musée de Cluny in Paris and a Goya Caprice tapestry lent from Madrid.

The Art Institute of Chicago and the Metropolitan museum, New York city, organized jointly an impressive exhibition of paintings, water colours and drawings by Paul Cézanne (1839-1906). Important pictures were borrowed from Europe, including the famous "Blue Vase" from the Louvre in Paris, and the finest from American collections, notable among which were the "Card Players" and the portrait of Mme. Cézanne, both belonging to Stephen Clark.

A retrospective exhibition of the work of the American artist John Sloan was held at the Whitney Museum of American Art, New York city. This turned out to be a memorial show, as the artist died in 1951 during the course of arrangements. His best-known painting, "McSorley's Bar," was featured.

In Boston the Institute of Contemporary Art held a retrospective exhibition of the noted Expressionist painter Wassily Kandinsky (1866-1944). Many pictures were borrowed from the artist's widow in Paris. He was a leader in the modern abstract movement after 1910. The institute also held an exhibition honouring Walter Gropius, pioneer modern architect who founded the Weimar-Dessau Bauhaus, modern design centre in Germany.

Philadelphia's University museum, devoted to anthropology, invited seven nonanthropologist experts to select an exhibition from among their 500,000 objects in storage. A varied and interesting group of primitive African, South Sea Island, pre-Columbian Mexican and other objects were chosen by Franklin Watkins, painter; Jacques Lipchitz, sculptor; Norman Bel Geddes, designer; Charles Addams, cartoonist; Louis Stern, collector; René d'Harnoncourt of the Museum of Modern Art; and Lincoln Kirstein, head of the New York City ballet.

An extravagant contemporary exhibition, the Terry National Art exhibit, was put on at the Dinner Key auditorium in Miami, Fla., at a cost of \$85,000. The highest awards in history, \$13,000, were given out. Artists from 47 states were repre-

sented. Top prizes were \$5,000 to Philip Evergood for "Happy Entrance," \$3,000 to Ellis Wilson for "Fisherwoman," \$1,500 to Antonio P. Martino for "Winter" and \$1,200 to Francis Chapin for "Family Affair."

In Los Angeles, Calif., the County museum staged 4,000 years of Chinese ceramics from the third millennium B.C. to Emperor Ch'ien Lung (died 1799). This included the sturdy pieces dating from the dawn of history on through the perfection of Tang, Sung and Ming types to the more elaborate pieces of the 18th century.

Italy invited four artists from the United States to be featured at the Biennale in Venice, It. These were the painters Edward Hopper, Yasuo Kuniyoshi and Stuart Davis, and Alexander Calder, the originator of mobile sculpture. Calder was greatly admired and won the President's prize for a foreign sculptor.

In 1938 Mrs. Simon Guggenheim gave the Museum of Modern Art a sum of money with no restrictions except for the fact that it was to be used only for works of art of supreme importance. An exhibition of these purchases consisting of 13 paintings and 4 pieces of sculpture made a formidable array. Included were Henri Rousseau's "Sleeping Gypsy," Pablo Picasso's "Girl before a Mirror," Fernand Léger's "Three Women," Picasso's "Three Musicians" and Amedeo Modigliani's "Stone Caryatid."

James Johnson Sweeney organized for the Musée de l'Art Moderne in Paris an exhibition called "Masterpieces of the Twentieth Century," assembled from U.S. collections, which were later shown at the Tate gallery in London. Most of the show was made up of important contemporary French pictures. One of the best, Auguste Renoir's large "Nude," lent by the Art Institute of Chicago, Ill., was slashed out of its frame at night by a vandal who was apprehended.

The Albright gallery in Buffalo, N.Y., did an exhibition of Expressionism. Included were Vincent Van Gogh, Paul Gauguin, Edvard Munch and James Ensor, the fathers of Expressionism, as well as the later German group of Franz Marc, Wassily Kandinsky and Emil Nolde; French artists such as Chaim Soutine; and contemporary Americans such as Jack Levine and Hyman Bloom.

The magazine *Art News* again sponsored a National Amateur Painters competition. People from all over the U.S. sent in 1,287 pictures to be juried by H. Harvard Aronson, chairman of the department of art at the University of Minnesota, Minneapolis; Albert Dorne, illustrator; Amédée Ozenfant, painter and teacher; Emily Genauer, art critic of the *New York Herald Tribune*; Richard Pratt, associate editor of the *Ladies Home Journal*; Kurt Seligmann, painter; and Alfred M. Frankfurter, editor of the *Art News*. The gold medal for oil went to Sophy P. Regensburg, housewife, for "Chinese Tureen"; gold medal in water colour to Arnold T. Goldwater, dentist, for "Verdi Square."

In Philadelphia the Pennsylvania Academy of the Fine Arts held its 147th annual, oldest in the country. The exhibition was half-invited and half-juried. Louis Guglielmi won the coveted Temple medal for "New York 21" and Joseph de Martini the Sesnan medal for "Aqueduct." The Beck portrait medal went to Gladys Rockmore Davis for "Study of an Old Woman."

The second oldest annual was the National Academy of Design's 127th, made up of 300 items; two-thirds were by members (jury free). The sum of \$8,500 was distributed in prizes of which Carl Gaertner and Marion Greenwood each took \$1,200 for oils.

Cincinnati held its third biennial of contemporary colour lithography and showed 406 prints from 18 countries.

The Society for Contemporary American Art held its 12th annual exhibition at the Art Institute of Chicago. From the exhibi-

dition the institute was permitted to select \$1,500 worth of pictures or sculpture. This time the selections were a bronze by David Smith entitled "Beach Scene" and Hans Hofmann's oil, "Blue Rhythm."

New York's Museum of Modern Art showed "Fifteen American Painters and Sculptors" in a much discussed group, mostly *vant-garde* but mostly well known. Included were Mark Rothko, Jackson Pollock, Bradley Walker Tomlin, William Baziotes, Joseph Glasco and Herbert Katzman, as well as the sculptors Herbert Ferber and Richard Lippold and the lately recognized older painter Edwin Dickinson.

The National Gallery of Art in Washington, D.C., showed the collection of 19th- and 20th-century French paintings belonging to the famous dress designer Edward Molyneux of Paris.

As the third in its cycle of American exhibitions, the Metropolitan museum assembled a large exhibition of contemporary water colours and drawings. Oils were shown in 1950 and sculpture in 1951.

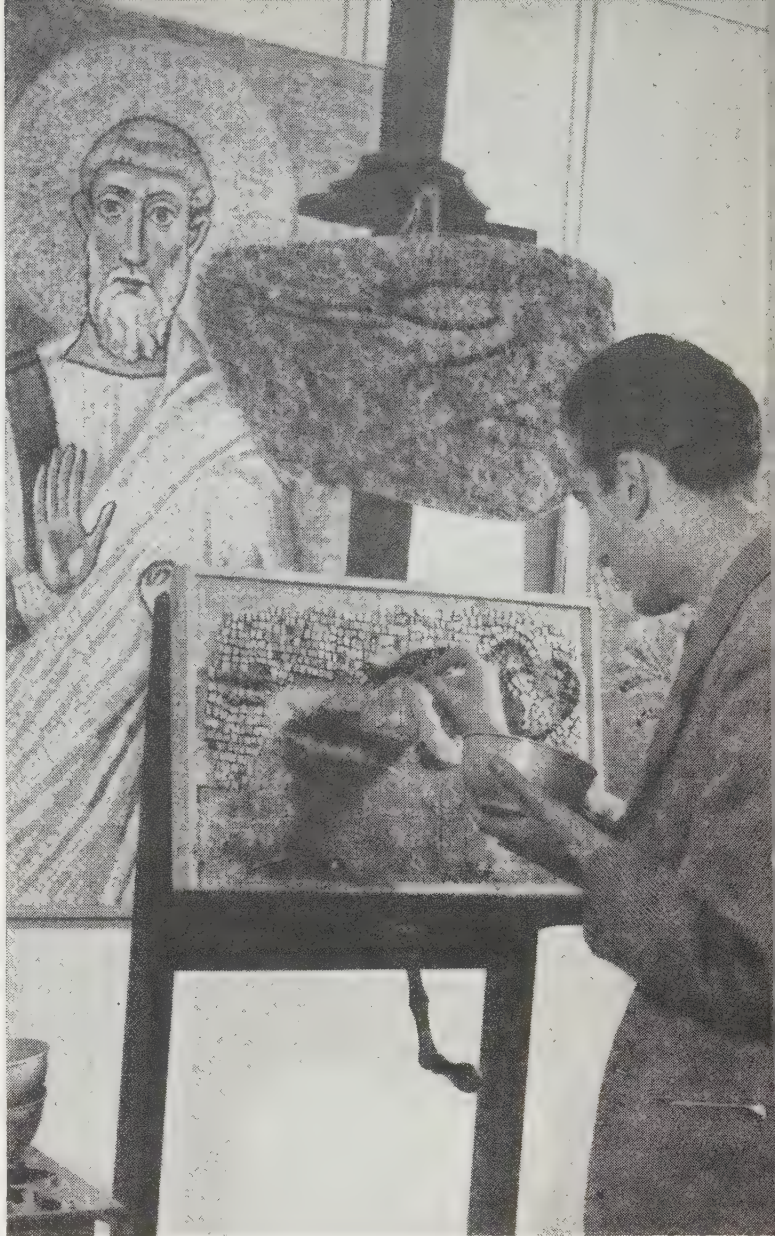
(F. A. Sw.)

Great Britain and Europe.—The most striking exhibition of the year was undoubtedly the magnificent display of mediaeval art treasures from Italy held at the Petit Palais, Paris. Its scope ranged from the middle of the 3rd century to about 1350. Italian art at this period has often been considered as little more than a mixture of Roman and Byzantine styles, or, in the later period, as a pale counterpart, even an offspring of the more glorious French tradition. Many of the paintings shown in the exhibition were in the international Gothic spirit, though Giotto and Duccio, to say the least, made their own revolutionary contribution. The most powerful effect, however, was formed by the impressive sculpture of Nicola and Giovanni Pisano and Cimmino di Camaino, which convincingly demonstrated the continuity of the classical spirit in Italian art even before it had been officially recognized in the Renaissance.

At Bordeaux and subsequently at Genoa and Barcelona the attempt was made to suggest the community of spirit shared by painters working in Italy, Spain and France during the 15th and 16th centuries. Certain formulas were shared by many of the artists represented, though the indifferent examples of Bartholomé Bermejo's work, the exclusion of the Master of Aix, and the restriction of Antonello da Messina to only one picture lessened the contribution of the major men, and tended to suggest a level of common mediocrity.

These examinations of the cross currents of European art provided a fitting introduction to the magnificent Leonardo exhibitions held in London, at the Louvre, Paris, at Amboise and at Florence to commemorate the 500th anniversary of the great Florentine's birth. The notable exhibition held at Burlington house, London, presented the finest group of the master's drawings (many of which came from the royal library at Windsor) ever to have been held. Every facet of his genius was represented, including a whole series of sketches for paintings such as the Uffizi "Epiphany," the "Leda," "The Last Supper," the "Battle of Anghiari" and the "Madonna with St. Anne," as well as for the Sforza and Trivulzio equestrian monuments. The landscape drawings included the Deluge series. None of the master's masterpieces were shown, only copies and related pictures.

One of the most suggestive shows of the year was devoted to Mannerism and the School of Fontainebleau at Naples. An uneasy compromise was reached between an attempt to illustrate the specific theme and to survey Mannerism as an Italian movement with international ramifications. Few first-rate pictures were included. Much of importance for the European affiliations of Mannerism were provided, which was stressed with great skill in the large-scale exhibition of German art from Dürer's death to the Thirty Years' War.



ILLUSTRATING the techniques by which replicas were made of the early Christian mosaic murals of Ravenna, It., exhibited in England in 1952. Skilled copyists even worked from plaster casts to reproduce uneven surfaces and the reflection of light from slightly different angles

The spread of Italian influence at a later date was the theme of the exhibition devoted to "Caravaggio and the Netherlands," held at Utrecht, Neth., and Antwerp, Belg. The examination of the early Vermeer and Hendrick ter Brugge failed to prove any substantial connection with Caravaggio. His impact on the Netherlands would have become clearer if the choice of items had been sharper. The more regular channel of Dutch art was examined in the fine exhibition, "Three Centuries of Portrait Painting," staged at the Rijksmuseum, Amsterdam, Neth.

The major exhibition of French 19th-century art to appear in England was devoted to Delacroix (at Wildenstein's, London). A number of paintings illustrated stressed his acquaintance with English art, as well as his dependence on the Venetians and Rubens.

Besançon, Fr., appropriately celebrated Gustave Courbet with a group of 60 pictures, among which were some important figure paintings. The custom of regional museums honouring the distinguished sons of their localities was followed at Le Havre, where Louis Boudin was justly celebrated. On a larger scale was the selection from Claude Monet's *oeuvre* which visited Zurich, Paris and The Hague. (See also ART SALES; ETCHING; MUSEUMS; PAINTING; SCULPTURE.)

(D. SN.)

Arthritis: see CORTISONE, HYDROCORTISONE AND CORTICOTROPIN; RHEUMATIC DISEASES.

Artificial Weather: see METEOROLOGY.

Artillery: see MUNITIONS OF WAR.

Art Sales. The Parke-Bernet galleries of New York conducted 91 sales during their 1951-52 season with a total of \$5,727,759. This was a gain of \$180,000 over the previous season. Of the total, paintings, drawings and prints accounted for \$905,700, books and autographs brought the even larger amount of \$1,018,299, while furniture, objects of art, jewellery and personal effects aggregated \$3,803,760.

Attendance was larger than ever at auctions with many new buyers and an increase in mail-order bidding. There were also numerous purchases in Europe and South America.

The Plaza galleries announced an all-time high of \$1,936,441 for the season. There were no single collections of outstanding importance at either auction house and no one painting going for a sensational price. It was a season built on the aggregation of a large number of smaller sales.

At the Parke-Bernet galleries the H. Sylvia A. H. G. Wilks collection of diamond jewellery brought \$389,835, the notable Lincoln collection of Oliver R. Barrett sold for \$273,632 and furniture and silver from the William Randolph Hearst collection brought \$172,455. A collection of arms and armour from Edward Hubbard Litchfield fetched \$97,800, property of Mrs. Henry Ford brought \$172,117 and that of Bernon S. Prentice \$171,277.

Top price for a painting was \$17,500 for Jean-Baptiste Corot's (1796-1875) "L'Odalisque Sicilienne" and next was \$18,000 for Thomas Hicks's portrait of Lincoln (the first oil portrait done of him). Other prices were \$15,500 for Francesco Guardi's (1712-1793) "Landscape with Ruins"; \$13,500 for Vincent Van Gogh's "Peasant Walking Along the Fields"; \$12,000 for the Steigerwalt-Parker-Hart portrait of George Washington by Gilbert Stuart; \$12,000 for Sir Henry Raeburn's (1756-1823) "Boy with Cherries"; \$6,000 for Antonio Pollaiuolo's famous engraving, "Battle of the Nudes" (Italian, 15th century).

Far more spectacular prices were paid at the Cognac sale at the Galerie Charpentier in Paris. Paul Cézanne's "Apples and Biscuits," 1880-82, brought \$110,031; Pierre Auguste Renoir's "Young Girl with Flowers in Her Hat," 1880, went for \$75,021; Cézanne's "Trees and Houses," \$66,686; Renoir's "The Two Sisters," \$63,351; and Van Gogh's "The Thistles," \$55,015. This was an all-time high for modern paintings at auction.

In London the two leading auction houses had a busy season. Christie's conducted the sale of John Constable's (1776-1837) "Salisbury Cathedral" (one of several versions) for Mrs. Allen-Morehouse and knocked it down at the considerable price of £21,525. Col. Oliver Probert sold a pen and ink and sepia wash drawing, "View on the Rhine" by Pieter Bruegel the Elder (1525-69) for £6,510. The Earl of Shaftesbury received £1,627 for a George II commode and £945 for a Chippendale armchair. A Queen Anne bureau, property of Ford Skull, went for £945. On May 7 Christie sold 156 lots of silver for £10,149, top price being £1,800 for a silver gilded teapot by Isaac Ribouleau, 1724. A George III supper set, 1766, brought £720; a bullet-shaped teapot, 1721, £350; a basin on spreading feet by Francis Garthorne, 1691, went for £230; and 17 George III dinner plates, 1785, £320.

Sotheby conducted a group of equally diverse and interesting sales. Count Alfred Potocki's "L'Homme à l'Épée" by Jean-Honoré Fragonard (1732-1806) brought £7,500 and a Meyndert Hobbema (1638-1709), "Village Amongst Trees" (anonymous sale), went for £2,800. A pair of allegorical scenes by François Boucher (1703-1770) sold for £3,000. A 47-piece Barr, Flight

and Barr Worcester porcelain crested dessert service brought £1,500; a Chelsea red anchor tureen in asparagus form brought £610. Numerous Chinese objects came up in sales, important among which were a Ming dynasty green jade water buffalo, £1,350, and a jade horse, £980. Lord Cunliffe's Chinese ceramic and bronze collection totalled £6,994, the highest single item being £1,200 paid for an Imperial dark green horse of the Emperor Ch'ien Lung period, 1789. A Meissen porcelain group of swans mounted on Louis XVI ormolu base brought £1,650. (F. A. Sw.)

Aruba: see NETHERLANDS ANTILLES.

Asbestos: see MINERAL AND METAL PRODUCTION AND PRICES.

ASCAP (American Society of Composers, Authors and Publishers): see SOCIETIES AND ASSOCIATIONS, U.S.

Ascension: see ST. HELENA.

Asgeirsson, Asgeir (1894-), president of Iceland. was born at Koranes, Ice., May 13. After graduating in theology at the University of Iceland in 1915, he was appointed teacher at the Teachers' college in Reykjavik (1918-26). He was politically active in the Social Democratic party, was elected to the *althing* in 1923 and was afterward constantly re-elected; in 1930-31 he was president of the *althing*. He was director of education from 1925 to 1931, minister of finance from 1931 to 1934 and prime minister from 1932 to 1934; in 1934-38 he was again director of education. During 1938-52 he served as director of the Fisheries Bank of Iceland. On June 29, 1952, Asgeirsson was elected president of Iceland.

Asia: see AFGHANISTAN; CHINA; etc.

Association for the Advancement of Science, American: see SOCIETIES AND ASSOCIATIONS, U.S.

Association of American Geographers: see GEOGRAPHY.

Association of Research Libraries: see SOCIETIES AND ASSOCIATIONS, U.S.: *Research Libraries, The Association of.*

Astronomy. The eighth general assembly of the International Astronomical union (the second since World War II, was held in Rome, It., Sept. 4-13, 1952. It was attended by more than 400 delegates representing 35 countries. Resolutions were adopted concerning the making of observations and publication of the results in many branches of astronomy, particularly those in which planned international co-operation had become indispensable. Astronomers reviewed much of the work of recent years and, as a result, were enabled more effectively to arrange their programs of future work.

Sun.—A total eclipse of the sun, visible along a track from the South Atlantic to Siberia, crossing Africa and Iran on the way, occurred on Feb. 25, 1952. Parties of observers from a number of countries established themselves at various places on the track, the majority in the vicinity of Khartoum (Sudan). The corona was seen to be generally of the form characteristic of minimum solar activity, but other well-developed coronal streamers showed some unusual features. Only preliminary reports upon most of the observations became available during the year. Some of the measurements of the more orthodox kinds, such as those made by the Utrecht astronomers of the variation with height in the chromosphere of the intensities of spectral lines of various elements, were so successful that they were expected to become the standard results for the problems concerned.

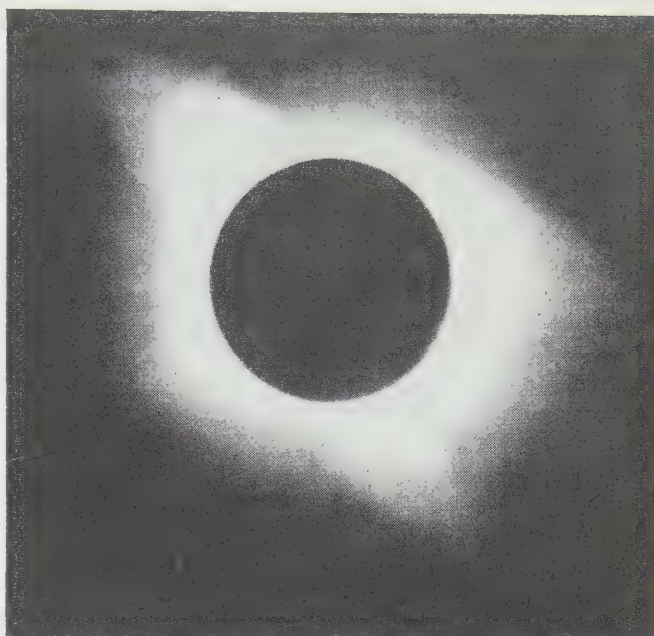
Interstellar Matter.—In 1949 W. A. Hiltner had discovered that the light from some stars is partially polarized. It had become generally accepted that this effect is produced in the passage of the light through interstellar "dust," elongated particles of which are for some reason aligned parallel to a

particular direction. Considerable theoretical investigations had been made as to the possibility of such alignment being the result of the existence of interstellar magnetic fields and of suitable magnetic properties of the particles. In 1952, T. Gold published a much simpler suggestion depending on dynamical effects. He showed that when a cloud of elongated dust particles collides with a gas cloud, a partial alignment of the particles is produced, in the direction of the relative motion. The conditions assumed were those believed to exist in interstellar matter and the result appeared to be adequate to account for all features of the observed polarization effects.

Most astronomers had accepted the identification (1942) by W. Baade and R. Minkowski of the Crab nebula as the visible remains from a supernova outburst in the year 1054. However, it had been difficult to explain why the nebula was still shining, there being apparently no associated star capable of illuminating it. W. H. Ramsey made the fruitful suggestion that the presence of sulphur and nitrogen, whose lines are a prominent and unusual feature in the spectrum, is the result of the radioactive decay of certain isotopes of chlorine and carbon. This decay could release energy at a rate sufficient to account for the observed luminosity. Moreover, these isotopes would be a likely product of the processes occurring in a supernova explosion according to a theory previously given by F. Hoyle.

Galaxy.—Two new methods of studying the structure of the Galaxy confirmed each other in making outstanding progress in the subject. It was known that the brightest (O- and B- type) stars render luminous some patches of interstellar hydrogen in their neighbourhoods. Also it had been noted that such patches of luminous hydrogen in the Andromeda nebula, to which the Galaxy was considered to be similar, are concentrated in the spiral arms. By very careful measurements, W. W. Morgan succeeded in determining the distances of some of the O- and B- stars and the associated hydrogen emission regions in the Galaxy. He found that these enabled him to trace out portions of the spiral structure; his results were greatly in advance of anything previously known of this structure. But it had been verified that, as theoretically predicted, interstellar hydrogen emits radiation of 21 cm. wavelength detectable by radio observations. (This emission does not depend upon excitation by any stars immersed in the hydrogen gas.) In 1952 a general survey of the characteristics of such radiation coming from various directions in the Galaxy was made by C. A. Muller, H. C. van de Hulst and J. H. Oort of Leiden, and the first results were reported by Oort in Rome. They found that the Doppler frequency-shift, varying with distance from the sun and produced by the known rotation of the Galaxy, enabled them to study the space distribution of the emitting gas. The main regions of maximum density in the gas were found in fact to define three spiral arms in our Galaxy. Moreover, these were in excellent agreement with Morgan's results for the parts of the arms revealed by his quite independent method, thus confirming the interpretation placed upon the radio observations. These two investigations furnished much the most direct evidence hitherto obtained that the Galaxy is actually a "spiral nebula" as well as the most extensive information to date about its particular configuration. Also our own Galaxy thus became the first for which the spiral configuration could be quite reliably related to the sense of rotation: the spiral arms were found to be "trailing."

Radio Astronomy.—Renewed efforts were made to identify "radio stars" with otherwise detectable astronomical objects. Two remarkable provisional identifications were made by W. Baade, one with a hitherto undetected nebulosity within the Galaxy which had the appearance of being the remains of a supernova outburst (this being in agreement with the character



TOTAL ECLIPSE of the sun by the moon on Feb. 25, 1952, photographed near Khartoum in the Anglo-Egyptian Sudan

of one or two cases for which identification had already been made), and one with a pair of external galaxies which appeared to be in course of a "flat-on" collision. Though the physical mechanism of the production of radio noise in general had still eluded discovery, T. Gold pointed out that these identifications offered fresh evidence that the mechanism is in general associated with the existence of bodies of gas meeting each other with high relative speeds. (See also NATIONAL GEOGRAPHIC SOCIETY.)

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Athletics: see TRACK AND FIELD SPORTS; etc.

Atlantic Treaty: see EUROPEAN UNION; NORTH ATLANTIC TREATY ORGANIZATION.

Atomic Energy. The number of nations known to possess atomic weapons was increased to three when Great Britain exploded its first atomic bomb at 8 A.M. on Oct. 3, 1952 (Australian time), in the Monte Bello Islands, 50 mi. N.W. of the coast of Australia. According to the best available unofficial count, it was the 36th nuclear explosion in the history of the world. The United States had previously staged 32, and the U.S.S.R. 3.

British possession of the bomb was expected to have a marked effect upon the international atomic armament race, the tempo of which continued to mount in 1952.

The United States embarked upon a vast expansion of its atomic energy facilities in 1952. A series of eight tactical bombs were detonated in Nevada in the spring of the year. At the time of the British explosion, a U.S. task force was on Eniwetok atoll, preparing for additional tests to be held before the end of the year.

Soviet activities were hidden behind the "iron curtain," but there were reports that the U.S.S.R. was pushing its atomic program with feverish intensity.

Other events of importance in the realm of atomic energy during 1952 included the death of U.S. Senator Brien McMahon, chairman of the joint congressional committee on atomic energy; the failure of the new United Nations Disarmament commission to make any progress toward the international control of atomic

energy; the formation of the European Council for Nuclear Research; the laying of the keel of the first atomic-powered submarine; the completion of the cosmotron at the Brookhaven National laboratory, Upton, N.Y., the first atom-smasher to achieve energies measured in billions of electron volts; and the discovery of new sources of uranium ores in Canada and southern Australia.

The British Bomb.—Prime Minister Winston Churchill revealed that Britain's first atomic bomb had been detonated inside the 1,450-ton frigate "Plym," a World War II escort ship, riding at anchor in the Monte Bello Islands. The ship was vaporized except for some red-hot fragments which were sprayed over one of the islands, starting fires in the vegetation.

"Thousands of tons of water and of mud and rock from the sea bottom were thrown many thousands of feet into the air and a tidal wave was caused," Churchill told the house of commons. He explained that the test had been designed to disclose the effects of an atomic bomb on a harbour.

Newspapermen watched the explosion from a hilltop on the Australian coast, about 65 mi. from the centre of the test area. The bomb exploded with the usual bright flash, followed by the appearance of the familiar ball of fire. However, the cloud that formed after the explosion differed greatly from the mushroom formation usually associated with the atomic bomb. It was a ragged billowing cloud, shaped like a distorted Z, 1 mi. wide and 2 mi. high.

The hilltop observers experienced a sharp atmospheric shock wave about four minutes after the flash. The noise was a sharp crack followed by a prolonged roll like thunder.

The project was under the command of Rear Adm. Arthur D. Torlesse. The civilian scientific director was William George Penney, chief superintendent of the armament research unit of the ministry of supply. Penney was knighted on Oct. 23.

The royal air force announced on Oct. 23 that the nation had embarked upon the production of other atomic bombs and the necessary aircraft to deliver them. It was stated that all future bombers would be able to carry A bombs.

The British Atomic Establishment.—It was estimated that Great Britain had spent £200,000,000 (\$560,000,000) on the development of its atomic energy establishment. Speaking in the house of commons on Feb. 26, 1952, Prime Minister Churchill said, "I was not aware until I took office that not only had the Socialist government made the atomic bomb as a matter of research, but that they had created at the expense of many scores of millions of pounds the important plant necessary for its regular production."

The British Atomic Energy act adopted by the house of commons on Nov. 6, 1946, is comparable in many ways to the U.S. Atomic Energy act adopted in the same year by congress. However, instead of creating a commission, it lodges control of atomic energy activities in the ministry of supply.

Under the direction of the ministry of supply, the project is divided into two branches. The research branch is the British Atomic Energy Research establishment at Harwell, Berk. The production branch is the Department of Atomic Energy at Risely, Lancs. Associated with the Harwell establishment is the Radiochemical centre at Amersham. The department at Risely is charged with the operation of the uranium piles or nuclear reactors at Sellafield, Cumb. In 1952 Britain was believed to have at least two reactors for the production of plutonium. There was a uranium ingot plant at Springfield, Lancs. In addition, there were "top secret" installations at Capenhurst, Ches., and Aldermaston, Berks.

The Harwell establishment includes two nuclear reactors, a "hot" laboratory, that is, a laboratory specially designed for working safely with radioactive materials, and various atom-

smashing machines including the largest synchro-cyclotron operating in Europe, an electron synchrotron, and a linear accelerator. One of the reactors produces radioactive isotopes for the use of hospitals, universities and industrial laboratories.

Late in 1952 the Harwell scientists were working on the design of three new reactors—a slow-neutron enriched-uranium reactor, designed as a prototype power unit for ship propulsion; a slow-neutron natural-uranium reactor to develop power for the production of electricity; a fast-neutron reactor of the "breeder" type, designed to develop useful power and at the same time to produce more plutonium than the uranium ²³⁵ it consumes. The breeder reactor was to have a small core, perhaps only two feet in diameter. This would be mounted in a pressure chamber where a gas under pressure, probably helium, would conduct the heat to a water boiler for the generation of steam.

Sir John Cockcroft, who shared the 1951 Nobel prize in physics with E. T. S. Walton for pioneer experiments in atom-smashing, was director of the Harwell establishment.

At the head of the British atomic program was Lord Cherwell, formerly professor of experimental philosophy at Oxford university, whom Churchill appointed to his cabinet as his chief adviser on atomic energy.

U.S.-British Co-operation.—It was expected that the successful explosion of the first British atomic bomb would lead to closer co-operation between the United States and Great Britain in the realm of atomic weapons.

Both Britain and Canada sent scientific missions to the United States during World War II to work on the development of the first atomic bomb. However, only U.S. scientists worked on certain aspects of the final stage.

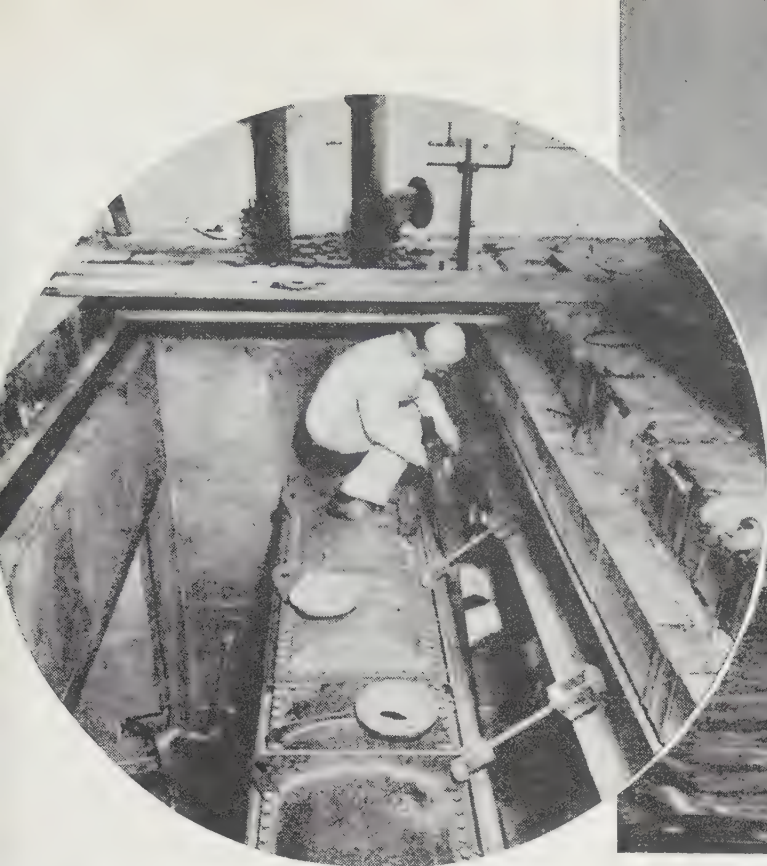
The U.S. Atomic Energy act of 1946 banned the exchange of information relating to the bomb, and Great Britain was unable to obtain information which it wanted in the postwar years. Negotiations begun in July 1949 were upset in 1950 when the treachery of Klaus Fuchs became known. Fuchs had come to the U.S. as part of the British scientific group.

While in Washington in Jan. 1952, Prime Minister Churchill reopened the subject with Pres. Harry S. Truman and subsequently it was discussed by Lord Cherwell, Churchill's adviser on atomic energy, with members of the U.S. Atomic Energy commission. Both General of the Army Omar N. Bradley, chairman of the Joint Chiefs of Staff, and Gen. J. Lawton Collins, army chief of staff, had expressed the belief that it was in the interests of the United States to inform its allies of the capabilities and use of atomic weapons. United States scientists believed that it was possible that Britain might be ahead of the United States in some aspects of atomic energy and that both nations would benefit by the complete exchange of information.

U.S. Detonations in 1952.—The United States exploded eight atomic bombs in a series of tests between April 1 and June 5, 1952, at Frenchman's Flat and Yucca Flat, the two test sites maintained by the U.S. Atomic Energy commission in the air force bombing and gunnery range, a 5,000-sq.mi. tract about 75 mi. from Las Vegas, Nev.

It was generally understood that the commission used the Nevada sites for testing tactical weapons while more powerful strategic ones were tried at Eniwetok in the mid-Pacific.

The first bomb in the 1952 Nevada tests was dropped from an aeroplane over Frenchman's Flat on April 1. It was apparent to observers that this was a new variety of atomic explosion. The usual ball of fire, formed at the instant of explosion, was accompanied by a secondary curtain of fire that seemed to consist of a line of parallel, vertical, fiery jets. Observers counted about 20 of these jets, extending half a mile, perhaps, from the fireball. It seemed reasonable to suppose that this was a new weapon designed for some specialized purpose. The com-



Above, left: **FIRST ATOMIC HEATING** plant in the world, during early construction stages at the atomic research establishment in Harwell, Eng. The plant was in its first year of operation in 1952, heating a building of 80 offices



Above, right: **HYDROGEN PLANT** erected for the U.S. Atomic Energy commission along the Savannah river in South Carolina. Photographed from a passing train by a N.Y. journalist, the picture was cleared by the AEC in 1952

Below: **TESTING MATERIALS** for a reactor to propel atomic-powered vessels for the U.S. navy. Building the reactor was undertaken by the Westinghouse Electric Corp. in 1952 at its Bettis plant near Philadelphia, Pa.

Left: **WRECKAGE** of a 2½-ton truck after an atomic bomb was detonated at Yucca Flat, Nev., in May 1952. The area was strewn with equipment to demonstrate the bomb's destructiveness to the 2,100 U.S. marines who took part in the manoeuvre





"ANOTHER BIRD HEARD FROM," a 1952 cartoon by Costello of the *Knickerbocker News* (Albany, N.Y.)

mission offered no explanation.

New behaviour was likewise exhibited by the second bomb, dropped from an aeroplane over Yucca Flat on April 15. The flash usually accompanying the explosion was missing, but the fireball was brighter than usual. However, the ball broke into two taillike structures that joined together a minute later to form a gigantic, pinkish ring. Again, there was no comment from the commission.

The third bomb was dropped from an aeroplane over Yucca Flat on April 22, and exploded at an altitude between 3,000 and 3,500 ft. Gordon Dean, chairman of the commission stated that it was the most powerful bomb yet exploded within the boundaries of the United States and more powerful than those that devastated Hiroshima or Nagasaki, Jap.

A battalion combat team of about 2,100 troops carried out manoeuvres in connection with this explosion. U.S. troops had taken part in such a manoeuvre for the first time on Nov. 1, 1951.

At the April 22 explosion, the troops and their officers, including three generals, were huddled in deep foxholes and trenches about four miles from "ground zero," the point directly underneath the exploding bomb. As soon as the bomb exploded, the soldiers climbed out of their trenches and stood in the open as the shock wave, driving a great cloud of dust before it, swept over them.

Subsequently, when radiological teams had determined that it was safe, they moved into the bombed area. Paratroopers were also dropped into the area from aeroplanes.

The April 22 explosion marked the television debut of the atomic bomb. Television cameras picked up the explosion and the image was relayed to stations from coast to coast, enabling millions of persons to see it. However, the telecast was not too

satisfactory and the television audience saw less than was seen in the motion pictures of the 1946 Bikini bomb tests.

The fourth bomb was dropped from an aeroplane over Yucca Flat on May 1. About 2,150 marine corps troops were crouched in foxholes within three to four miles of "ground zero." This was probably closer to a bomb explosion than any persons had ever been with the exception of the victims in Hiroshima and Nagasaki.

This bomb exploded at an altitude of about 2,000 ft., considerably lower than the third bomb.

The next four atomic explosions were all of devices atop steel towers about 300 ft. high. The dates were May 7 and 25, and June 1 and 5. Troops were again in foxholes for the explosions on May 25 and June 1.

The Hydrogen Bomb.—There were persistent rumours that the tests planned by the U.S. Atomic Energy commission to be held on Eniwetok atoll in the closing months of 1952 would include the explosion of a hydrogen bomb. The commission, of course, made no statement on the subject.

Expansion of U.S. Facilities.—On July 7, 1952, the last day of its session, the 82nd congress appropriated \$2,898,800,000 for further expansion of atomic energy facilities. On Aug. 12, the U.S. Atomic Energy commission announced the first major item in the new program, a plant for the production of uranium 235 to cost \$1,200,000,000. A 6,500-ac. site in Pike county, O., was selected for it.

Progress was made during 1952 on two plants for which funds had been previously provided, the Savannah River plant near Aiken, S.C., for the production of either plutonium or hydrogen isotopes, to cost \$1,250,000,000 and a plant at Paducah, Ky., for the production of uranium 235, to cost \$500,000,000. In addition, the feeds materials production centre at Fernald, O., was partially completed.

In Oct. 1952, it was estimated that 3% of the nation's construction labour force was at work on atomic energy building projects. Atomic installations in operation were consuming about 3% of the nation's production of electric power, an amount equal to that consumed by New York city. Plans were being made for additional electric power facilities for the new plants under construction.

Completion of the expansion program, scheduled for 1958, would quadruple the nation's atomic energy facilities. However, technical improvements and higher efficiency were expected to result in a tenfold increase in the U.S. atomic bomb potential.

New Uranium Sources.—Several of the ore processing plants on the Colorado plateau were enlarged during 1952 as continued exploration extended the producing areas. The search for new uranium deposits was continued with an active program of prospecting and drilling under the joint auspices of the commission and the U.S. geological survey.

New uranium sources were found during the year in Canada and Australia. The first of several plants to recover uranium from the gold ores of the Rand in South Africa was nearing completion.

First Atomic Submarine.—The keel plate of the first atomic-powered submarine, the U.S.S. "Nautilus," was laid at Groton, Conn., on June 14, 1952. The submarine was being built by the Electric Boat company.

The atomic power plant for this submarine was being built by the Westinghouse Electric corporation. A land-based prototype of the reactor to be used in it, developed jointly by Westinghouse and the Argonne National laboratory, Chicago, Ill., was being installed for test purposes in a section of submarine hull at the Reactor Testing station in Arco, Ida.

President Truman disclosed that the "Nautilus" would be able to stay under water indefinitely without the aid of a breathing

ube and that its underwater speed would be 20 knots. While emphasizing the importance of the "Nautilus" as an instrument of war, he hailed it as an even greater forerunner of the peaceful applications of atomic energy.

Construction of a land-based prototype of another type of reactor suitable for use in submarines, the so-called submarine intermediate reactor, was begun by the General Electric Co. at West Milton, N.Y., about 18 mi. north of Schenectady. General Electric was also working on the design of a reactor for the propulsion of aircraft at its plant in Lockland, O.

Atomic Artillery.—The U.S. army disclosed on Sept. 30, 1952, the details of an 85-ton cannon, designed to shoot an 11-in. projectile a distance of 20 mi. The weapon was termed an "all-purpose artillery piece," capable of shooting either conventional or atomic shells, although only conventional shells had been shot from it. The 40-ft. cannon is carried on a flat-bed vehicle moved by two tractors, like a freight train with a locomotive at either end. Hydraulic jacks lift the weapon from its bed and place it into position for firing.

New Reactors.—A number of new nuclear reactors were completed by the U.S. Atomic Energy commission during 1952. The most important of these was the materials testing reactor at the national Reactor Testing station in Arco, Ida. This reactor would be used to make irradiation tests on materials considered promising for new reactors.

Experiments were continuing at Arco, with the first experimental breeder reactor, designed to furnish power and at the same time produce more atomic fuel than it consumes.

The commission made public the technical details of several low-power research reactors, including one at the Oak Ridge laboratory, Oak Ridge, Tenn., known as the "swimming pool reactor" because it is immersed for shielding purposes in a pool of water 20 ft. wide, 20 ft. deep and 40 ft. long.

The Brookhaven Cosmotron.—A synchro-cyclotron known as the cosmotron went into operation at the Brookhaven National laboratory on June 10, 1952, producing a beam of protons with energies of 2,300,000,000 ev, the first time an atom-smasher had exceeded the 1,000,000,000-ev mark. However, it was thought that the discovery at Brookhaven of a new magnetic method of focusing the proton beam might make it possible to build atom-smashers with energies of 100,000,000,000 ev.

Radioactive Isotopes.—Since Aug. 1946, when the U.S. Atomic Energy commission began its program of isotope distribution, about 27,000 shipments of radioactive isotopes had been made to 922 institutions in the United States and more than 1,900 shipments of stable isotopes to 250 institutions. More than 1,400 shipments of radioactive isotopes were made to 34 foreign countries.

International Control.—The United Nations general assembly, after four and a half weeks of debate, adopted a resolution on Jan. 11, 1952, to combine the United Nations Atomic Energy commission and the Commission for Conventional Disarmaments into the United Nations Disarmament commission consisting of representatives of the 11 nations on the Security Council and Canada. The Soviet bloc bitterly opposed the resolution and the vote was 42 in favour, 5 (the Soviet bloc) against, and 7 (Argentina, Burma, Egypt, India, Indonesia, Pakistan and Yemen) abstaining.

The next day, Soviet Foreign Minister Andrei Y. Vishinsky submitted a formal proposal containing two important concessions to the views of the western powers. Whereas the U.S.S.R. had previously insisted that atomic stock piles be destroyed as a prelude to discussion of control, he now proposed that the destruction be simultaneous with the adoption of a control plan. He also said that the U.S.S.R. was prepared to agree to continuous inspection of atomic installations.

Vishinsky's proposals were received coolly by the U.S., Great Britain and France with the suggestion that they be put before the new Disarmament commission. It was felt that Vishinsky was motivated by a desire to recoup the loss that the U.S.S.R. had sustained in the eyes of many of the small nations by opposing the creation of the Disarmament commission.

The new commission held its first meeting in Paris in February. The Soviet Union opposed a suggestion of the U.S., Britain and France that the commission begin by drawing up a plan for a world census of armed forces and weapons. By August it was apparent that the commission was deadlocked.

On Aug. 12, the three western powers suggested that a series of talks be instituted by themselves, the Soviet Union and China in an attempt to break the deadlock. The U.S.S.R. turned down the invitation on Aug. 29.

European Council.—Ten nations united in 1952 to organize the European Council for Nuclear Research. They were France, West Germany, Belgium, the Netherlands, Italy, Switzerland, Denmark, Norway, Sweden and Yugoslavia. At a meeting of the council in Amsterdam in October, it was decided to establish an atomic laboratory on a 940-ac. tract just outside the city of Geneva, Switz. The cost of the laboratory was estimated at \$25,000,000.

It was planned to build a supersynchro-cyclotron for the laboratory along the lines of the cosmotron at the Brookhaven National laboratory in the United States. However, by taking advantage of the recent discovery at Brookhaven of a new way of focusing the proton beam, it was expected that the new machine would attain a beam with energies of 30,000,000,000 ev, making it the most powerful atom-smasher in the world.

The president of the council was Paul Scherrer of Switzerland; the vice-presidents were Francis Perrin of France and Werner Heisenberg of Germany. Edward Amaldi of Italy was secretary. The council program was divided into four sections under the respective leadership of four group directors, C. J. Bakker of the Netherlands, O. Dahl of Norway, L. Kowarski of France and Neils Bohr of Denmark.

French Atomic Activities.—The French Atomic Energy commission was created on Oct. 18, 1945. The high commissioner in 1952 was Francis Perrin, who replaced Frederic Joliot-Curie after the latter's dismissal. The commission has laboratories and plants at Chatillon and during the year was completing a "Center for Nuclear Studies" on the Saclay plateau at Seine-et-Oise.

The first French nuclear reactor, an experimental reactor employing heavy water as a moderator, went into action on Dec. 15, 1948. A large reactor was being built at Saclay. About 1,500 scientists, engineers and technicians were employed in the French atomic effort.

German Atomic Plans.—Werner Heisenberg, Germany's leading atomic physicist, told a scientific meeting in Berlin on Oct. 1, 1952, that the German Federal Republic would undertake the mining of uranium and the construction of a nuclear reactor for nonmilitary purposes once the treaties with the western powers were ratified. Atomic research in Germany had been banned since 1946 by action of the Allied Control council.

Brazil's Atomic Plans.—Adm. Alvaro Alberto, chairman of the Brazilian National Research council, and five of his experts were visitors at Oak Ridge, Tenn., in Feb. 1952. The admiral was Brazil's representative on the United Nations Atomic Energy commission and its chairman in 1946. He disclosed that Brazil planned the construction of an experimental nuclear reactor. Three areas of rich uranium deposits had been located in the inland mining state of Minas Gerais. In July a number of U.S. atomic scientists visited Brazil, including I. I. Rabi of Columbia university and John Marshall and Herbert Anderson of The University of Chicago, Ill.



WOOMERA VILLAGE, residential area of the closely guarded Anglo-Australian guided missile range near Adelaide in southern Australia. More than 3,000 civilians and servicemen lived in the isolated desert community in 1952, the greatest hardships being the wind and intense heat

Appeal of Spies Rejected.—By a vote of 8 to 1, the U.S. supreme court on Oct. 13, 1952, refused to review the cases of Julius and Ethel Rosenberg who had been sentenced to death for their part in the atomic espionage ring, and of Morton Sobell who had been sentenced to serve 30 years in prison. The three had been convicted as members of the ring which conveyed information from Klaus Fuchs, German-born British scientist, and others, to agents of the U.S.S.R. (See also BUDGET, NATIONAL; LAW; PHYSICS; STANDARDS, NATIONAL BUREAU OF; URANIUM.)

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Atom Smashers: see ATOMIC ENERGY.

Audio-visual Education: see MOTION PICTURES.

Aureomycin: see CHEMOTHERAPY.

Australia, Commonwealth of. A self-governing member of the Commonwealth of Nations, Australia is situated in the southern hemisphere. Areas and populations of the six federated states, Australian Capital Territory and Northern Territory are:

States and Territories	Capital	Area (in sq.mi.)	Population (1947 census)	Population (Dec. 1951 est.)
New South Wales	Sydney	309,432	2,984,838	3,358,760
Victoria	Melbourne	87,884	2,054,701	2,291,354
Queensland	Brisbane	670,500	1,106,415	1,219,606
South Australia	Adelaide	380,070	646,073	729,836
Western Australia	Perth	975,920	502,480	591,602
Tasmania	Hobart	26,215	257,078	307,014
Northern Territory	—	523,620	10,868	15,527
Australian Capital Territory	Canberra	940	16,905	25,036
		2,974,581	7,579,358	8,538,735

In 1947 full-blooded aborigines were estimated at 50,000 and half-castes numbered 27,179. Territories under the administration of the commonwealth but not included in it comprise Papua-New Guinea (*q.v.*), Norfolk Island, the Territory of Ashmore and Cartier Islands and the Australian antarctic territory. Language: English. Religion (1947 census): Anglican 2,957,032; Roman Catholic 1,569,726; Methodist 871,425; Presbyterian 743,540; Baptist 113,527; Lutheran 63,243; other Christian 354,443; Jewish 32,019; other non-Christian 4,543; indefinite and no religion 45,036; no reply 824,824. Chief towns (pop., 1950 est.): Sydney 1,584,830; Melbourne 1,326,400; Brisbane 440,000; Adelaide 430,000; Perth (incl. Freemantle) 309,000; Newcastle 134,580; Hobart 87,120. Governor generals: Sir William McKell and (from Jan. 1, 1953) Field Marshal Sir William Slim; prime minister, Robert Gordon Menzies.

History.—In Feb. 1952 the commonwealth was shocked to hear of the death of King George VI. The journey to Australia of Princess Elizabeth and the Duke of Edinburgh was inter-

rupted by the princess' return to London to be proclaimed queen.

The most notable domestic event in 1952 was the check to inflation. The government action was not popular and it increased what was generally described as a "very marked swing to Labour." It was clear that in Australia inflation was far less unpopular than a probable depression. There was much evidence of public dissatisfaction with the conduct of affairs in Korea and a marked desire for an end to hostilities. It appeared that people in Australia felt that the chances of war had receded, but there was still much concern in the parliaments and the press with Communism and defense.

The height of the postwar inflationary boom was passed at the end of 1951. Australia's postwar history of expansion, rapidly rising incomes and employment (unemployment was rare and of short duration), as well as record immigration and investment, was checked. Unemployment was rising and was considerably more than 50,000 people, but probably a much smaller number of people were out of work for more than a few weeks. Immigration was substantially cut, and the nature of investment, but not its volume, had changed.

The check to the postwar boom was brought about by a fall in the price of wool to about half its record level and by a change in government policy. The fall in wool prices had its usual depressing psychological effect on business, but not nearly so marked as such a fall had always had in the past. This was because there was confidence that "cold war" demands for wool would continue. The change in government policy produced a cut in bank lending in certain fields (although bank loans continued to rise in total), and a change in the incidence of taxation against consumption and in favour of investment. The net result was an increase in private investment as a proportion of total expenditure, a fall in the proportion of personal consumption, of government expenditure on administration, health and repatriation, and a rise in the proportion of expenditure on war and defense. National income rose by less than 5%, but expenditure rose by nearly 25% during the year. This rise in expenditure (without anything like a corresponding rise in income) came about because £A1,239,000,000 was spent on imports, while only £A721,000,000 was obtained for exports. The result was a heavy drain on London funds and a sudden imposition of restrictions on imports, which had a very harmful effect upon British producers and merchants.

Although the proportion of total expenditure made for war and defense rose, and the number of men in the armed services was a record for peacetime, the rate at which these developments were taking place was reduced. This was partly because it was realized that the initial aims would have been inflationary on an already overloaded economy and partly because a policy was decided, in collaboration with the United States and Great

Britain, for Australia to import more of its arms requirements and produce more food and raw materials.

The year opened with a commonwealth finance ministers meeting in London in January, and closed with a commonwealth economic conference in which the pressing issues of financial, commercial and economic policy with which several governments were faced were discussed. Little was achieved in 1952 toward the solution of these issues, but it was certain that a downward pressure on wages and costs would be maintained in an effort to ease sterling-dollar exchange.

The commonwealth parliament settled down during the year to a government majority in both houses and more constructive action was taken than in 1951. The Commonwealth Loan council met in May and the prime minister announced that the government could support a loan program of no more than £A125,000,000, but the state premiers outvoted the commonwealth and adopted £A247,500,000 for the year. The prime minister announced the intention of the government to end uniform taxation and return the function of raising taxes to the states.

An outcome of the agreement between Australia, New Zealand and the United States, negotiated as a result of the Japanese peace treaty, which was ratified by the Australian parliament during the year, was the formation and first meeting of the Pacific (ANZUS) Council of Ministers in Honolulu, T.H., in August.

The 1952-53 commonwealth budget included adjustments and reductions of taxation, particularly on companies, increased expenditure on war and defense and social service benefits. None of the increased expenditure on social services was the result of increases in the rates.

Record employment in industry of 2,643,000 was passed in Nov. 1951 and the trend afterward was downward. Unemployment was not uniform over the commonwealth or throughout industry. However, prices continued to rise with little change in the rate. The commonwealth basic wage reached £A11 4s. a week in July 1952, and average weekly earnings in industry in March were £A13 7s.

The year closed with the hearing of an application to the Commonwealth Arbitration court by employers' organizations for a reduction of £A2 6s. a week in the basic wage, and an increase in the working week to 44 hr.

During the year a further loan of \$50,000,000 was made to Australia by the International Bank for Reconstruction and Development. There were important discoveries and developments of uranium deposits in Australia, and atomic weapons were tested. (See also ATOMIC ENERGY; INTERNATIONAL BANK FOR

RECONSTRUCTION AND DEVELOPMENT.)

(J. F. C.)

Education.—Schools (1950): state 7,969, pupils 869,906, teachers 33,271; private schools 1,835, pupils 281,056, teachers 12,425. Universities 8, students 33,000.

Finance and Banking.—Budget: (1951-52) revenue £A1,002,400,000, expenditure £A903,900,000; (1952-53 est.) revenue £A959,900,000, expenditure £A959,400,000. National debt (Dec. 1951) £A3,183,100,000. Currency circulation (July 1952) £A301,000,000. Gold and balances held abroad (March 1952) £A316,600,000. Bank deposits (July 1952) £A995,000,000. Monetary unit: Australian pound with an exchange rate of £A1.25 to the pound sterling and £A0.45 to the U.S. dollar.

Foreign Trade.—(1951) Imports £A940,800,000; exports £A916,900,000. Main sources of imports (1951): U.K. 48%; U.S. 8%; India 5%. Main destinations of exports: U.K. 33%; U.S. 15%; France 9%. Main imports (1951): machinery and vehicles 27%; piece goods 10%; petroleum and products 9%; textile manufactures 7%. Main exports: wool 65%; wheat 8%; wheat flour 4%; dairy products 3%.

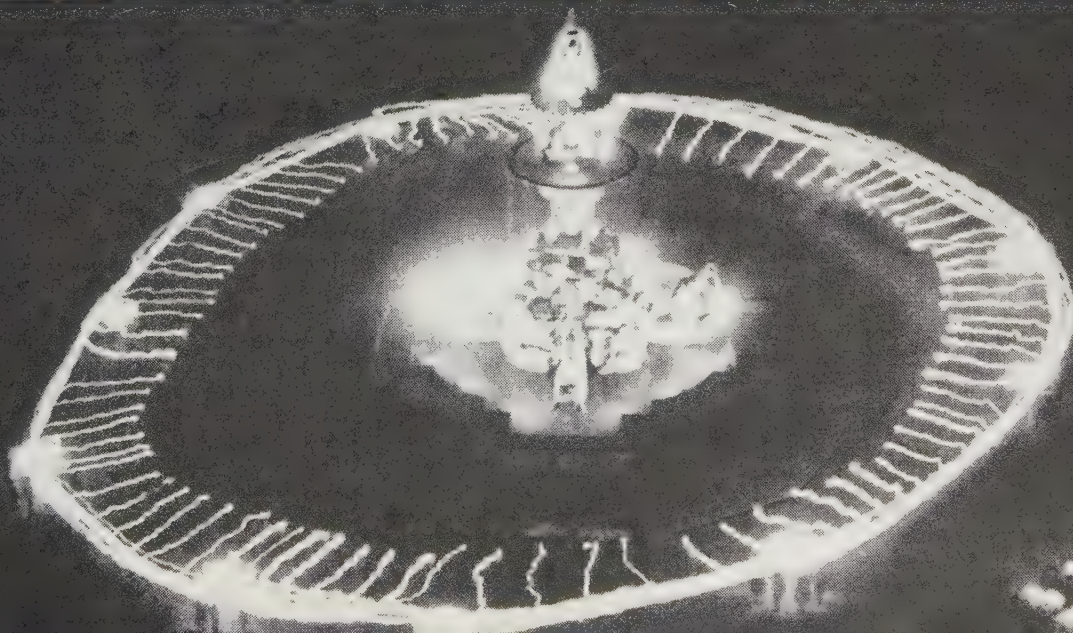
Transport and Communications.—Roads (1947): 515,710 mi. Licensed motor vehicles (Dec. 1951): cars 955,537; commercial vehicles 579,492. Government railways (1950-51): 26,954 mi.; passenger journeys 476,113,000,000; goods carried 41,324,000,000 tons; train miles run 88,676,000,000. Shipping (merchant vessels of 100 gross tons and over, July 1951): 357; total tonnage 557,484. Air transport (1951): internal and overseas miles flown 51,180,000,000; passenger-miles 910,904,000,000; freight, incl. mail, net ton-miles 28,990,000,000. Telephones (1951): 1,182,035. Radio receiving set licences (March 1952): 1,985,111.

Agriculture.—Main crops (metric tons, 1951, except as indicated): wheat 4,392,000; oats 505,000; barley 522,000; maize (1950) 102,000; sugar, raw value, 759,000; potatoes 429,000. Livestock (Oct. 1950-Sept. 1951): sheep 115,556,000; cattle 15,239,000; pigs 1,134,000; horses 999,000. Wool production (clean basis, 1951) 282,000 metric tons. Milk production (1951) 1,012,700,000 gal. Food production (metric tons, 1951): butter 142,800; cheese 42,000; meat 1,003,000, incl. beef and veal 649,000.

Industry.—Manufacturing establishments (1950-51): 43,129; persons employed (incl. working proprietors) 968,232. Fuel and power (1951): coal 17,892,000 metric tons; lignite 7,956,000 metric tons; manufactured gas 10,716,000,000 cu.m.; electricity 10,476,000,000 kw.hr. Raw materials (metric tons, 1951): refined copper 12,700; refined lead 202,800; zinc 78,900; pig iron 1,344,000; steel ingots and castings 1,419,000; gold (1951) 870,000 fine ounces. Manufactured goods (metric tons, 1951): wool yarn 20,600; cement 1,236,300. New dwelling units completed (1950-51), 67,444.

Austria. A republic of central Europe, Austria is bounded north by Germany and Czechoslovakia, east by Hungary, south by Yugoslavia and Italy and west by Switzerland. Area: 32,375 sq.mi. Pop.: (1939 census) 6,652,720; (1951 census) 6,918,959. Language: German 98%, other 2% (mainly Slovene in Carinthia). Religion (1939): Roman Catholic 88.27%, Protestant 5.35%, Jewish 1.26% (.2% in 1945), other 5.12%. Principal towns (pop., 1951 census): Vienna (cap., 1,760,784); Graz (226,271); Linz (185,177); Salzburg (100,096); Innsbruck (94,599); Klagenfurt (62,792). President in 1952, Theodor Koerner; chancellor, Leopold Figl. The Austrian government had jurisdiction throughout Austria, with certain limitations regarding matters over which control was reserved to

"DANCE OF THE TORCH BEARERS," marking the official opening of the 1952 Salzburg Music festival in Austria



quadrupartite decision in the Allied Council for Austria. By Dec. 31, 1952, members of the A.C.A. were: France, Jean Payart; United Kingdom, Sir Harold Caccia; United States, Llewellyn E. Thompson, Jr.; U.S.S.R., Lieut. Gen. V. P. Sviridov.

History.—Two factors continued to dominate the Austrian political scene in 1952: the four-power occupation and the coalition government. There remained little doubt that but for the former the latter would have disintegrated. Characteristic of the strain between the two coalition partners, the People's party and the Socialist party, was the dispute over the return of the estates of Prince Ernst Ruediger von Starhemberg, the pre-World War II Heimwehr leader. These estates had been confiscated by the nazis and were now to be returned under the restitution law. The Socialists, who regarded the prince as the archenemy of the Austrian working class, condemned this decision. On Jan. 7 they called a token strike, and on the same day the Communists led demonstrations in Vienna. On Jan. 23 the Socialists introduced a bill to prevent Starhemberg from taking possession. This bill was bitterly opposed by the People's party and the extreme right-wing Union of Independents on the grounds that being directed against a legitimate court decision it undermined the rule of law. The Socialists argued that Starhemberg, by being largely responsible for the collapse of Austrian democracy, had put himself outside the rule of law. Finally a compromise was found. A bill was passed which empowered the government to suspend for an indefinite period the operation of the court decision. The estates were placed under the administration of the provincial authorities concerned. The coalition was shaken but not broken.

Throughout the year suspicion and bitterness between the two coalition parties was heightened by allegations of jobbery and corruption in the administration of nationalized industries and banks. The judiciary was accused of bias in these matters. On Sept. 16 Otto Tschadek, the Socialist minister of justice, resigned and was succeeded by the nonparty expert Josef Gerö.

The People's party, itself an uneasy alliance of industrial, agricultural and white-collar interests, remained subject to internal strains. Tension within the party found expression in the resignation on Jan. 23 of three People's party ministers: Eugen Margaretha (finance), Josef Kraus (agriculture) and Felix Hurdes (education). They were replaced by Reinhard Kamitz, Franz Thoma and Ernst Kolb (all People's party), respectively.

The first task of the reorganized government was to cope with the worsening economic situation. In this it was only partially successful. Inflation was stopped but export prices could not be reduced sufficiently to make up for the ending of boom conditions in the world markets. The slackening of demand for exports coupled with severe credit restrictions caused a considerable increase of unemployment. In some of the provinces the position became so serious that funds had to be made available for relief works. All this despite the fact that in this the last year of the European Recovery program, a further \$120,000,000 was pumped into the Austrian economy. Total ERP aid received by Austria therefore amounted to approximately \$920,000,000 or about four times as much as the League of Nations loan granted to Austria after World War I calculated at present day prices. It began to be widely recognized that the continued dependence of the Austrian economy on foreign aid was the result not only of the burden of occupation and the soviet hold on important industrial assets but also of Austria's inability to trade with its neighbours in eastern Europe.

Relations with Yugoslavia improved considerably. In June Karl Gruber, the foreign minister, visited Marshal Tito and reached general agreement on the desirability of expanding trade between the two countries and on reopening the common frontier. The latter point was settled in detail at a conference

held at Bad Gleichenberg in September.

Friendly relations between the Austrian government and the western occupying powers continued and were extended—too much indeed for the liking of the Communists who alleged that Austrian foreign policy was directed by the U.S. state department.

Soviet policy toward Austria seemed to take a more favourable turn with the permission to resume traffic on the Danube river between Vienna and the U.S. zone. But the soviet view continued to be that Austria was not democratized, that "fascist" influences had not been eliminated, and that rearmament was carried on in the western zones. In these circumstances negotiations for concluding the long-awaited state treaty were continued in an atmosphere of pessimism. In March the western powers put forward a shortened draft of the treaty (it contained only 8 clauses instead of 59). Designed to by-pass minor disagreements, it was in effect much less favourable to the U.S.S.R. than the longer version. It left out provision for the payment of \$150,000,000 by Austria in return for soviet cession of the German assets, nor did it deal with soviet claims on Austrian oil production and on the Danube Shipping company. The subsequent exchange of notes showed that, although the Russians were unwilling to slam the door on the Austrian treaty, the shortened draft did not provide a basis for its conclusion.

(V. T. E.)

Education.—Schools (1951-52): elementary and private 4,517, pupils 622,603, teachers 24,992; secondary 167, pupils 61,634, teachers 3,896; technical and commercial 31, pupils 8,652, teachers 1,266. Teachers' training colleges 35, students 4,030, professors and lecturers 548; universities 4, students 12,939, professors and lecturers 1,825.

Finance and Banking.—Budget (1952 est.): revenue 18,669,000,000 schillings, expenditure 19,700,000,000 schillings. Internal debt (Dec. 1949): 11,826,000,000 schillings. Currency circulation (July 1952) 8,720,000,000 schillings. Bank deposits (June 1952): 8,940,000,000 schillings. Monetary unit: schilling with an exchange rate (Nov. 1952) of 72.40 schillings to the pound sterling and 21.42 schillings to the U.S. dollar.

Foreign Trade.—(1951) Imports 14,027,000,000 schillings; exports 9,635,000,000 schillings. Main sources of imports (1951): U.S. 22.2%; Germany 16.8%; U.K. 9%; Italy 5%. Main destinations of exports: Germany 14.2%; Italy 11%; U.S. 8.8%. Main imports: coal, grain, machinery and vehicles. Main exports: iron, steel and manufactures, pulp, paper and manufactures, and wood.

Transport and Communications.—Roads (1947): 53,000 mi. Licensed motor vehicles (Dec. 1950): cars 51,300, commercial vehicles 47,000. Railways (March 1951): 3,761 mi.; passenger-miles (1950): 2,670,000,000; freight, ton-miles (1950): 3,311,000,000. Telephones (1951): 412,394. Radio receiving sets (1950): 1,318,000.

Agriculture.—Main crops (metric tons, 1951 except as indicated): wheat 343,000; barley (1952) 268,000; oats (1952) 347,000; rye 334,000; maize 159,000; potatoes 2,149,000; sugar (raw) 159,000. Live-stock (Dec. 1951): cattle 2,280,548; sheep 362,457; pigs (March 1951) 2,523,182; horses 283,025; goats 322,816; poultry 6,971,694.

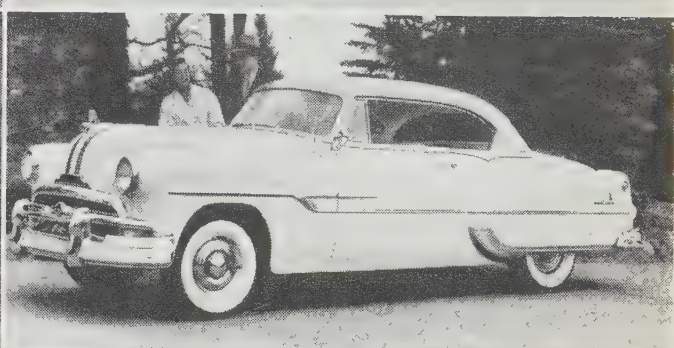
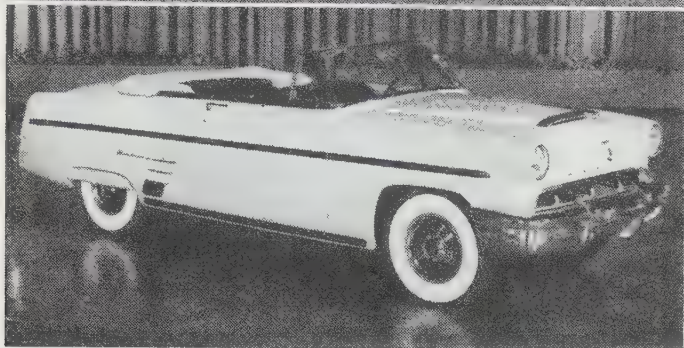
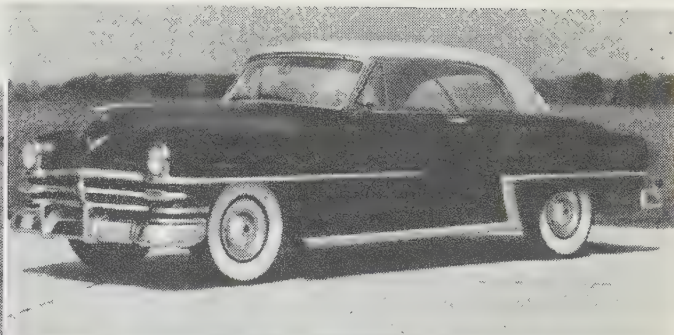
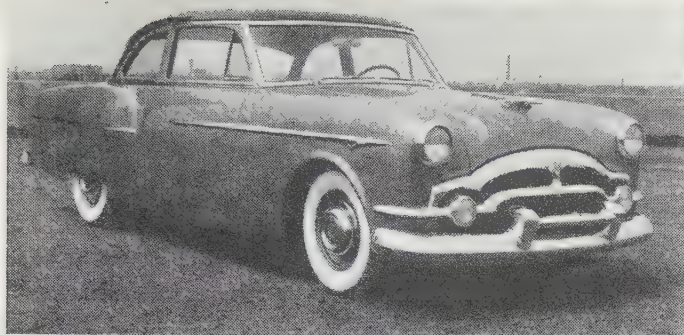
Industry.—Insured persons employed (Aug. 1951): 2,046,000. Fuel and power (1951): coal 195,000 metric tons; lignite 4,992,000 metric tons; manufactured gas 305,000,000 cu.m.; electricity 5,652,000,000 kw.hr.; crude oil (1950) 1,525,000 metric tons. Raw materials (metric tons, 1951): iron ore 2,376,000; pig iron 1,050,000; steel ingots and castings 1,028,000; magnesite 664,000; lead (smelter) 9,500. Manufactured goods: woven cotton fabrics 14,400; cotton yarn 21,800; wool yarn 20,800; rayon staple fibre 41,800; paper 261,000.

Autobiography: see ENGLISH LITERATURE; etc.

Automobile Accidents: see ACCIDENT PREVENTION.

Automobile Industry. Many factors deterred automobile production in the United States during 1952, the longest stoppage being caused by the nationwide steel strike. By October, a total of 3,531,257 automobiles and 971,120 commercial vehicles had been manufactured, or 24% less than in the same period of 1951. The National Production authority continued its restrictions on the number of units to be produced, while the Controlled Materials plan was still stringent in its allocation of aluminum and copper.

Despite the restricted production, the United States continued to lead the world in vehicle output. In 1951 the U.S. automobile industry turned out 6,765,263 cars and trucks. This repre-



Above, left: THE 1953 PACKARD
Above, right: THE 1953 CHRYSLER club coupe
Below, left: THE 1953 MERCURY Monterey convertible
Below, right: THE 1953 PONTIAC Custom Catalina

sented 72% of the total world output for that year. During that year, the United States exported 478,000 vehicles, while importing 24,413.

Defense.—The task of stepping up defense production, while at the same time maintaining a profitable level of civilian output, was continued in 1952. This was accomplished in spite of the strikes and shortages which cut off steel and other materials from the industry's assembly lines. From the start of the Korean conflict to mid-spring of 1952, the industry added more than 40,000,000 sq.ft. of floor space to its facilities. Besides the demands on working space, there was an even more urgent need for machine tools and heavy equipment. Throughout the year the industry accelerated its tooling program in an endeavour to catch up on its huge backlog of defense contracts.

During the year, more dual-purpose plants were being constructed. In these factories both civilian and defense production were carried on under one roof. One manufacturer produced cargo planes for the air force alongside of civilian automobiles. Another automotive firm combined the production of 3.5-in. bazooka rockets and automobile parts in one factory. Production of the largest and most powerful reciprocating engine in the world was started by one firm as others were building aircraft components and assemblies as well as completed aeroplanes. The automobile industry also played a major role in the country's jet aeroplane program, not only in the construction but also in research and design. Several companies devoted as much as 60% of their work to defense, turning out, in addition to aircraft and parts, tanks and tank cannon, tactical trucks, shells

and many other military items. The ordnance department of the army returned the tank assembly line of the Detroit tank arsenal to its original operator, the Chrysler corporation. While private industry had taken over the actual tank production, the ordnance department had retained the functions of research and development, inspection and construction of gauges for government standards.

Materials.—Shortages of materials was the greatest production problem of the industry. Copper and steel headed the list of hard-to-get materials, with aluminum running a close second. Early in the year, the Defense Production administration alleviated the aluminum situation somewhat by allocating an additional 1,000,000 lb. of that metal to the industry out of government reserves. Even with the new stock of aluminum, it was still the supply of materials that set the pace for production rather than the quarterly production quotas decreed by the National Production authority. Although the second quarter quota of passenger cars was pegged at 1,050,000, the auto producers would have been able to turn out only 800,000 had they

Table II.—U.S. Motor Vehicle Production, 1945–52

Year	Passenger cars	Trucks and buses	Total
1945	69,532	655,683	725,215
1946	2,148,699	940,866	3,089,565
1947	3,558,178	1,239,443	4,797,621
1948	3,909,270	1,376,274	5,285,544
1949	5,119,466	1,134,185	6,253,651
1950	6,665,863	1,337,182	8,003,045
1951	5,336,935	1,428,328	6,765,263
1952*	3,531,257	971,120	4,506,424

*Estimated, through October only.
Source: Automobile Manufacturers Association.

Table III.—World Production of Motor Vehicles, 1951

	Passenger Cars	Trucks	Buses	Total
U.S.	5,336,935	1,418,868	9,460	6,765,263
Canada	281,245	131,950	577	413,772
Australia	20,934	7,854	*	28,788
Austria	*	2,000	359	2,359
Finland	*	110	173	283
France	313,916	128,364	2,724	445,004
Germany†	267,417	84,992	4,226	356,635
Italy	119,267	24,607	1,679	145,553
Japan	3,432	34,248	†	37,680
Netherlands	*	898‡	†	898‡
Norway	*	*	20	20
Spain	8	300	*	308
Sweden	10,881	6,632	975	18,488
United Kingdom	475,920	257,964	†	733,884
U.S.S.R.‖	28,100	369,200	6,400	403,700

*None. †Federal Republic. ‡Included with trucks. §Not available. ‖1950 data. ¶First 10 months.
Source: Automobile Manufacturers Association.

Table I.—Monthly Production of U.S. Vehicles, 1952

	Passenger cars	Trucks	Buses	Total
January	273,572	101,060	778	375,410
February	333,885	100,706	625	435,216
March	373,231	109,173	569	482,973
April	416,155	112,833	597	529,585
May	397,836	105,658	423	503,917
June	408,250	109,976	484	518,710
July	168,327	43,343	224	211,894
August	218,577	52,056	349	270,982
September	441,424	113,315	†	554,739
October*	500,000	123,000	†	623,000
Total	3,531,257	971,120	4,049	4,506,426

*Estimated. †Not available.
Source: Automobile Manufacturers Association.

put as much copper into each automobile as they had previously. However, by stretching out their existing supply through substitution and design changes, the car makers produced nearly 1,000,000 automobiles during the second quarter.

Toward the end of April the shortages showed promise of clearing. Chrome stainless steel had been removed from rationing under the Controlled Materials plan; the ban on natural and synthetic rubber had been lifted as were the restrictions on the use of lead; in spite of the impending strike, the Defense Production administration planned to relax steel controls by the end of the year.

During the first week of May, however, Chile broke off the year-old agreement to sell 80% of its copper to the United States at a fixed price, and decided to enter the free world market. To help counteract this move the government withdrew more copper from its stock pile and removed the ceiling price on imports.

The next blow to the industry was the steel strike, which started on June 2. June and July saw stock piles depleted, supply lines exhausted, and production slowed down to a near all-time low. Even after a settlement was reached on July 24, new restrictions deterred the return to full production. All expectations of lifting steel controls by the end of the year were forgotten when the National Production authority and the Defense Production administration came out with their formula for steel distribution. Top priority for steel shipments was given to military production, and civilian production dislocations were inevitable. Complete restoration of civilian production did not occur until fall.

In the battle for conserving critical materials, the automotive industry waged its own campaign. Engineering ingenuity was expected to save 30,000,000 lb. of aluminum in 1952, through redesign, substitution and improved methods. Through 1951 and 1952, conservation on the part of industry and production cut-backs promised to save nearly 400,000,000 lb. of aluminum and copper. In terms of production this was enough copper to build 7,000,000 cars and enough aluminum for 6,000,000 cars. These savings, however, rather than being destined for automobile production, were earmarked for defense purposes.

Engineering.—During the year, new devices, designed for the comfort and convenience of the driver, appeared on several automobile models. Among these was the automatic headlight dimmer. This device automatically lowers the driver's headlight beam when another car approaches at night. A photocell, mounted near the steering wheel, is the heart of the instrument. It picks up the light from an oncoming car, changes it to an electrical signal, and sends it to an electronic amplifier to be magnified. The voltage (signal) coming out of the amplifier operates a switch which lowers the beam. For operation of the automatic system, the conventional dimming switch must be on "high." An auxiliary switch adjacent to the dimmer may be depressed if it is desired to prevent the system from lowering the beam. In the event of failure in the electronic part, the dimmer can be operated manually.

It was announced in 1952 that air conditioners would be available as optional equipment on at least three 1953 model cars. Several types were introduced. Using nontoxic Freon in a completely sealed refrigeration unit, one model was basically the same as those in offices and railroad trains. Mounted on the rear shelf in the trunk compartment, the unit caused no appreciable appearance changes in the automobile. Another air conditioner drew in fresh air from the outside instead of recirculating that already in the car. The air was not only cooled, but also freshened and dehumidified. When cooled by one of these air conditioners, a car that had been standing in the sun at high temperatures could be made comfortable after driving only



PLASTIC MODEL of the average U.S. male, constructed by the Ford Motor company in 1952 for use in designing automobile seats, arm rests, head and leg room, etc. Based on army physical records for World War II, the average U.S. male weighed 164 $\frac{3}{4}$ lb. and was 5 ft. 9 in. tall

a few city blocks. The desired temperature was maintained by a single control on the instrument panel.

Tinted glass, which enjoyed limited use in 1951, came into its own in 1952. The bluish-green tint excludes up to one-half of the radiant heat and ultra-violet rays which usually penetrate ordinary glass, and appreciably reduces glare from the headlights of oncoming cars during night driving. Starting with a band of shaded green glass at the top, the colouring fades out imperceptively toward the bottom of the glass pane.

A four-barrel carburettor, yielding better volumetric efficiency (breathing ability) at high speeds, was introduced on several 1952 models. Power steering, found on only one 1951 automobile, was extended to five 1952 cars. Brought out in 1951, power braking was available on two models in 1952.

The race for horsepower supremacy continued in 1952 as one automobile manufacturer released a 190 h.p. engine. Of even greater importance, however, was the continued trend toward higher compression ratios. The average compression ratio in 1952 was 7.18:1, compared with 7.11:1 for 1951. Research was being conducted on engines with compression ratios as high as 12:1.

More rolling laboratories, futuristic experimental automobiles which feature new developments in automotive design, appeared in auto shows and exhibitions. While these cars of the future were not intended to be mass produced, many of their engineering features would be incorporated in coming models. One truck builder introduced automatic transmissions on his line of delivery vehicles.

Employment.—Automotive centres were severely beset by unemployment at the beginning of 1952. As the year started, there were more than 100,000 workers idle in the Detroit, Mich., area alone. Among the factors blamed for the distress were the restrictions of the National Production authority upon automo-

bile production, shortages of critical materials, and the long lead time involved in converting from civilian to military production. However, with the companies catching up on their tooling programs, and with new contracts going into the automotive centres, the employment situation showed improvement during the year. Except for the interruption which came with the steel strike, the number of unemployed diminished to the extent that by early fall a man power shortage was realized in some areas. It was interesting to note that the greater need was for the unskilled labourer rather than the semiskilled or skilled worker.

Prices.—The Capehart amendment to the Defense Production act, rather than supply and demand, continued to be the scale by which the Office of Price Stabilization weighed petitions of automotive concerns for price increases. Higher production costs forced the majority of the car makers to apply for price boosts, most of which were granted. Price advances of up to \$200 were seen through the first quarter of 1952. A few cut-backs were realized, however, when several companies reduced the amount of expensive conversion steel used in their cars. Such a reduction, under the Capehart amendment, necessitated corresponding price reduction.

Price increases of another nature were seen in August, as a modification of ceiling price regulation 83 permitted franchised new car dealers to employ a less rigid system of price controls. Specific dollars-and-cents ceilings on new cars, by make, were ended, since the ceilings were to be determined by the individual dealer markups. The new regulation reinstated discounts and preparation charges on new automobiles equal to those applying before the Korean war. With "basic" price ceilings eliminated, the dealers were allowed to use markups based on one of two periods—the pre-Korean war period (April 1, 1950, to June 24, 1950) or a Korean war period (Jan. 25, 1951, to Feb. 24, 1951). Though factory wholesale prices were to remain unchanged, a 1% increase in the cost to the consumer was expected.

Prices on new cars climbed in 1952, but taxes rose even higher. By midyear it was estimated that of \$2,000 paid for a new automobile, \$650, or about a third, went into taxes.

Styling.—The possibilities of mass producing sports cars in the United States were investigated by two manufacturers, the Packard Motor Car company and Buick Motors division, as both companies unveiled their versions. While immediate production was not scheduled for either model, the producers exhibited the sports cars to test public reaction and to determine the possible extent of the market for such an automobile.

Packard's model, the Pan-American, was powered by a 185-h.p. modified stock engine and had wire wheels and a rear-mounted spare. Chrome was minimized to give the car a smooth appearance over the finely styled fenders. Only 37½ in. high, the Pan-American featured a low centre of gravity, making it easy to handle when turning corners.

Like the Pan-American, Buick's model, called the Skylark, also had wire racing wheels. Mounted on a conventional chassis, and propelled by one of Buick's standard engines, the automobile embodied several features suggesting the continental mode of sports car styling, such as swept-down doors and cut-away fenders. (See also MOTOR TRANSPORTATION; MUNITIONS OF WAR: Army.)

(C. F. KE.)

Automobile Insurance: see INSURANCE.

Automobile Racing. Troy Ruttman of Lynnwood, Calif., annexed the most desired honours in the sport when he piloted his Agajanian Special home first in the 500-mi. race at the Indianapolis speedway on May 30, 1952. The 22-year-old winner, youngest driver in the classic, finished in the elapsed time of 3 hr. 52 min. 41.88 sec., and

pushed his car to a new record for the event by averaging 128.922 m.p.h. Victory came to Ruttman when Bill Vukovich of Fresno, Calif., the leader, crashed into the northeast wall with only eight laps to go. Ruttman, who had been second to Vukovich for many laps, received \$61,743 in prizes. The race, which was seen by more than 175,800 persons, carried awards of \$230,100, the biggest purse in its history.

Second place went to Jim Rathman of Chicago, Ill., driving a Grancor-Wynn's Special, who averaged 126.723 m.p.h. Sam Hanks of Glendale, Calif., was third; Duane Carter, Culver City, Calif., fourth and Art Cross, Morristown, N.J., fifth.

Driving the same car, Ruttman added to his achievements for the season by taking the 200-mi. Southern Speedway A.A.A. championship grind at Raleigh, N.C., July 4. The young coast star collected \$6,000 after a close duel with Jack McGrath, Los Angeles, Calif., who finished two laps behind in a Hinkle Special. Carter was third and Rathman fourth.

George Hill, Burbank, Calif., drove an Estes Mercury Special, a "hot rod" built in a California back-yard shop, to a new international class C mark over the mile course on the Bonneville salt flats of Utah. Hill averaged 229.77 m.p.h. in the car owned by Bob Estes, Inglewood, Calif. More than 20 other records in classes C, E and F were made in Utah, where Lieut. Col. A. T. Gardner, 61-year-old British ace, fell two-fifths of a second short of his own world standard of 200.6 m.p.h. for the 5-km. run. Gardner, after setting five American class E marks and three new international times, cracked up his supercharged MG racer on Aug. 16, but returned to the flats on Aug. 21 to set three marks in the national class F.

Fonty Flock, Decatur, Ga., piloted a 1952 Oldsmobile to first place in the Southern 500-mi. stock car race at Darlington, S.C., Sept. 1. Flock won the \$6,000 first prize by a two-lap margin over Johnny Patterson, Huntington, W.Va., who drove a 1952 Hudson.

Midget auto racing continued to grow in popularity and the 1952 championship of the American Automobile association was taken by Johnny Tolan, Denver, Colo., who scored a total of 3,516 points.

(T. V. H.)

Aviation, Civil. Most significant of the events in civil aviation during 1952 were the success of scheduled air-line tourist fares on the North Atlantic route and the introduction of regular turbojet air-line travel. North Atlantic tourist services were inaugurated May 1, with a New York-London fare of \$270, using the carriers' largest and most modern equipment. During the first three months of its operation approximately 150,000 persons crossed the North Atlantic, compared with 100,000 in the same period of 1951. With the seating density much higher than that operated in regular service, the 50% traffic increase was achieved by only a 10% increase in the number of flights.

At the same time the average number of passengers carried on first-class flights rose by nearly 20% over the previous year's pace.

The advent of British Overseas Airways corporation's Comet service between London and South Africa stirred competing lines the world over into action. Though shorter-ranged than piston engine aircraft, the 36-passenger British jet's 450-500 m.p.h. cruising speed and vibrationless comfort made it the world's most exciting mode of air travel. Pan American World Airways led the U.S. operators with an order for three improved Comets for 1956 delivery, after no U.S. manufacturers were able to quote delivery dates or prices on a U.S.-built jet liner.

United States air transportation continued its remarkable growth. Revenue passengers increased nearly 10% over the previous year, from about 25,300,000 to 27,800,000, while the



FIRST AIR COACH passengers to take off for Europe on the low-fare flights inaugurated by 11 transatlantic air lines in May 1952

volume of revenue passenger-miles moved up sharply from 14,242,000,000 to 17,100,000,000 or 20%.

Carriers comprising the United States air transportation industry (exclusive of Alaska) included in 1952: 14 domestic trunk lines, 20 local service, 4 certified cargo, 12 international, 3 territorial, more than 50 large irregular and a substantial number of small irregular carriers who are not required to report operating results to the federal regulatory agency—the Civil Aeronautics board.

The territory of Alaska, because of terrain and lack of integrated surface facilities, is basically dependent upon air transportation. It was served by 11 certificated air lines and approximately 100 pilot owners, or bush pilots as they are better known.

The figures in Table I compare industry activity during 1951 with estimated 1952 volumes. They do not include intra-Alaska air services and small irregular air carriers. A breakdown of this activity by carrier group is shown in Table II.

Table I.—U.S. Commercial Air Transport Industry

Item	1951 (actual)	1952 (est.)	Per cent increase
Traffic			
Revenue passengers	25,315,179	27,773,400	9.7
Revenue passenger-miles (000)	14,241,714	17,099,100	20.1
Mail ton-miles	90,918,031	102,836,400	13.1
Cargo ton-miles	391,806,831	411,233,100	5.0
Total revenue ton-miles (mail, cargo and passengers)	1,915,101,892	2,193,486,800	14.5
Revenue			
Passenger revenues	\$809,609,318	\$959,283,400	18.5
Mail revenues, U.S.	120,975,375	122,114,500	.9
Cargo revenues	110,522,160	118,593,900	7.3
Other revenues	38,339,997	37,886,100	1.2*
Total operating revenues	\$1,079,446,850	\$1,237,877,900	14.7

*Decrease.

Important actions in the development of United States air transportation during the year included the approval by the Civil Aeronautics board of two air-line mergers and active consideration of several others, reflecting a policy of encouraging the formation of fewer but stronger carrier organizations.

The local service experiment was continued by the renewal of temporary authorizations, and in the international field permanent operating rights were granted to Pan American and Trans World Airlines for the important transatlantic section of their certificates.

A large portion of the traffic increase in 1952 was the result of a substantial expansion in the volume of domestic air-coach

services with the reduction in rates in April. The maximum fare per mile for off-peak hour service was reduced to 4 cents, from a basic fare of approximately $4\frac{1}{2}$ cents per mile, established in Nov. 1950. The response to this fare reduction was evident in the 40% increase in coach passenger-miles—proportionately greater than the 20% experienced in first-class traffic—from 1,200,000,000 to 1,700,000,000 in fiscal 1952 over fiscal 1951. Domestic coach traffic in 1952 represented 15% of the total revenue passenger-miles flown by the domestic trunk-line operators. The Air Transport association's economic research department reported 1,017,082,000 air coach passenger-miles flown during the first six months of 1952, compared with 599,696,000 in the same period of 1951.

Table II.—Principal Divisions of U.S. Air Transport

Item	1951 (actual)	1952 (est.)	Per cent increase
Revenue ton-miles			
Domestic trunk lines	1,204,665,707	1,382,554,100	14.8
Domestic local service lines	31,739,077	36,114,500	13.8
International and territorial (except Alaska)	396,128,093	464,190,900	17.2
Certificated cargo lines	100,576,038	90,012,300	10.5*
Irregular carriers	181,992,977	220,615,000	21.2
Total revenue ton-miles (mail, cargo and passengers)	1,915,101,892	2,193,486,800	14.5
Operating revenues			
Domestic trunk lines	\$658,520,841	\$757,257,800	15.0
Domestic local service lines	37,643,132	42,341,100	12.5
International carriers	299,098,518	327,954,500	9.6
Certificated cargo lines	17,690,063	12,288,900	30.5*
Irregular carriers	66,494,296	98,035,600	47.4
Total operating revenues	\$1,079,446,850	\$1,237,877,900	14.7

*Decrease.

Production of Transport Aircraft.—High air-traffic levels in 1952 were accompanied by increased demands for new and additional capacity. Since the beginning of 1951 materials had been allocated for the production of 492 new transport aircraft, with a value of more than \$425,000,000, for United States air carriers. In addition, substantial allocations were made for aircraft purchased by foreign air lines. Of this total, 192 aircraft were delivered in 1951 and 1952, through September, with the balance of 300 scheduled for delivery through the first quarter of 1955. These aircraft would produce a lift which would be more than double that of the fleet in the carriers' possession at the end of 1950, thus assuming sufficient flexibility for expansion of traffic and retirement of some obsolete aircraft types.

Included in the backlog of transport planes were 12 passenger-carrying helicopters which had been approved for the inauguration of shuttle service in two major metropolitan areas in the country.

Lockheed reported that it would deliver 19 Super Constellations by July 1953 to transatlantic carriers. Of these, nine were to go to Royal Dutch Airlines (K.L.M.) and ten to Air France. These planes could be modified to seat 99 for tourist travel, compared with 65 for standard flight. Douglas announced it would deliver 20 new DC-6B's in the same period for the European passenger shuttle. These 39 additional planes alone would increase the passenger capacity of the transatlantic carriers by approximately 50% in 1953.

While three years earlier the U.S. flag carriers flew about 70% of the transatlantic traffic, by 1952 it was divided about 50-50 between U.S. and foreign carriers. Sir William P. Hildred, director-general of the International Air Transport association, pointed out that Pan American World Airways, largest of all international carriers, had 22,000 first-class and 21,000 tourist passengers between May 1 and Aug. 15. This compared with a 29,000 total for the same period in 1951. During the same time, Trans World Airlines, the other U.S. flag line operating regular transatlantic flights, increased from 21,000 in 1951 to 30,000 in 1952. The foreign flag carriers over the North Atlantic had

an increase of 66% in the ocean-crossing traffic for the summer of 1952, compared with the previous year.

Passenger fatalities on the domestic U.S. scheduled carriers, in relation to the volume of traffic carried, decreased substantially during the year. The 12-month period ending Sept. 30 was one of the best in the air lines' history, with 0.38 passenger fatalities per 100,000,000 passenger-miles. This compares with 1.3 fatalities during the calendar year 1951. Three spectacular accidents, involving one large irregular carrier and two scheduled air lines, occurred near Elizabeth, N.J., in late 1951 and early 1952 and resulted in the temporary suspension of activity at the Newark airport. Service was later restored on a restricted basis. A direct outgrowth of the Elizabeth accidents was the appointment of the President's Airport commission to study the problems of airport location.

Vice-Adm. Emory S. Land, president of the Air Transport association, calling attention to the naming of 42 scheduled U.S. air lines as winners of National Safety council awards, pointed out that during the period covered there had been an average of 12,464 daily take-offs and landings, and the percentage of fatal crashes was roughly 1/10,000 of 1%. He quoted traffic figures to prove that it was nine times safer to fly than it had been in 1931.

On June 30 the Civil Aeronautics board released its second subsidy separation report, wherein it established, for international, territorial and overseas operations of United States carriers, an administrative separation of service and subsidy mail payments. For the fiscal year 1952, the board estimated that subsidy payments amounting to \$45,343,000 had been included in the total mail payments of \$63,112,000 made to international, territorial and overseas carriers. The report notes that subsidy support for these operations would tend to increase during the next several years.

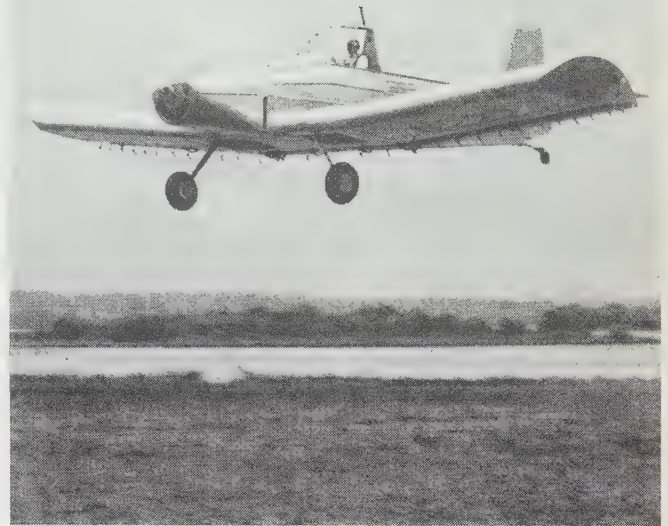
During the year a study was initiated to develop a multi-element service rate structure for use in mail rate-making procedures. The study, which would differentiate between terminal and transit costs, was being conducted by interested government agencies in co-operation with the air carrier industry.

Plans for mobilization of the air transportation industry moved ahead in 1952. The department of defense presented the initial requirements of the civil reserve air fleet and the Civil Aeronautics board released its proposed war air service pattern, a plan to provide service for essential wartime traffic with equipment remaining with the air lines after military diversion.

Current mobilization planning reflected the desire of the military agencies to maintain a strong civil transport system during a wartime emergency. In 1942, after the outbreak of World War II, the scheduled air lines were permitted to operate only 166 twin-engine aircraft. Under the 1952 plan, it was contemplated that more than 800 twin-engine and approximately 300 four-engine planes would be available for servicing priority traffic in wartime. Significantly, the civil reserve air fleet plan called for contract operation of military services by the air carriers rather than by militarization of the equipment or personnel. (See also AIRCRAFT MANUFACTURE; AVIATION, MILITARY; CIVIL AERONAUTICS ADMINISTRATION; JET PROPULSION; PETROLEUM.)

(A. O. C.)

Great Britain, Commonwealth and Europe.—The introduction of the mark I Comet jet liner on three routes of British Overseas Airways corporation was the outstanding event of 1952 in the civil aviation field. This mark of Comet had been criticized on the grounds that it had too short a range and carried too small a pay load. Fears were expressed that control authorities would not be able to give it adequate aids or fit it into traffic patterns, and that the cost of maintenance, particularly of en-



THE AG-1, first aeroplane designed exclusively for agricultural use, could carry up to 1,200 lb. of spray or dust, turn quickly at the end of a crop row and be controlled easily at low speeds and altitudes. The plane was constructed under contract of the Civil Aeronautics administration

gines, would be heavy. The first service, London-Johannesburg, began on May 2. The second, London-Colombo, opened on Aug. 11. The third, London-Singapore, started on Oct. 10 and was later to be extended to Tokyo. In general, the first six months of operation gave little support to the fears which had preceded the Comet's appearance: right up to the end of the year advance bookings on the Comets remained heavy, and the first six months' maintenance costs were no heavier than those for comparable piston-engined aircraft. The Comet was not unduly handicapped by bad weather or by the difficulty of obtaining navigational aids and traffic control systems appropriate to its high speed, nor by its high flying speed and high fuel consumption while waiting at low altitudes to land. However, its makers had realized that its limitations had to be tackled: by Feb. 16 the Comet II prototype had begun test flying.

The Comet II promised to give a stage length of about 2,000 mi. (Comet I, 1,500 mi.) with 44 passengers (Comet I, 36); in this mark the Avon engine was used instead of the Ghost. After several hundreds of hours' flying experience had been gained with the Avon, the design was announced—and deliveries promised in 1956—of the Comet III, which would have a range of 2,700 mi. carrying 58 to 78 passengers. Various United States operators at this time made inquiries about deliveries: Eastern Air Lines withdrew because delivery dates were considered to be too remote; Pan American World Airways placed an order for three Comet IIIs to be delivered in 1956 and took an option on seven more for delivery in 1957. This arrangement meant that only B.O.A.C. and Pan American could have Comet IIIs in 1956. It was estimated that the maximum output in later years would be 70 a year. But with the announcement of a new engine, the Conway, reputed to have a much more economical fuel consumption, there were hints that a Comet IV would appear in 1960. Five other international operators had placed orders for Comets of various marks: two slightly modified Comet Is were delivered to Canadian Pacific Airlines for use between Honolulu and Sydney; three Comet Is were to be delivered to Union Aeronautique Transport for the Paris-French Equatorial Africa and Paris-Saigon services. Six of the later Comets were on order for the British Commonwealth Pacific Airlines' Vancouver-Sydney service; two Comet IIs each had been ordered by the newly revived Japan Air Lines and by the Linea Aeropostal Venezolana.

Meanwhile, there was no sign in the United States either of agreement between operators and constructors or of enterprise on the part of a constructor that would produce competition for the Comet. On the other hand it was suggested that a second British constructor was designing a jet liner.

Some operators resolved their dilemma without hedging: the Belgian line, Sabena, announced flatly that it would have nothing to do with jets at this stage but would wait to see the jet aircraft expected from the United States; K.L.M. decided to re-equip with modern piston-engined aircraft; the Australian Qantas Empire Airways ordered the new Super Constellation to supplement and replace its existing Constellations; other companies turned to the DC-6 and DC-7. Even B.O.A.C. ordered some additional Stratocruisers. There were two reasons (apart from the desire to avoid the troubles of the Comet's development period) for sticking to piston-engined planes: one was the prospect of an expanding second-class tourist traffic, for which high-capacity aircraft were needed; the other was a belief that the advantage of the Comet's speed could be offset by the abnormally long range of the newest orthodox liners, a belief first expressed when the Comet began operations to South Africa. On the London-Johannesburg run the Comet had to refuel five times and about one hour was spent on the ground at each landing. It was pointed out that when K.L.M. received its Super Constellations, it would be able to compete with the Comet on the same run on a similar time schedule by making only one refuelling halt between Amsterdam and Johannesburg. A similar argument applied to the London-Australia route. There Qantas would be able to fly 4,000-mi. stage lengths, compared with the Comet II's 2,000-mi. stages, thus making range offset the difference of about 120 m.p.h. in the cruising speeds of the two planes without sacrificing pay load.

Table III.—United Kingdom Civil Air Traffic: Scheduled Services*

Item	All services		Internal		International	
	1950-51	1951-52	1950-51	1951-52	1950-51	1951-52
Miles flown (000).	48,893	52,995	6,945	6,217	41,948	46,778
Passengers carried (000).	1,198	1,436	488	533	710	904
Passenger-miles (000)	836,136	1,094,223	80,162	89,674	755,974	1,004,548
Freight (000 short tons)	23,195	39,396	2,598	2,859	20,597	36,538
Freight (000 short ton-miles)	26,636	31,181	478	530	26,158	30,652
Mail (short tons)	7,531	9,396	1,652	2,576	5,879	6,821
Mail (000 short ton-miles)	14,147	18,084	271	426	13,876	17,658

*B.O.A.C., B.E.A. and associated companies.

For tourist traffic, the value of capacious aircraft on the busy routes had already been proved. Eleven operators ran tourist services at reduced fares on North Atlantic routes during 1952 and from May to September offered among them up to 3,460 seats each week at fares roughly 30% below the standard fares. When the season opened the total number of seats available each week was only 2,452, of which Pan American Air Lines provided 738 and Trans World Airlines 420; Trans-Canada Air Lines came next with 280, having turned over the whole of its capacity on the Atlantic route to tourist traffic; at the same time B.O.A.C. offered 136 seats but at the season's peak it had 544 weekly. The cheaper fares were made possible by fitting more seats in the aircraft and by cutting down the lavish hospitality en route. Heavy traffic justified the experiment but, except at the height of the season, operators had to accept a large flow of one-way traffic. At the end of the year financial analyses of the first year's tourist business were still awaited but the trend toward the liner with many seats had been established. This development turned attention toward the new Britannia turboprop liner which made its first flight on Aug. 16 and had been ordered for B.O.A.C. Its seating could be arranged to carry 98 passengers and it was expected to have long range. The still bigger turboprop liner, the Princess flying boat, which made its first flight a week later, still appeared to be of no interest to air-line operators although it could be fitted to

Table IV.—Revenue Statistics for British Air Lines

Item	(Financial years, April 1—March 31)			
	B.O.A.C.*		B.E.A.	
	1951-52	1950-51	1951-52	1950-51
Operating revenue	£33,567,862	£24,252,115	£10,817,687	£8,998,821
Operating expense	32,164,801	27,564,071	12,060,005	9,796,079
Operating profit + or loss —	+1,403,061	—3,311,956	—1,242,318	—797,258
Nonoperating expense . . .	1,128,062	1,253,472	181,293	182,009
Profit + or loss — for year†	+274,999	—4,565,428	—1,423,611	—979,267

*Figures exclude profit or loss on disposal of assets and redemption of stock.
†After payment of interest on capital.

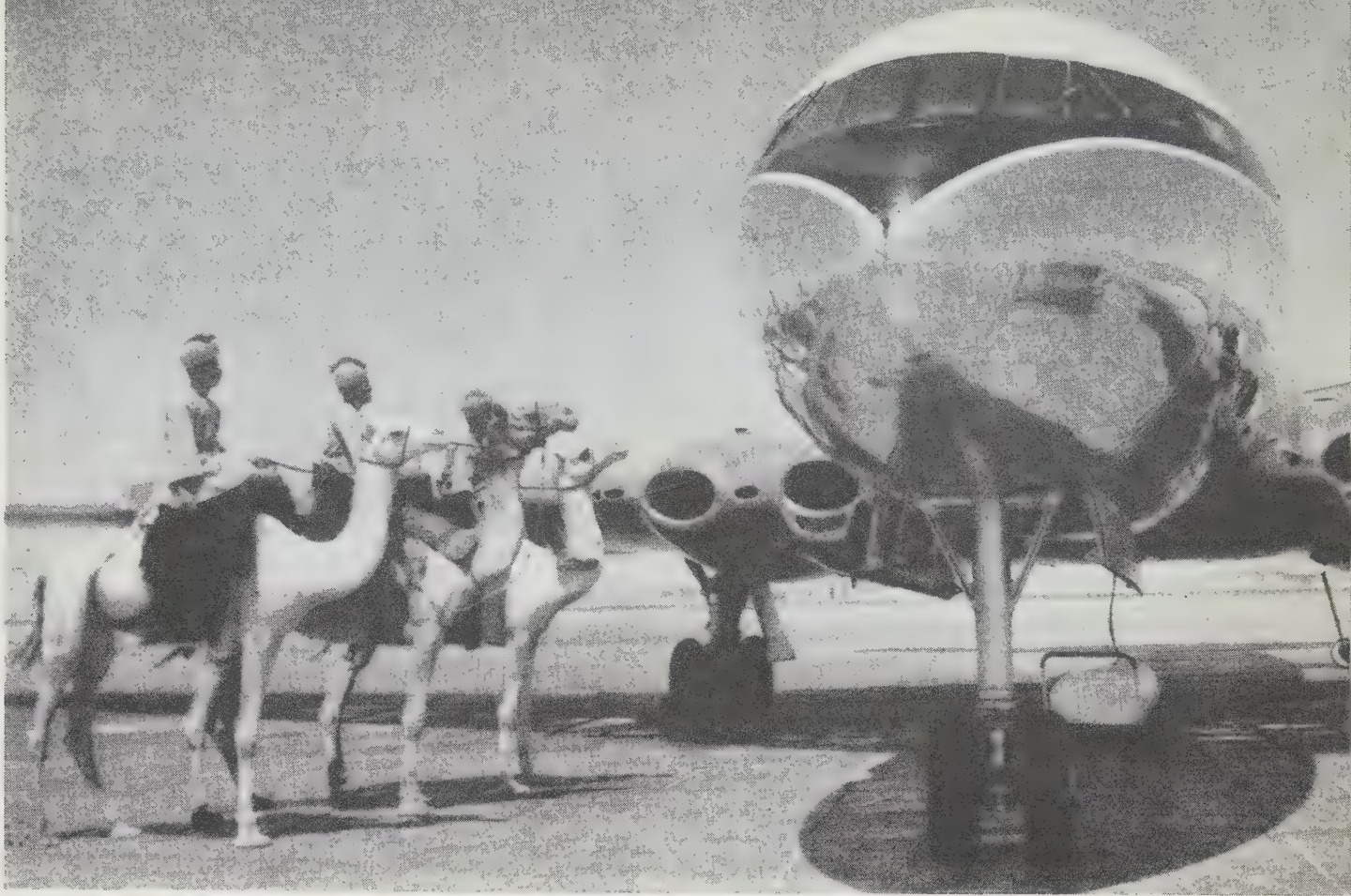
carry 200 passengers.

The principal business feature of the year therefore was an intensification of traffic on existing routes rather than the exploitation of new routes; and a general marked increase in loads and revenue was reported. Only one new route of any importance was opened. This joined Australia and South Africa by way of the South Indian ocean. On Sept. 1 the fortnightly service between Sydney and Johannesburg began with calls at Perth (western Australia), the Cocos Islands and Mauritius. It introduced the longest oversea stage at present being operated—that of 2,763 mi. between Cocos and Mauritius. This service was linked with the regular route through Asia by means of a spur running from Cocos to Jakarta (formerly Batavia) and Singapore, and there were hopes, as eastern Asia became more settled, of tapping traffic between Asia and South Africa. The new service was operated with Constellation aircraft and the spur with DC-4s. Its opening depended on the construction of a landing strip 10,000 ft. long and 1,000 ft. wide on one of the bigger islands of the Cocos group (West Island) and on the installation there of a radio beacon and passenger accommodation and facilities. The preparation of the airport was undertaken by the Australian government and that of facilities by Qantas Empire Airways, which operated the service. During the year, the restoration to Japan and Germany of rights to resume international services was announced. Steps were taken by both countries to procure commercial aircraft and to secure help in training crews.

The restriction of supplies of aviation fuel because of strikes in mid-1952 at U.S. oil refineries led to a slight diminution of services, chiefly freight services. There were also some dislocations in services normally passing through Cairo, first when mob violence occurred in Cairo and Alexandria and later when the abdication of King Farouk made conditions temporarily unsettled. During both periods (in the second, up to October) aircraft on services to and from the far east and Australia made an alternative call at Beirut in Syria, and those on African routes called at Tripoli (Libya). There had been some loss of traffic in the interval, particularly mail traffic from British troops serving in the Suez Canal Zone.

British European Airways, heavily affected by the halving of the foreign currency allowed to British citizens for holiday purposes, was able to report a record profit of £109,300 for the month of July. This operator had had the heaviest loss—£1,423,000—in the preceding financial year and expected in the current financial year to show a loss, but it was beginning to find the benefit of its new aircraft. For the first time since the end of the war, B.O.A.C. returned a small profit—£274,999—in its 1951-52 financial year. Two companies showed signs of prosperity. Sabena's profit was £1,378,309, and that of K.L.M. was about £1,000,000. Air France made a modest profit of £52,000. Trans-Canada Air Lines showed its first profit since the war—£1,390,000. These results occurred in a year in which the total number of passengers on all air lines rose by one-third, to 39,000,000. The percentage increase in passengers was not regular over all lines. B.O.A.C. and B.E.A., for instance, reported an increase of 25% and Air France an increase of 20%. Sabena's increase was 33% and that of K.L.M. was 24%.

British helicopter services for passengers ceased during the year but a Belgian postal service working a circuit of 230 mi.



BRITISH DE HAVILLAND COMET at Khartoum, A.-E. Sud., where it was met by camel-mounted Sudanese police. In 1952 England became the first nation to begin regular jet air-liner service

from Brussels through six towns to Antwerp was operated with regularity and success. B.E.A. had on order at the end of the year a small number of two-engine twin-rotor helicopters capable of carrying 12 to 14 passengers, and had put out a specification for a 40- to 50-seat helicopter.

Air carriers' liability for third-party damage was redefined at a conference held in Rome during September by the International Civil Aviation organization. Under this plan maximum liability, except in cases of wilful damage, was related to the loaded weight of the aircraft involved and provision was made both for claims to be heard in the courts of the country in which an accident occurred and for awards to be enforced if necessary in other countries. The highest liability in respect of loss of life or injury was set at £13,150 per person. Acceptances of the new convention by member countries were being received during the later months of the year. (E. C. SD.)

Aviation, Military. **United States Air Force.**—The outbreak of the Korean war in June 1950 found the United States with a 48-wing air force. As the air force climbed from 48 to 68 to 84, and then to 95 authorized wings, the increases in strength of the other services and in their money authorizations moved up correspondingly. In Oct. 1951 the joint chiefs of staff approved the 143-wing air force program. Their decision, put into effect in July 1952 with the congressional appropriations acts for the fiscal year 1953, gave a 50% increase to the air force (126 combat wings plus 17 troop carrier wings) with no such corresponding increase for the other services. Thus, the idea of a balanced force as a roughly equal three-way division of funds among the services was modified. This change in the concept of balanced forces was influenced

by recognition of the revolution taking place in weapons and centred on atomic power.

Although the build-up toward the 143-wing air force goal called for increases in personnel, equipment and installations, the larger air force called for only 14% more military personnel than the 95-wing air force which was achieved during 1952.

The air conduct of the Korean war in 1952 was little changed from the previous year, although there were new bombing attacks against power plants near the Yalu river and rebuilt factories and supply dumps, beginning in June and continuing through the year. The U.S.A.F. carried on its strangling attacks against North Korean and Chinese Communist communications and supplies (begun in Aug. 1951) and maintained air superiority over the battle lines as well as over North Korea. This was done in the face of a steady increase in enemy ground defenses and a greatly enlarged enemy air force. U.S.A.F. Sabre jets continued to knock down MIG-15s at a better than 7 to 1 ratio, and by Sept. 30, 1952, 20 U.S.A.F. pilots had become jet aces as a result of air victories over soviet-built MIG-15 interceptors.

To increase the striking power of the United States far east air forces, two wings of the strategic air command's F-84 jet fighter aircraft were flown across the Pacific by refuelling in flight.

Additional assignments of units and aircraft were made to the far east air forces and to the NATO (North Atlantic Treaty organization) forces in Europe. With United States assistance, the number of useful modern combat aircraft at NATO's disposal, including F-84 jets, was increased considerably after July 1951. More modern operational bases became available, and by 1952 U.S. F-86 Sabres were stationed in the United Kingdom.

Three U.S.A.F. bases in French Morocco were expected to be operational by the end of the year. The air base at Thule, Greenland, begun in March 1951, was operational and opened for

inspection to United States and Danish newsmen in Sept. 1952. This northernmost air base in the world, carved out of the frozen arctic, afforded a new and shorter route between the great capitals of the world and was of the greatest importance to future aviation, both military and civil.

The air defense system of the United States was bolstered by the inauguration of 24-hour sky watch duty by civilian volunteers of the ground observer corps, beginning July 14. The reporting and tracking of low-flying aircraft by trained individuals supplemented the electronic pickup on the air defense command's radar net, but could be completely effective only when all projected posts and filter centres along both coasts and the Canadian border were fully manned. At the end of the year, thousands of additional volunteers were needed to strengthen the system.

The increase in air force units and activity called for an increase in production of aircraft. Total aircraft deliveries for the air force in July 1952 were more than five times that of June 1950, at the outbreak of the Korean war, and by the end of 1952, production was expected to be nearly seven times the production of July 1950.

Several new planes were unveiled during the year. The Boeing YB-52, an eight-engine jet swept-wing Stratofortress designed to gradually replace the intercontinental B-36, made its first flight on April 15. The swept-wing Convair YB-60, an eight-engine swept-wing jet version of the B-36, made its first flight April 18. The air force ordered production of an undisclosed number of delta-wing F-102 Convair jet interceptors, the first operational aircraft designed to fly at supersonic speeds. The F-102 was developed from the experimental Convair XF-92, the first delta-wing aircraft known to have flown successfully. Also in production in substantial quantities was the air force's only tanker aeroplane, the Boeing KC-97, a military version of the Stratocruiser.

It was announced in July that no additional B-36 heavy bombers would be ordered, although the B-36 would remain the backbone of the country's strategic air potential for some time to come. Serious damage to the B-36 inventory of the U.S.A.F. occurred when a tornado struck Carswell air force base, Tex., on Sept. 1. Of the B-36s then there, 1 was demolished and 71 others were damaged in varying degrees. Preliminary estimates indicated that the cost of repairs, including the reconstruction of damaged base facilities, would be about \$48,000,000. In addition, 35 other B-36s at the near-by Consolidated Aircraft plant suffered damage. Prompt institution of a large-scale emergency repair program reconstituted the combat effectiveness of both wings around Oct. 1.

For the sixth successive year the air force investigated reports of "flying saucers," but found no evidence that the frequency of the "sightings" revealed a planned threat to the security of the United States.

On March 25 two Republic F-84G Thunderjet fighter bombers dropped practice bombs on a target at a halfway point of a 4,775-mi. nonstop flight in which they were refuelled six times by Boeing KB-29 tankers. The flight from Langley air force base, Va., to Edwards air force base, Calif., and return, was accomplished in approximately 11 hr. 20 min.

In April the air force admitted that an F-84 jet fighter aircraft had been successfully launched from a B-36 bomber in flight.

As of July 1, 1952, the air force began using the nautical system of knots and nautical miles (instead of "miles per hour" and "statute miles") as the official unit of measurement. The change was made to facilitate navigational measurements and standardize interservice usage.

Aviation history was made on July 31, with the arrival of

two United States military helicopters at Prestwick, Scot., at the end of the first crossing of the Atlantic by rotary-wing aircraft. The flight of 3,410 mi. in five legs was completed in a flying time of only 42½ hours at an average speed of 80 m.p.h. Actually, 17 days were involved in the flight in two Sikorsky H-19 helicopters by four air force veterans of air rescue operations in Korea, which left Westover air force base, Mass., on July 15. The helicopters were later flown on to Wiesbaden, Ger., for use in air rescue work there.

For five days in August, 14 U.S.A.F. C-54s, on a round-the-clock schedule, carried 3,763 Moslems without charge 800 mi. from Beirut, in Lebanon, to Jidda, Saudi Arabia, 40 mi. from the holy city of Mecca. The United States acted on a plea from the Lebanese government when regular air lines and other transportation could not cope with the thousands of pilgrims converging at Beirut from all parts of Islam in their effort to reach Mecca in time for the festival of Id al-adha on Aug. 28. Among the pilgrims flown on this good-will mission were outstanding leaders of the Moslem world.

As of April 1, the air force special weapons command, with headquarters at Kirtland air force base, N.M., became a part of the air research and development command, with headquarters at Baltimore, Md., to operate as the air force special weapons centre.

A new air group, the crew training air force, was established in March at Randolph air force base, Tex., under the air training command, to give advanced training in combat flying. This included training 3-man crews for the Boeing B-47 Stratojet, 11-man crews for B-29 Superforts, and training in combat tactics for fighter-bomber pilots and fighter-interceptor teams.

To enhance the prestige of noncommissioned officers and to stimulate leadership, the air force, effective April 1, restricted noncommissioned officer status to the top three airmen grades of master, technical and staff sergeant. The grades of sergeant and below were redesignated airman, 1st, 2nd, and 3rd class, with private redesignated basic airman. Pay and duties of the airmen were not affected by the change.

In Korea, aircraft under the operational control of the far east air force flew a total of 514,135 sorties through Oct. 10, 1952. During the same time, 642 aircraft of all types were lost to enemy fire. Casualty statistics as of Oct. 10 indicated a total of 469 deaths and 786 missing in action during the 28 months of the Korean war.

(H. S. Vg.)

United States Navy.—Navy and marine corps squadrons, operating over Korea from carriers and land bases during 1952, added to the record they had compiled during the first year and a half of war. Month after month they contributed at least 35% of the combat sorties flown by United States forces in the Korean theatre. While truce talks continued and ground action was localized, virtually the entire effort of naval aviation squadrons was devoted to interdiction. Patrol squadrons continued their daily flights over Korean waters and to the south maintained their vigil over Formosa strait.

Control of the seas around Korea was held by the United Nations. Although naval forces were not called upon to fight off similar enemy forces, their presence assured the United Nations command a free use of the sea and the offensive employment of the carrier striking force prevented enemy use of airfields in northeast Korea to contest that freedom.

Because of the narrow target area of the Korean peninsula, the carrier's prime assets of speed and mobility could not be fully utilized. However, the carrier's advantage of consistently operating from positions far to the north of the land-battle area made possible a concentrated aerial bombardment all the way from the Communist front lines to the boundaries of Manchuria and Siberia. The fast carrier aircraft concentrated



Above: CONVAIR XP5Y-1, U.S. navy patrol flying boat and the first turboprop sea-plane built. It had a top speed of more than 350 m.p.h. and a take-off time of less than 30 sec.

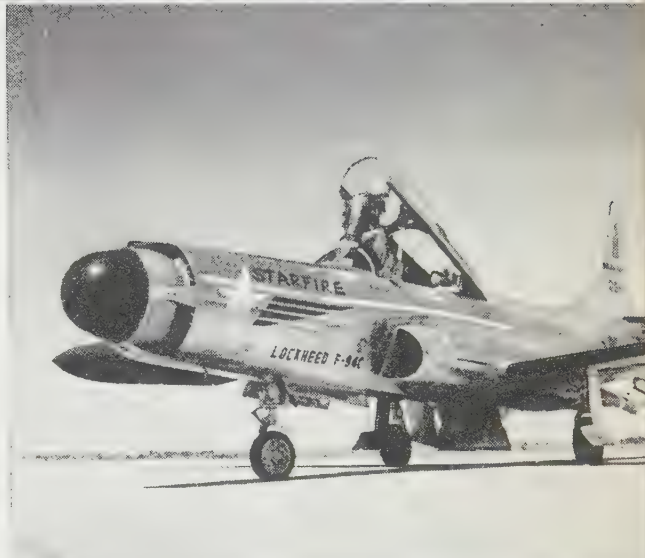
Right: LOCKHEED F-94C STARFIRE, U.S. interceptor plane with all-rocket armament

Below, left: REPUBLIC F-84F THUNDERJET, U.S. swept-wing fighter-bomber, shown with the external stores it can carry in various combinations, including fuel tanks, rockets and bombs

Below, right: SUD-OUEST 6025 ESPADON, French single-seat jet fighter

Lower left: AVRO 698, British four-jet delta-wing heavy bomber, capable of near sonic speed and of carrying very heavy bomb loads on long-range flights. It was flown for the first time in 1952

Lower right: H05S-1 helicopter, the U.S. marines' designation of the Sikorsky S-52-2, a utility plane used for short-range flights in rescue and military service



in the main upon the northeast section where they could carry out a sustained schedule of air operations against railroads and highways linking Communist armies with Manchuria and Siberia. This was their main area of attack through the first half of 1952 as it had been since Jan. 1951.

The advantage of their behind-the-lines position was also utilized in the midyear shift of the U.N. air offensive and was in a large measure responsible for its strength and effectiveness. Attacks on the hydroelectric power plants along the Yalu river and the mountain streams of North Korea in June 1952 marked the shift. These targets were in northwest Korea and a majority of the attacking aircraft were navy and marine. Carrier aircraft flew entirely across the peninsula, as they had on the bridge strikes of Nov. 1950, to hit the major plant at Suiho, 40 mi. from the mouth of the Yalu and far into the home grounds of the Communist air force. Follow-up strikes on these and other targets found carrier aircraft attacking in co-ordination with land-based aircraft in all parts of North Korea except in the northeast, as at Chongjin and the near border towns of Aoji and Musan, where they carried out the attack alone.

Increased offensive power had resulted from the new capability for delivering special weapons from fleet aircraft carriers. Jet type aircraft had been further integrated into routine fleet operations and models of higher performance were in production and under test. Continued study of antisubmarine warfare toward the improvement of instruments and techniques had increased the navy's potential for the protection of shipping in time of war. Tactical doctrine for special uses of aircraft, airships and helicopters in this important function and in the offensive and defensive aspects of mine warfare had been incorporated in fleet air training.

The construction of facilities for the production of guided missiles marked the approach of their assignment to fleet task forces. Two heavy cruisers and one submarine, which in 1952 were being converted to guided-missile use, would add power to the fleet. Units were training in the operational techniques of missile launching to ensure their effective use.

In July, the keel of the "U.S.S. Forrestal" was laid at Newport News, Va. In the same month the congress authorized the construction of a second carrier of this class. These carriers were designed to meet the operating requirements of faster and heavier aircraft. (See also KOREAN WAR; NAVIES OF THE WORLD.)

(M. B. G.)

U.S.S.R.—The biggest question in any evaluation of world air power in 1952, as it had been during the previous five years, was the standing of the air forces of the Soviet Union. The biggest gamble faced by military air planners of the western nations was the determination of what kind of aircraft they must build, and how many, to balance the threat of the growing soviet air power.

The President's Air Policy commission of 1947 (the Finletter board), basing its judgment upon intelligence then available, came up with the conclusion that some time in 1952 the soviet air force would be capable of making an air attack in force against U.S. industrial centres with atomic bombs. Whether or not such a level of competence had been reached by 1952 was a matter for speculation. A great deal had been written about the organization and equipment of soviet air forces but, in spite of more than two years of contact with the soviet-equipped Chinese forces in Korea, very few facts concerning the quality or quantity of soviet aircraft existed outside of official circles. In the 1952 edition of his book *The Soviet Air Force*, the British author, Asher Lee, admitted "there are no experts on Russia—there are only varying degrees of ignorance."

Guesses as to the total air strength of the U.S.S.R. ranged

from 8,000 to 20,000 first-line combat aircraft, with the probability of equal numbers in reserve. The true number was unknown, but no one could doubt that a formidable air strength existed. It was known that high-grade aeronautical research had been going forward since the end of World War II, bolstered by captured German technicians. It was known also that large and active production facilities were in being and that they had been turning out aircraft continuously since the end of that war. A long-standing program of training young pilots had undoubtedly made available to the soviet air staff a large supply of tough-minded and well-trained airmen. There was every reason to believe that many of the MIG-15 fighters that had been encountered on the Korean front were flown by soviet pilots. These were therefore accumulating actual combat experience, and the lessons of actual air warfare were being transmitted daily to air force headquarters. Gen. Hoyt S. Vandenberg, chief of the air staff of the U.S. air force, summarized soviet air power as a "highly-organized and versatile complex of air forces, armed with first-class equipment, well informed as to the latest techniques, and supported by a massive industrial and research structure over which it exercises the highest priorities."

Apart from air-to-air contacts on the Korean front, the principal source of information with respect to new soviet types during the year was the annual demonstration on Red Air Force day at the Tushino air field in Moscow. These displays were not run off with the openhandedness of the British at their annual Farnborough display, but they afforded occasional glimpses of new types of aircraft that yielded hints as to the direction of soviet design-thinking. The rather meagre information on 1952 soviet aircraft which follows is based upon these sources as reported in the aviation technical press.

The well-known MIG-15 still appeared to form the backbone of soviet fighter squadrons, but several improved models were reported. A twin-engined single-seated version was observed in considerable numbers in east Germany. This machine appeared to have two axial-flow engines in the wing roots and was apparently somewhat heavier and more powerfully armed than the original model. It was said to mount four 23-mm. or four 30-mm. cannon. The other variation was apparently a night fighter with a single engine (and possibly an afterburner). It was a two-place type, probably pilot and radar operator. The nose had been modified to permit installation of radar gear above the engine air intake.

Another fighter development reported early in 1952 was the MIG-19. This was said to be a short-bodied swept-wing fighter with tail surfaces carried high above the fuselage. It was said to bear a very close resemblance to the German Focke-Wulf-103, designed at the end of World War II by Kurt Tank.

In the light bomber or attack field the Ilyushin IL-26 with twin jet engines mounted in wing nacelles appeared to be in widespread service use but a slightly smaller version of the same type was also reported. The probabilities were that it was fitted with newer higher thrust engines which would give it somewhat increased performance over the IL-26.

A wholly new type of light bomber which would eventually replace the IL-26 series was reported. This was identified as the EF-150. It was said to be the work of a group of German design engineers. It was described as a swept-wing monoplane with a span of more than 100 ft., powered by two axial-flow jet engines of more than 10,000-lb. thrust each, suspended in nacelles under the wings. It was said to have a top speed in excess of 600 m.p.h. and to be able to operate at high altitudes. It was handled by a crew of three.

The other important development appeared to be in the big bomber field. Until recently, the only reported long-range

bombers of importance were the TU-4, a soviet-built adaptation of the U.S. B-29 class bomber. It now seemed probable that a new machine—the TUG-75 long-range intercontinental bomber—was under active development. Whether or not any of these machines had been built and flown was not known but the general specifications had been reported. The design was apparently based on the use of six turbine-driven propeller engines, probably a development of the German BMW-028 engines. The fuselage was said to be long and slim, and the wings of high aspect ratio with a moderate degree of sweepback. Its range and other performance capabilities would probably be similar to those of the U.S.A.F. B-36 bomber.

It was also well known that the soviets were not depending entirely on long-range bombers of the TUG-75 class to deliver intercontinental air attacks. They had available to them many of the former German V-2 experts and they were unquestionably developing long-range guided missiles of greater capability than the German V-2. There were many indications that experimentation with guided missiles was going forward at a high rate in the U.S.S.R. As with all such projects in every country, an almost impenetrable veil of secrecy was drawn about them so that details were of a much more highly speculative nature than for conventional aircraft development. In the guided missile field, soviet scientists must be credited with a “know-how” equal to that found in any other country.

Power Plant Developments.—Little was known of the details of soviet aircraft engine development but, judging from the reported performance of their aircraft and the examination of the few actual pieces of equipment that had come into U.N. possession in Korea, their engine designers were keeping up with design progress elsewhere. Not only were German jet engine technicians made available to the soviets at the end of World War II, but a number of British-built jet power plants were

delivered to soviet satellites in 1947 and 1948. There was no question but that they had been able to develop better engines than the ones they received from Great Britain at that time. They undoubtedly increased the thrust capability of these engines and, at the same time, developed engines of considerably greater thrust, probably approaching the 10,000- to 11,000-lb. class. The projected use of turboprop engines for the TUG-75 bomber has been mentioned, but how soon such engines might be available in quantity was entirely unknown.

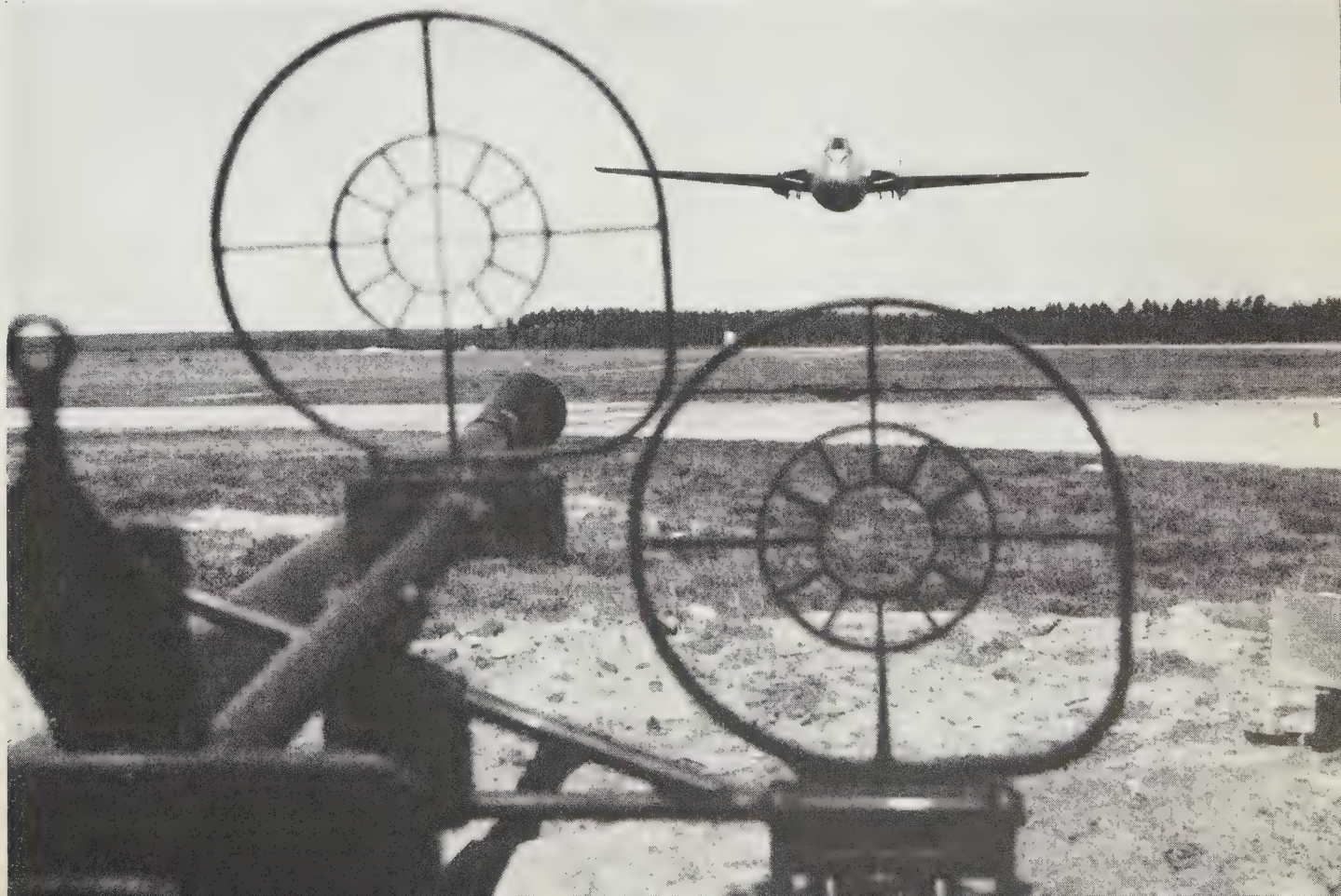
In the rocket engine field for use in guided missiles, again details were lacking, but the soviets had plenty of German experience to draw upon and there was no doubt that considerable progress was also being made in such fields.

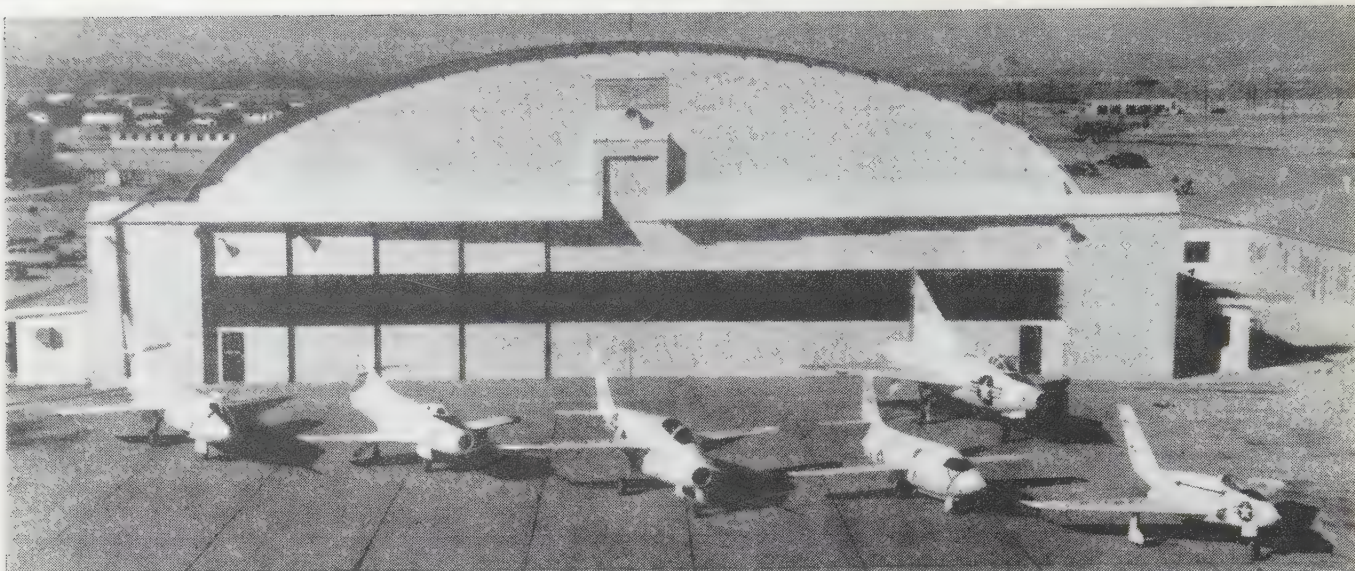
Great Britain and the Commonwealth.—In contrast with the “close to the chest” attitude of the soviets with respect to their new aircraft, the British display their latest research and service types early in September of each year at the Farnborough show sponsored by the Society of British Aircraft Constructors. On this occasion, observers from all over the world are given opportunity to inspect machines on the ground and observe their performance in flight, and the event is always given full coverage in the aeronautical press.

The most striking thing about the 1952 display was the obvious trend toward the delta (or arrowhead) wing. Machines of this type had appeared in experimental form a year earlier, but had now been translated into service types. One notable example was the two-seat Gloster Javelin, which was the first British operational aircraft with delta wings. It was reported to be able to fly at speeds higher than the speed of sound. It was powered with two Armstrong Siddeley Sapphire engines, each with a static thrust of more than 8,000 lb. It was being put into production for probable service use late in 1953.

The largest delta-wing aircraft jet to be flown was the four-jet Avro 698 bomber. This was a very large aeroplane capable of carrying big bomb loads over long ranges. Although recently

JET R.A.F. VAMPIRE “attacking” its German base at 550 m.p.h. during 1952 air manoeuvres less than 15 mi. from the soviet zone frontier





FLEET OF PLANES used by test pilots and scientists conducting basic research in the trans-sonic and supersonic speed ranges in 1952 at the High-Speed Flight Research station, Edwards air force base, Calif.

completed and with but a few flight-test hours behind it, it put on a notable flying exhibition at Farnborough. In addition to the two service-type delta-wing aircraft, a number of research machines were on display, enough to indicate a very marked trend in that direction in British design thinking.

A new all-weather day-and-night fighter, the de Havilland DH-110, exhibited high-speed, high-maneuvrability characteristics but suffered an unfortunate accident on Sept. 6 when it disintegrated in flight and killed its crew and a number of spectators on the ground.

Two other new swept-wing single-seat fighters were shown, the Hawker Hunter and the Vickers-Supermarine Swift. Both these machines were on Great Britain's so-called superpriority production list.

In the light bomber field the production model of the English Electric Canberra B-2 was on display. This twin-jet high-speed bomber later in the year made a round trip across the Atlantic in a single day. It had been selected by the U.S.A.F. for production in the United States.

In the big bomber field, in addition to the Avro 698, the Vickers Valiant in recently modified form was displayed. This machine was one of the most beautiful and most efficient aerodynamically to have been built anywhere. It was notable for the fact that its four jet engines were almost completely buried within its wings with practically no external projections.

For the royal navy, the Fairey Gannet in its production form put in an appearance. This aeroplane was powered with double turbine-driven propellers. It was intended for antisubmarine warfare.

The 140-ton Saunders-Roe Princess flying boat, designed originally for the overseas operations of B.O.A.C. and later turned over to the royal air force for a troop transport, made flight demonstrations during the Farnborough show. It was one of the world's largest flying boats, with a total weight in excess of 300,000 lb. It was powered with ten Bristol Proteus turbine-driven propeller engines.

Power Plant Developments.—Great Britain continued its all-out development of jet and turbine propeller engines. Improvement in power output and reduction in fuel consumption had been continuous, but no outstanding new types appeared during 1952. The power range ran from small turbine units of 1,500-lb. thrust up to large jet engines delivering 10,000 lb. or more.

Outstanding engines in the pure jet class were the Armstrong Siddeley Sapphire of more than 8,000-lb. thrust; the Bristol Olympus with a static thrust of 9,700 lb. and the Rolls-Royce Avon at 6,500 lb. All these engines were listed for high production priority to meet the production requirements of the royal air force.

In the propeller turbine field, the important production engines were the Armstrong Siddeley Python and the Mamba by the same company. The former delivered 3,670 brake hp. and 1,180 lb. of thrust, and the latter 1,320 brake hp. and 400 lb. of thrust. The Bristol Proteus was rated at 3,300 brake hp. and 1,200 lb. of thrust. Rolls-Royce, in addition to its straight jet types, had a small propeller-turbine type, the Dart, which in its latest form was good for 1,400 brake hp. and 365 lb. of thrust.

In addition to these conventional engines, Great Britain was also working on rocket types of power plant, both for land aircraft and for guided missiles, but in this field detail developments were hidden behind security restrictions.

Canadian Developments.—A number of British manufacturers had established branches in Canada for the production of parts or of completed aircraft. From the military point of view, greatest interest centred around the operations of Canadair Ltd. in Montreal, Que., and Avro and de Havilland in Toronto, Ont.

During 1952, Canadair Ltd. was producing North American-designed Sabre jets for the Royal Canadian air force. These machines were fitted with United States-built jet engines, but it was planned to install the Canadian-built Orenda engine when it was in production. Avro at Toronto was producing the only Canadian-designed and built military aircraft in the country. The CF-100 was an all-weather two-seat fighter, designed for installation of two Avro Orenda engines. The prototype was flown in 1950 but production models were expected to be coming off the line and being delivered to service squadrons late in 1952. A new plant for the production of the Orenda engine was completed and put into operation in the fall of 1952.

De Havilland's of Canada was producing only trainer and light transport types. During 1952 the first of the production DHC-2 Beaver aircraft were delivered to the U.S. air force.

Other Countries.—The main focal points for air power development continued to be the United States, Great Britain and the U.S.S.R. Outside of those areas little that was new appeared in 1952.

Two events took place, however, that were significant—the first full-scale air exercises under NATO (the North Atlantic Treaty organization) in September, and the inauguration of the so-called offshore aircraft procurement program under the U.S. Mutual Security agency.

NATO air strength was first demonstrated during the year at an international military air display in Brussels, Belg., in mid-July. On that occasion, military aircraft of the 14 NATO nations assembled for an aerial review. More significant, however, were the manoeuvres held in mid-September when more than 1,500 planes of the NATO nations took part in Operation "Blue Alliance." Previous NATO air exercises had been designed to check progress in particular areas, but "Blue Alliance" was intended to test the over-all progress and to determine the state of readiness of the NATO air forces. Planned NATO air strength was of the order of 4,000 planes by the end of 1952. That number was to be increased in the next two years, but no announcements had been made regarding top levels. The backbone of the NATO air force was in British and U.S. squadrons. It was known that the U.S. air force had ten wings in Europe, including fighters and strategic bombers.

The so-called offshore procurement program under the Mutual Security agency contemplated the purchasing of combat aircraft for NATO from European manufacturers using U.S. money. Such a plan was hoped to build up NATO air strength more quickly and to bolster up some of the lagging European aircraft industries. It was thought also that more aircraft could be obtained for the same money. During fiscal 1953, the U.S. was to contribute \$225,000,000 to the program, which was to be matched by \$175,000,000 from other NATO countries.

The program contemplated manufacture of aircraft by five outstanding European manufacturers. The Dutch Fokker Aircraft company would finish an order of British Gloster Meteors and would switch over to production of Vickers Armstrongs Swift, a swept-wing single-jet interceptor fighter. Rolls-Royce Avon engines for these machines would be provided by the Belgian Fabrique Nationale D'Armes. The French company Avions Marcel Dassault would build the MD-452 Mystere, a swept-wing interceptor fighter. This machine was to be powered by jet engines, the Atar 101D to be built by Société Nationale d'Etude et de Construction de Moteurs d'Aviation, also of France. The Fiat company of Italy would build both air frame and engine for the de Havilland Venom night fighter.

The 1953 program had not yet been completed by Oct. 1952, but contract negotiations were under way and it was contemplated that three-year production schedules would be laid down. These aircraft, together with machines that were already being supplied to NATO by U.S. manufacturers and by Canada, would greatly strengthen the western air forces in Europe. (See also AIRCRAFT MANUFACTURE; ARMIES OF THE WORLD; ATOMIC ENERGY; AVIATION, CIVIL; CIVIL AERONAUTICS ADMINISTRATION; JET PROPULSION; KOREAN WAR; MUNITIONS OF WAR.)

(S. P. J.)

Avocados: see FRUIT.

Azores: see PORTUGAL.

Bacteriology. Fertilizer from Garbage.—Since every bacterial cell is a microscopic chemical factory, the many possible applications of that fact stagger the imagination. One such application which had recently emerged was the compounding of a mixture of bacterial cultures which could transform the waste of a city or the stubble from farm crops into rich humus of miraculous growth-stimulating powers.

Garbage from which paper, wood, glass and metal had been removed was ground into small bits, sprayed with water containing a tablespoonful of bacteria per ton of garbage and com-

posted for three weeks. During that time the bacteria multiplied tremendously and digested the mass of garbage. At times steam rose from the heaps as the intense chemical activity elevated the temperature of the mass to 150° F. After one week the heap lost its resemblance to garbage and in three weeks a humus resulted so rich that vegetables grown in it were 25% larger and contained up to three times as much vitamin A as those grown in conventional fertilizers. The nitrogen content of this bacterially made soil was four times that of other soils, and grain produced from it was of a consistently higher protein content.

More than 50 strains of bacteria, of unrevealed identities except that many were said to have been isolated from the intestinal tracts of man and domestic animals, were blended together to fit the requirements of the type of garbage and the season. Since the bacterial starter can compost almost any organic substances, blends for such waste products as crop stubble, sugar cane fibre, water hyacinths, cotton waste and nutshells were produced. Experimental plants were planned for Cuba, Mexico, Australia and New Zealand. The conversion of "night soil," human excreta used widely as fertilizer in the orient, and which spreads the dread cholera and typhoid, into safe and rich fertilizer was also demonstrated.

It was estimated that in the United States alone, if all garbage were so composted, 30,000,000 tons of fertilizer per year would result, capable of fertilizing 10,000,000 ac. of land—and there would be no garbage disposal problem. The possible ultimate impact of microbial humus on a hungry world was vastly more important, however. Current rates of increase indicated that the world population would double in 70 years. Unless food production were increased at a comparable rate, there would arise a problem of how to feed those future millions.

The possibility of increasing both yields from and acreage of arable lands by the conversion of man's waste products to life-giving fertile soil by means of bacterial action suggested itself as a significant contribution to the solution of such a problem.

Therapy of Fungal Diseases.—A promising new weapon against the intractable fungal diseases appeared during 1952. Stilbamidine (4,4'-stilbenedicarboximidine) was used in the treatment of blastomycosis and actinomycosis and produced prompt therapeutic responses. It also proved efficacious against blastomycosis when propamidine (4,4'-diamidinodiphenoxypropane dihydrochloride) was administered locally. It was suggested that diamidines be given a further trial in treatment of severe yeastlike infections.

The failure of medically proven antibiotics to inhibit or kill pathogenic yeasts and fungi had been further complicated by the fact that their use against bacteria had often removed from the environment bacteria which were the normal antagonists and controlling factors for the fungus population. After antibiotic therapy many dangerous and even fatal cases of fungus infections had resulted. To reduce the prevalence of moniliasis infections after aureomycin therapy, methylparaben and propylparaben were incorporated into the drug.

Sexual Recombination of Bacteria.—Events of 1952 firmly established as fact the occurrence of biparental inheritance among bacteria, for which the normal mode of reproduction is binary fission. *Escherichia coli*, common intestinal bacterium of man, had demonstrated its ability to form prototrophs (an individual having characteristics of each of dissimilar parents) when two cultures of varying characteristics were mixed and plated out. For example, if a parent strain of *E. coli* which cannot synthesize proline but can synthesize methionine is mixed with a strain for which the reverse is true, plating the

mixture on a basal medium having all other growth factors but lacking in both proline and methionine will result in the growth of only such bacteria that are able to synthesize both required substances. Analysis of these occurrences revealed that few organisms mate since the number of prototrophs is always small. The longer the mixture is kept, the greater the chance of mating. By computation it was shown that bacterial collisions in the mixture occur 10,000 times as frequently as do matings. The possibility of agglutination in the liquid medium followed by cellular exchange after plating on basal media was not as yet ruled out.

Sexual recombination using drug-fastness to streptomycin as a criterion for prototrophs indicated *E. coli* to be capable of producing true genetic variants analogous to mutants of high resistance.

Prototroph recombination accomplished by intraperitoneal passage in guinea pigs of parent strains of *E. coli* showed a higher frequency of recombination, but subsequent increases of population density and temperature of test-tube experiments indicated that those were the only factors involved in the higher rate.

By comparison with sexual recombination, genetic transduction of hereditary traits by a filterable agent was also reported. When *Salmonella typhimurium* was grown in the presence of a weak bacteriophage, a filterable agent capable of transferring hereditary traits was produced. Individual filtrates may transduce nutritional, fermentative, drug-resistant and antigenic characteristics, but no more than one to a single bacterium. The agent is resistant to such bacterial disinfectants as chloroform, toluene and alcohol, and to the enzymes pancreatin, trypsin, ribonuclease and desoxyribonuclease. Some intertype transfers were observed such as the *i* flagellar antigen of *S. typhimurium* to *S. typhi* to produce a new serotype. These discoveries afforded new tools for both the bacteriologist and the geneticist which it was believed might soon yield greater understanding of inheritable traits at the most primitive level of the living cell.

Antibiotic Antagonism and Synergism.—The frequency with which unpredicted results occurred when two or more antibiotics were used in combination clinically induced test tube and animal studies of the phenomena. During 1952 some semblance of order began to emerge from the hitherto random pattern. It became evident that the wide spectrum antibiotics, aureomycin, terramycin and chloramphenicol, constituted a group apart from the others of more limited scope, penicillin, streptomycin, bacitracin and neomycin.

When combinations from the latter group were used, a high percentage of synergism (bactericidal action greater than the dosage of the agents used should warrant) occurred. When combinations of antibiotics of both groups were used, the largest per cent of antagonisms developed. In this case it seemed that the ineffectual agent negated the efficacy of the active agent. Combinations of wide spectrum antibiotics were of only additive value probably because of their close chemical similarities. There were no fixed pairs which could be designated antagonistic or synergistic because the bacterial strain involved seemed to be the determining factor. Under these conditions, complete bacteriological laboratory diagnosis should not only report bacterial sensitivity to single antibiotic agents but to combinations to facilitate maximum efficiency in antibiotic therapy.

(M. V. N.)

Badminton. The United States amateur badminton championships, held in 1952 at Seattle, Wash., as one of the sports features of that city's centennial celebration, drew a field of top stars. Martin Mendez of San Diego, Calif., annexed the men's senior honours for the third time by conquer-

ing Joseph Alston of Fargo, N.D., 15-3, 7-15, 15-6. Alston had lifted Mendez's crown the year before. Ethel Marshall, Buffalo, N.Y., left-hander, continued her domination of the women's ranks and gained her sixth consecutive title when she defeated Thelma Scovil, Long Beach, Calif., 11-3, 11-7. Miss Marshall paired with Beatrice Massman, Buffalo, N.Y., for the women's doubles as they triumphed over Thelma Scovil and Janet Wright, San Francisco, Calif., 15-10, 18-17. Wynn Rogers, Arcadia, Calif., and Alston combined for the men's championship, halting Mendez and Bob Williams, Williamsville, N.Y., 15-4, 15-8. Helen Tibbetts, Alhambra, Calif., and Rogers scored in the mixed doubles, setting back Ethel Marshall and Bob Williams, 17-16, 15-10. Fred Fullin, Norwalk, Conn., and Howard Holman, Fresno, Calif., took the veterans' doubles.

Malaya retained the world championship and the Thomas cup when it defeated the United States, 7-2, in the challenge round at Singapore in June. The United States stars had won the American zone title by halting Canada, 6-3, and then advanced to the last round against the defenders with a surprise 5-4 victory over India. (T. V. H.)

Bahamas. This British colony consists of about 20 inhabited and 680 uninhabited islands off the Florida coast. Area: 4,375 sq.mi. Pop.: (1943 census) 68,846; (1951 est.) 81,000. Language: English. Religion: Christian. Capital: Nassau (pop. 1943, 29,391), on New Providence Island. Governor in 1952, Maj. Gen. R. A. R. Neville.

History.—Butlin's vacation village at West End, Grand Bahama, remained closed, but it was reported in July 1952 that an offer of £805,000 had been made for the company's assets; however, no decision was reached and negotiations continued. The colony prospered as the result of a building boom, the substantial remittance to the colony from earnings of Bahamian labourers in the United States, and the continued growth of the tourist industry, the main basis of the islands' economy.

Immediate and future airport requirements were studied, account being taken of the possible use by B.O.A.C. (British Overseas Aircraft corporation) of Comet aircraft. The U.S. air force officially took possession of the first guided-missile bases in July.

The foundation stone of a new £300,000 hospital was laid in Nassau in March. Six out of eight bills for raising increased revenue were rejected by the house of assembly on the grounds that revenue already exceeded expenditure and that there was room for economy in government departments.

Great concern was expressed during the year about the possible extinction of the American flamingo, of which only about 15,000 were believed to exist. Their principal breeding grounds are in the Bahamas where their numbers had been diminishing rapidly in recent years. In 1952 the Society for the Protection of the Flamingo in the Bahamas was established.

Education.—Schools (1951): primary 178, enrolment 17,909; secondary 6, enrolment 598.

Finance and Trade.—Budget (1951 actual): revenue £2,044,385; expenditure £1,828,642. Foreign trade (1951): imports £7,650,419; exports £729,012; re-exports £290,643. Principal exports: lumber, tomatoes, crawfish and salt. Monetary unit: pound sterling; U.S. dollars also generally accepted. (Jo. A. Hn.)

Bahrein: see ARABIA.

Balearic Islands: see SPAIN.

Balkan States: see ALBANIA; BULGARIA; GREECE; ROMANIA; TURKEY; YUGOSLAVIA.

Ballet: see DANCE: Ballet.

Baltic States: see ESTONIA; LATVIA; LITHUANIA.

Baltimore. Baltimore is the metropolis of Maryland and had an estimated population of 956,500 in Sept. 1952. The land area of the city is 78.72 sq.mi.; the water area,

13.21 sq.mi. Mayor in 1952: Thomas D'Alesandro, Jr., Democrat.

Budget appropriations for 1952 were \$166,657,113.38; for 1951, \$141,236,789.76. The city tax rate for 1952 was \$2.74 per \$100 of assessed valuation and the rate for 1951 was \$2.62. The taxable basis for 1952 was \$2,600,466,616 and for 1951 it was \$2,441,210,616. The gross funded debt, as of June 30, 1952, was \$217,350,100; the sinking funds amounted to \$36,423,944, leaving a net debt on that date of \$180,926,156, not including accrued income. The percentage of net debt to the taxable basis (excluding self-supporting indebtedness) was 4.4% for the year 1952.

The net enrolment on Oct. 31, 1951, in the public schools of the city was 81,321 white students and 43,873 Negro students; in addition, 12,605 white and 4,936 Negro students were enrolled in adult education classes. William H. Lemmel had been superintendent of the Baltimore city schools from July 1946. The public schools of Baltimore are a separate and distinct unit and are not under the jurisdiction of the state department of education.

Ranking as the second United States port in foreign-trade tonnage, the combined exports and imports at the port of Baltimore during the year 1951 amounted to 22,310,298 tons, compared with 15,058,935 tons for the previous year, or an increase of 48%. The port's foreign commerce in 1951 was valued at \$882,300,000 against \$568,800,000 in 1950. The volume of Baltimore's total overseas trade for the first four months of 1952 was reported at 8,057,900 tons, an increase of almost 18% over the 6,837,000 tons of similar commerce handled in the corresponding period of 1951.

Manufacturing activity in the Baltimore metropolitan area during 1951 continued the upward trend which began about the middle of 1950. Employment in manufacturing increased steadily throughout 1951, averaging 191,100, an increase of 21,775 workers, or 13% over the previous year. The leading industry groups based upon the volume of employment, included primary metal industries, blast furnaces and steelworks, food and kindred products, aircraft, apparel, fabricated metal products, machinery, electrical equipment, shipbuilding and repair, chemicals, automobiles, tin cans and tinware, beverages, printing and publishing. Total nonagricultural employment in the Baltimore metropolitan area, exclusive of self-employed, domestic servants and unpaid family workers, in 1951 averaged 520,300, an increase of 34,200 workers, or 7% over the 1950 average.

(C. N. E.)

Bananas: see FRUIT.

Banking. The money and capital markets of the United States experienced during 1952 the heaviest overall demands since the last year of World War II. The supply of savings funnelled through investment institutions to meet these demands was high, and the amount of bank credit expansion was less than in 1950 or 1951.

Shifting tactics during the year by the federal reserve brought about a large degree of uncertainty as to its operations in the money market. Member banks greatly increased their use of discounts and advances to obtain reserve funds, with their total indebtedness to the federal reserve banks rising to \$1,667,000,000 on Nov. 5. The yields on 91-day treasury bills reached a 20-year high of 1.903% on Aug. 12. The range of yields on Aaa corporate bonds was between a high of 3.03% and a low of 2.91%.

The total of all corporate securities issued in 1952 promised to exceed that of 1951 and set a new yearly high since 1929. From January through Aug. 1952, total new corporate securities offered for cash in the United States aggregated \$6,540,000,000 compared with the previous postwar record, \$7,741,000,000 for



HONOUR SYSTEM for making change, installed in 1952 at the Central National Bank of Yonkers, N.Y. Patrons deposited coins or bills, taking change from containers, and the bank reported all transactions perfectly correct after the first day's trial

the full year 1951. Bonds offered from January through Aug. 1952 totalled \$5,112,000,000, which was at a postwar record rate. Moreover, this was in addition to the issuance through August of \$1,427,000,000 of common and preferred stock, a much higher rate than in any recent year.

State and local government borrowings were at record levels in 1952, surpassing the previous high level in 1950. Commercial banks absorbed about one-half of the new state and municipal issues, with fire, marine and casualty insurance companies, individuals and personal trust funds accounting for the bulk of the remainder. A rise in yields on municipal obligations widened their market. New state and local government bond issues totaling almost \$1,300,000,000, virtually all of them to finance public improvement, were approved by the voters early in November.

The year saw another large increase in home-mortgage debt, although not as large as in the two preceding years. Savings and loan associations showed the largest increase in their mortgage portfolios, followed by the net additions by life insurance companies, mutual savings banks and commercial banks. Outstanding mortgage debt secured by 1- to 4-family houses stood at about \$57,000,000,000 on June 30, with Veterans administration-guaranteed and Federal Housing administration-insured debt accounting for somewhat more than two-fifths of the total.

Consumer credit expanded rapidly during the year. At the end of September, total consumer credit outstanding stood at a record level of \$21,656,000,000, a rise of \$2,300,000,000 during the preceding year and an increase of \$4,000,000,000 since June 1950.

The privately held money supply reached a new record high during the year. Thus, total deposits adjusted and currency outside banks stood at \$187,400,000,000 on Sept. 24, an increase

of \$9,500,000,000 over the figure of a year before. This increase was primarily the result of expansion of bank credit which amounted in total at all banks to \$10,200,000,000 during the same period, with the loan increase being predominant.

The volume of bank deposits at commercial banks in 342 reporting centres reached another record high level in 1952. The annual rate of turnover of demand deposits showed little increase from 1951 to 1952, although there was a rise in New York city.

New peaks were reached during the year in total loans and investments of all commercial banks, at \$137,090,000,000 by Sept. 24; in total loans, \$61,200,000,000; and in holdings of state and local governments and other securities, \$14,280,000,000. Commercial bank holdings of government securities showed little net change in 1952, and on Sept. 24 amounted to \$61,610,000,000.

On June 30, 1952, national banks, which numbered almost 5,000, held \$92,720,000,000 of total deposits. State banks, which numbered about 9,200, had total deposits of \$69,648,000,000.

Money in circulation showed a substantial increase during 1951, continuing the trend started in the preceding year. Late in 1952 money in circulation stood at an all-time high, in excess of \$30,000,000,000, about \$1,200,000,000 more than a year earlier. The usual seasonal variations in money in circulation were important short-run money market factors.

During the first quarter of 1952, the gold stock rose by almost \$700,000,000, continuing the increase which began in Aug. 1951. Starting in the second quarter of 1952, however, there was very little change in the gold stock, as merchandise exports fell sharply. At the end of October, the gold stock stood at \$23,340,000,000.

The year saw a further increase in the gross federal debt to almost \$265,000,000,000 on Oct. 31, about \$5,500,000,000 more than on Dec. 31, 1951, and about \$13,500,000,000 more than on April 30, 1949, the date of the lowest postwar debt. Gross federal debt was \$1,676.91 per capita on Oct. 31, 1952, and the computed annual interest rate on interest-bearing debt was 2.349% on that date.

During the second quarter the treasury obtained \$1,600,000,000 of new funds by increasing a number of its weekly bill offerings by \$200,000,000 each. In October the treasury offered 161-day tax anticipation bills, with \$2,501,000,000 issued at an average rate of 1.720%. In November another \$2,000,000,000 issue of 210-day tax anticipation bills was offered at 1.846%.

In May the treasury offered a 2½% nonmarketable bond, redeemable into 5-year, 1½% marketable notes, but obtained only a little more than \$300,000,000 from this issue. In June the treasury raised \$4,450,000,000 through offering a heavily oversubscribed 6-year 2½% bond, the first marketable bonds offered for cash subscription since 1945. A certificate issue of \$10,861,000,000, 11½ months at 1⅞%, was refunded into a 13-month note at 2⅞% on Oct. 1. During 1952, \$13,700,000,000 of marketable bonds, formerly restricted to nonbank ownership, became eligible for purchase by commercial banks.

Effective May 1, the savings bonds program was revamped, with new and more attractive savings bonds being offered. The new series E bond continued to be sold at 75% of maturity value, but the maturity was shortened slightly from 10 years to make the yield to maturity, 9 years and 8 months, 3% instead of the previous 2.9%. More important, the yield on the new E bonds, if redeemed in early years, was greatly increased compared with the former bond. Series F and G savings bonds were withdrawn and replaced with new series J and K, with the yield on both of these issues set at 2.76% instead of the 2½% on the old issues, and with a much higher yield if redeemed in early years than formerly. A new bond, series H, similar to the series E bond but with current income paid by check, was introduced.

The limits on the amount any individual could purchase annually were also raised. These actions had the result of narrowing the excess of redemptions over new sales, but the treasury was still not raising new money through the savings bonds program. Toward the end of the year there was much discussion of possible legislation by the next congress to raise the present 3% limit on the interest rate on savings bonds. (See also BUSINESS REVIEW; CONSUMER CREDIT; DEBT, NATIONAL; EXPORT-IMPORT BANK OF WASHINGTON; FEDERAL DEPOSIT INSURANCE CORPORATION; FEDERAL RESERVE SYSTEM; GOLD; INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT; STOCKS AND BONDS.)

(J. K. L.)

Mutual Savings Banks.—During the year ended July 1, 1952, the mutual savings banks of the United States had the third largest yearly net gain in assets and deposits recorded to date. The net gains of \$1,567,804,795 or 6.85% in assets and \$1,372,486,550 or 6.73% in deposits for the year were exceeded in the year ended July 1, 1945, with net gains of \$2,094,379,836 or 15.11% in assets and \$1,950,327,636 or 15.69% in deposits, and in the year ended July 1, 1946, with net gains of \$2,075,343,084 or 13.01% in assets and \$1,846,557,661 or 12.84% in deposits. On July 1, 1952, the combined assets of the mutual savings banks of the United States were \$24,459,830,255 and deposits were \$21,772,059,984. The combined surplus of the banks on July 1, 1952, was \$2,495,719,530 or 11.46% of deposits. There was an increase of 305,116 or 1.57% in the number of accounts during the year ended July 1, 1952, in contrast to a decrease of 123,258 or 0.63% in the previous year. On July 1, 1952, there were 19,713,231 accounts with an average balance of \$1,104.44.

Ten years earlier, on July 1, 1942, the average balance was \$660.58 and there were 15,674,831 accounts with total deposits of \$10,354,532,573. Over the ten-year period deposits in mutual savings banks increased 110.26% while the total number of accounts increased only 25.76%.

Dividends credited to mutual savings accounts averaged 2.38% for the year ended July 1, 1952, an increase from 2.05% during the previous year.

On Sept. 30, 1952, there were in operation 529 mutual savings banks with 245 branches. The number of branches put in operation in the first nine months of 1952 was 15.

As a result of the removal of the federal income tax-exempt status of mutual savings banks by the Revenue act of 1951, the banks increased their holdings of bonds other than U.S. governments, particularly tax-exempt municipal issues. The banks in New York state also secured legislation which permitted them to invest up to the lesser of 50% of surplus or 5% of assets in preferred, guaranteed or common stocks of corporations with the limitation of the lesser of 30% of surplus or 3% of assets applicable to common stocks. Investments in preferred and guaranteed stocks are subject to an earnings test while common stocks must have a ten-year dividend record and be listed on a national securities exchange. Bank stocks are specifically excluded. Included is the stock of any investment company all of whose shares are owned by savings banks.

New York was the 11th state to legalize the purchase of some type of equity securities by mutual savings banks, and the only one of the 11 states to prohibit the purchase of bank stocks.

The combined assets of all mutual savings banks on July 1, 1952, were invested as follows: U.S. government securities 39.35%, other securities 12.33%, real estate mortgage loans 42.54%, other assets 5.78%. The ratios on July 1, 1951, were: U.S. government securities 44.65%, other securities 10.92%, real estate mortgage loans 38.94%, other assets 5.49%. Insured mortgage loans, Federal Housing administration and Veterans administration combined, increased from 37% of the mortgage portfolio as of Dec. 31, 1950, to 44% as of Dec. 31, 1951.

British Trustee Savings Banks.—The combined funds of trustee savings banks in Great Britain increased £28,569,053 during the fiscal year ended Nov. 20, 1951, compared with an increase of £55,401,865 in the year ended Nov. 20, 1950. The comparative financial positions of the banks as between Nov. 20, 1950, and Nov. 20, 1951, were as follows:

	1951 £	1950 £
Cash balances due to depositors:		
Ordinary department	816,556,246	793,736,478
Special investment department	115,649,790	115,179,318
Government stock and bonds held for depositors (nominal value)	93,987,350	87,757,196
Combined surplus funds	18,402,806*	19,354,147
Total funds	1,044,596,192	1,016,027,139

*Exclusive of reserves for depreciation of investments held by the Special Investment Departments amounting to £1,329,416.

The total number of accounts of the three classes, ordinary, special investment and stock, was 7,605,173, an increase of 430,421 during the year ended Nov. 20, 1951, compared with an increase of 387,026 during the year ended Nov. 20, 1950. On Nov. 20, 1951, there were in Great Britain 85 trustee savings banks with 1,210 offices in operation. (HE. BR.)

Other Countries.—The new economic forces generated by the development of the world commodity boom immediately after the opening of the war in Korea and by its subsequent collapse about a year later dominated the banking scene in Great Britain, the commonwealth, Europe and the middle east throughout 1952. During the early months of the year the rise in the price level came to an end in most countries under the influence of the weaker turn in international commodity markets in the second half of 1951. The resulting check to the previous steady expansion in the demand for money for financing trade and commerce exercised a restraining effect on the growth of bank deposits. In the majority of countries the impact on banking structures of the change in the trend of prices was underlined by the credit restriction policies which many governments imposed in 1951 or in the early months of 1952 to counter inflationary processes set in motion by the earlier rise in the price level. In general the tendency in operating credit restriction was to place more emphasis on monetary controls such as the manipulation of the bank rate and adjustment of the money supply through central bank operations, and less emphasis on the so-called physical controls like the banning, or partial banning, of particular types of bank lending. Thus besides exerting a downward pressure on bank deposits, governmental measures often brought about wide and frequent changes in rates of interest for all classes of banking business. In some cases they also caused banks considerable worry over such questions as the adequacy of their liquid resources in relation to sight liabilities.

Toward the end of 1952 banking conditions became more stable over a large part of the area. By this time inflationary processes had been brought under control in many countries and in some countries had been so far reversed that it was considered advisable to reduce the bank rate and ease other monetary controls to avoid incurring the danger of precipitating a deflationary spiral.

During the early part of 1952 the banking system in Great Britain was required to adjust itself to the situation created by the government's decision late in 1951 to make more use of monetary controls in contending with inflationary pressures. Encouraged by a second rise in the bank rate from 2½% to 4% in March (in Nov. 1951 the rate had been raised from 2% to 2½%), the commercial banks increased rates of interest for all classes of business. The rate of interest on time deposits was stepped up to 2%. Charges for short-term loans to the money market were raised to a minimum of 2% and an entirely new scale established for ordinary loans to other business concerns

and private borrowers. The increased charges, coupled with the reduced demand for bank money for stock financing after the price fall and the banks' energetic response to the official request for a strict ban on loans for nonessential purposes, brought down the advances of the London clearing banks (which together account for about 95% of the country's commercial banking business) from an all-time high level of £1,953,000,000 in April to £1,748,000,000 in October. Compared with Oct. 1951, the latter figure showed a net fall of £149,000,000.

Eleven London Clearing Banks

(£ million)

	Oct. 1952	Oct. 1951	Oct. 1950	Oct. 1949
Deposits	6,167	6,204	6,204	6,050
Net Deposits	5,941	5,981	6,006	5,868
Cash	498	514	509	499
Call money	500	579	557	556
Bill holdings	1,112	1,340	1,414	1,162
Treasury deposit receipts	nil	177	496	744
Investments	2,142	1,555	1,505	1,517
Advances	1,747	1,897	1,598	1,466
Acceptances, etc.	373	481	346	261

The tendency for international trade to contract, the fall in the price level and a tightening of British exchange control restrictions on overseas credit combined to produce a severe contraction in the clearing banks' commercial bill holdings from £187,000,000 in February to £64,000,000 in September. Over the same period the acceptances item dropped from £532,000,000 to £386,000,000 for similar reasons. (C. H. G. T.)

Bankruptcy: see SECURITIES AND EXCHANGE COMMISSION.

Baptist Church. Evangelism was stressed by Baptists of the world during 1952. The emphasis was born of the persuasion that the mission of the Church is not merely worship of God and instruction in Christian principles but pre-eminently it is the specific endeavour to have people pledge their practical loyalties to Christ.

At the New South Wales Theological college in Sydney, Austr., 16 new students entered during 1952 making a total enrolment of 39.

Rev. A. J. Barnard was installed as principal of the Baptist Theological college in Johannesburg, Union of South Africa, Feb. 14, 1952. The year marked the diamond jubilee of the South African Missionary society.

The Baptist Union of India, Burma and Ceylon, organized in 1936, met at Cuttack, India, Dec. 29, 1951, to Jan. 1, 1952, and enlarged its scope to include Pakistan. In India and Pakistan, Baptists numbered 3,250,000, or one-half of all Protestant Christians in those countries. An awareness of their strength was revealed in their attitude toward foreign missionary organizations in their midst. Missionary "administrative machinery," they announced, "has become a stumbling block to the development of Baptist churches in our land. We are not Canadian Baptists, British Baptists, Australian, New Zealand or American or Swedish Baptists,—we are first of all Baptists of India and Pakistan. . . ." Without abandoning Baptist principles they pledged support to the ecumenical movement in their countries, believing their contribution to that cause would be the greater as they affirmed their own distinctions.

The Baptist General Conference of America (Swedish Baptists) observed its centenary June 26–29, 1952, in St. Paul, Minn. The first Swedish Baptist church in the U.S. was organized at Rock Island, Ill., Aug. 13, 1852. There were reported 65 foreign missionaries; 360 churches with 47,000 members; the *Standard*, the official publication, with 15,000 subscribers.

The Southern Baptist convention (U.S.) met in Miami, Fla., May 11–18; messenger registration totalled 11,003 and attendance 16,000. Twenty-two states were represented with a

church membership of 7,373,498, a gain of 98.8% in 25 years while the U.S. population increased 28.6%. Eight hundred and fifty missionaries were located in 30 countries, 35 being commissioned during the year.

The American Baptist convention (northern) assembled in Chicago, Ill., May 19-23 with a total registration of 11,556, delegates numbering 3,112. A major consideration was the merging of the Baptists of this convention with the Disciples of Christ, but this was decided against for the present. Forty-seven missionaries were appointed to home and foreign fields.

The Brazilian Baptist convention appointed 10 missionaries to the home field in 1952, bringing the total to 130.

The National Baptist convention, U.S. (Negro), reported an increased membership from 3,196,000 to 7,091,000 (121%) in 25 years. (See also CHURCH MEMBERSHIP.) (R. E. E. H.)

Barbados. This British colony is the most easterly of the Caribbean islands. Area: 166 sq.mi. Pop.: (1946 census) 192,841; (1951 est.) 213,000. Language: English. Religion: Christian (c. 70% Anglican). Capital and chief port, Bridgetown (pop. 1949, 13,700). Governor in 1952, Sir Alfred Savage.

History.—At the general election of Dec. 1951 the Labour party won 16 out of the 24 seats in the house of assembly.

A further levy on profits in the sugar industry to augment the contribution to a fund for the welfare of workers was legally established. Improvements in the terms of service of many senior civil servants in the colony also came into effect; and a commission was appointed to consider the conditions affecting the service of those in the lower grades, and to make recommendations. Other legislation set up a revenue equalization fund to guard against any possible future deterioration in the budgetary position; and two further acts gave additional assistance to the fishing industry and made third-party insurance compulsory for motorists. A bill which, if adopted, would make fundamental changes in the system of local government in Barbados came up for consideration. A comprehensive fiscal survey made by Professor C. G. Beasley, economic adviser to the comptroller for development and welfare, was studied in relation to the colony's proposed five-year development plan and was discussed at length in the press and elsewhere. The expansion and modernization of facilities at Seawell airport represented an important step in the development of the tourist industry. This airport conformed fully to the standards of the International Civil Aviation organization.

Education.—Pupils, elementary (Aug. 1952), 30,973; secondary (Aug. 1951), 2,838. Expenditure (1952-53): B.W.I. \$2,048,765.

Finance and Trade.—Monetary unit: British Caribbean or British West Indian dollar, set at 4.8 to the pound, and valued at 58.33 cents U.S. Budget (1952-53 est.): revenue B.W.I. \$12,390,194; expenditure B.W.I. \$12,049,294. Foreign trade (1951): imports B.W.I. \$51,918,327; exports (including re-exports) B.W.I. \$35,464,166. Principal exports: sugar, fancy molasses, rum. Sugar crop (1952), 167,876 tons. (P. H-Mv.)

Barkley, Alben William (1877-), vice-president of the United States, was born on a farm in Graves county, Ky., on Nov. 24, and attended Marvin college, Clinton, Ky., Emory college, Oxford, Ga., and the University of Virginia law school in Charlottesville, Va. He was elected prosecuting attorney of McCracken county, Ky., in 1905 and was judge of McCracken county court, 1909-13. He was elected to the U.S. house of representatives in 1912 and after 14 years there was elected to the U.S. senate. He was keynote speaker at the 1936 Democratic national convention, permanent chairman of the 1940 convention and delivered the speech nominating Franklin D. Roosevelt for a fourth term at the 1944 convention.

Throughout much of World War II he was senate majority

leader, and as such shepherded numerous wartime and emergency acts through that body. In 1946 when the Republicans gained control, he became senate minority leader. He was keynote speaker again at the 1948 party convention in Philadelphia, and there was nominated for the vice-presidency, being elected with Pres. Harry S. Truman and taking office in 1949.

Following President Truman's announcement of March 29, 1952, that he would not run again for the presidency, Barkley was mentioned prominently as a possible Democratic candidate. He formally announced his candidacy on July 6 but withdrew on July 21, opening day of the Democratic national convention in Chicago, Ill., after a group of labour leaders had objected to his age (74).

His address before the convention on July 23 received a great ovation, and despite his withdrawal he was placed in nomination for the presidency, receiving 48½ votes on the first ballot, 78½ on the second, and 67½ on the third, when Adlai Stevenson was nominated.

Barley. The United States barley crop of 1952, estimated at 222,476,000 bu., was of high quality but small quantity compared with the 254,668,000 bu. of 1951 and the 1941-50 average of 306,127,000 bu. The average per acre yield of 27 bu. approximated that of 1951 and exceeded the ten-year average of 24.9 bu. Hence the smaller harvest was the result of a 12% decline in harvested acreage, 8,226,000 ac., compared with 9,391,000 ac. in 1951 and a 12,315,000-ac. average for 1941-50. Farmers had expressed intentions early in the year of planting 9,752,000 ac., 90% as much as in 1951 but only 76% of the government goal for 1952, apparently preferring for price reasons to sow oats, flax or spring wheat instead. California was the leading producer with 53,892,000 bu. (42,360,000 bu. in 1951) and a record high yield of 36 bu. per acre. Minnesota was second with 25,162,000 bu., and North Dakota, usually the leading state, was third with 22,633,000 bu.

Prices received by farmers near harvest time averaged about \$1.40 per bushel.

Barley Production of the Principal Producing Countries

Country	(In thousands of bushels)			
	1952*	1951	1950	Average 1935-39
U.S.S.R.	294,636	257,051	325,000	425,000
Canada	222,476	254,668	171,393	88,882
United States	133,000	110,000	303,533	238,622
Turkey	105,000	81,500	94,020	96,129
Spain	100,800	80,700	78,000	97,059
United Kingdom	100,000	105,650	79,850	36,596
India	99,500	100,000	100,470	90,253
Japan	91,500	79,000	78,000	73,113
Denmark	81,500	78,000	74,180	52,881
Western Germany	78,700	76,560	67,600	79,000
France	53,000	68,500	72,200	53,004
French Morocco			50,000	53,275

*Preliminary estimate.

World barley production for 1952-53 was forecast at 2,710,000,000 bu. compared with 2,585,000,000 in the previous year and a prewar average of 2,365,000,000 bu. Substantial increases occurred in most areas, except the U.S.S.R., with Canada showing a striking increase. Acreage increased to 119,910,000 ac., compared with 115,560,000 ac. in 1951 and 116,370,000 ac. prewar. (J. K. R.)

Baseball. During the 1952 major league baseball season, Charles Dillon (Casey) Stengel piloted the New York Yankees to their fourth straight American league pennant and fourth straight world championship. He was the second manager in history to win four consecutive pennants and world titles. Only Joe McCarthy before him had turned the trick. Stengel had won both crowns in the first four years he was the manager of the New York club, despite the fact that as a major league manager before joining the Yankees, he had in nine years

been unable to place a team in the first division.

Player, Manager Changes.—Two new managers graced the American league scene when the 1952 season got under way. Rogers Hornsby was in charge of the St. Louis Browns, taking over for James (Zach) Taylor who had held the post when the Browns were purchased by Bill Veeck. Hornsby had led Beaumont to a title in the Texas league and followed that by guiding Seattle to a title in 1951. The other new manager was Lou Boudreau, who began the 1952 campaign as Boston Red Sox manager, having taken over for Steve O'Neill. His past-performance chart showed that as manager for the Cleveland Indians for nine years, Boudreau had won one pennant and world championship (1948) and had finished in the first division six times.

The season was less than two months old when Hornsby had a parting of the ways with the Browns. Named to take over for Hornsby was Marty Marion. "Mr. Shortstop," as Marion was known, had managed the St. Louis Cardinals the year before. When the Cardinals decided not to renew his contract after 1951, the Browns had signed him as player-coach.

Hornsby was not the only American league manager who did not retain his post until the season reached its conclusion. Detroit manager Robert (Red) Rolfe, who had starred at third base with the New York Yankees from 1934 through 1942, stepped down in favour of Detroit pitcher Freddie Hutchinson. Hutchinson first joined the Tigers in 1939.

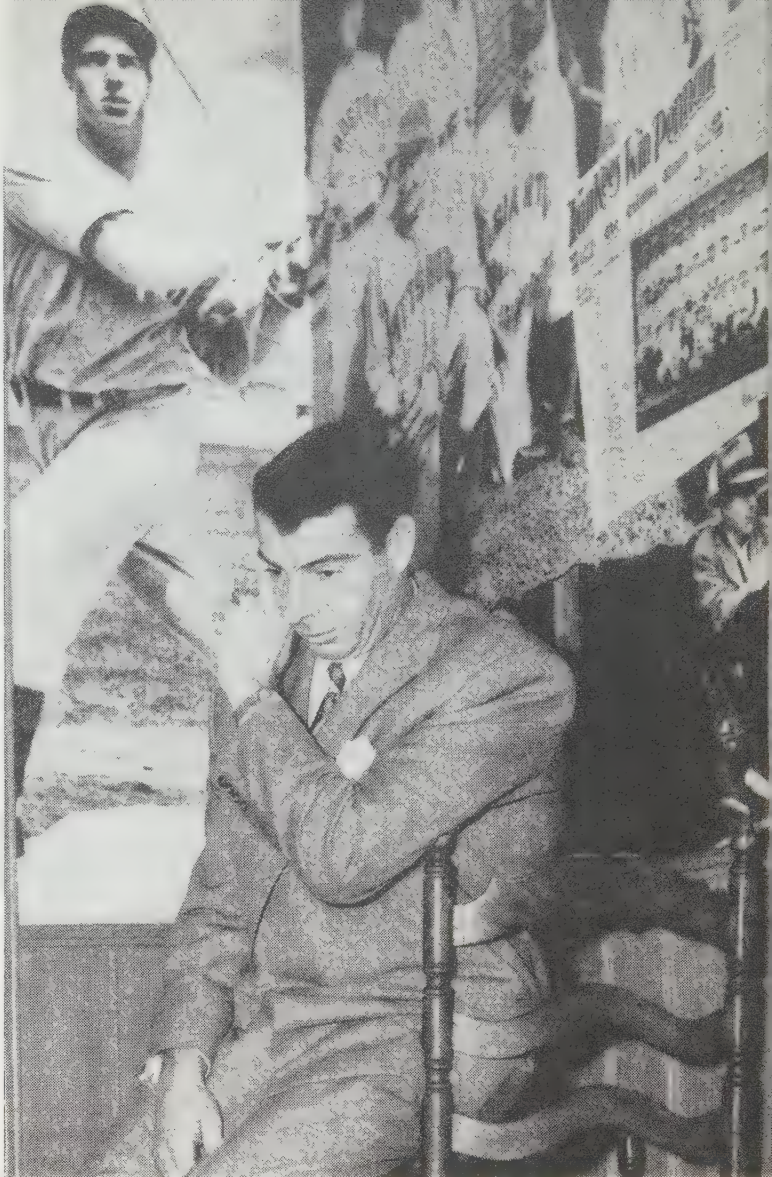
The National league, too, saw changes in managers. Eddie Stanky started the 1952 season as the manager of the St. Louis Cardinals, after relieving Marty Marion following the conclusion of the 1951 season, although Marion had led the St. Louis team to a third place finish in 1951. Stanky was the only National league manager to start the season as a rookie pilot.

However, before the season came to a finale, other changes had been made. Tommy Holmes, who had taken over as field pilot for the Boston Braves after the 1951 season was under way, was relieved of his command. In his place, Boston owners installed Charlie Grimm, the baseball player who had gained fame two decades before while playing first base for the Chicago Cubs. "Jolly Cholly" had led the Milwaukee Brewers to a championship in the American association in 1951. Holmes was later hired by the Brooklyn Dodgers as a pinch-hitting specialist. At the season's end he returned to the Boston organization as manager of their Milwaukee Brewers club.

Eddie Sawyer, the man who had managed the Philadelphia Phillies "Whiz Kids" of 1950, was informed during the year that the front office was not pleased with his efforts. Sawyer's successor was Steve O'Neill, who the season before had seen service as manager of the Boston Red Sox.

James (Luke) Sewell was another National league manager who started the 1952 season at the helm of a club (Cincinnati), but did not remain in that post to see the season come to an end. In his stead came Rogers Hornsby, the former St. Louis Browns pilot. Billy Meyer remained in command of the Pittsburgh Pirates until the season was over, but shortly before its demise Meyer announced that he had resigned. It had been a dismal year for Meyer, who had been named "manager of the year" in 1948 for bringing home the Pittsburgh club in fourth place. His 1952 team suffered 112 losses while winning only 42 games.

The season had progressed less than a month when the New York Yankees moved into the trading market in an attempt to defend their world championship. Jackie Jensen, a young outfielder who had gained national fame as an All-American football player at the University of California, and Frank (Spec) Shea, a right-handed pitcher who had been unable to present a winning pitching record since 1947 in either the minors or the majors, were sent by the Yankees to the Washington Senators. In return,



JOE DiMAGGIO, centre fielder for the New York Yankees for 13 years, at Yankee headquarters after announcing his retirement as a player in Dec. 1951. He made his TV debut in April 1952 in Joe DiMaggio's Dugout, a weekly series of televised films about baseball

the Yankees received the contract of Irv Noren, a left-handed hitting outfielder who had hit .279 the year before with the Senators. The Senators traded away another of their outfielders in a deal with the Chicago White Sox. This time it was Sam Mele, a right-handed hitter. For Mele, Washington received the fleet-footed outfielder, Jim Busby, and second baseman Mel Hoderlein. In June the Detroit Tigers and Boston Red Sox got together and made a nine-player deal. Detroit gave up third baseman George Kell, who had led the American league in hitting in 1949, shortstop Johnny Lipon, outfielder Walter (Hoot) Evers and pitcher Paul (Dizzy) Trout. For the four Detroit players, Boston handed over five men on their roster, including first baseman Walter Dropo, infielder Johnny Pesky, third baseman Fred Hatfield, outfielder Don Lenhardt and left-handed pitcher Bill Wight. The Chicago White Sox obtained Jim Rivera, an outfielder, who had been White Sox property before being traded to the St. Louis Browns in 1951, and catcher Darrell Johnson from the Browns. In return for the pair, the Browns received outfielder Ray Coleman and the rights to catcher J. W. Porter. Shortly after the season reached the halfway point, the New York Yankees obtained left-handed pitcher Johnny Schmitz from the Brooklyn Dodgers in a waiver deal. Another waiver transaction took place between the Detroit Tigers and St. Louis Browns,

this one involving eight men. The two principal participants were right-handed pitcher Ned Garver, who won 20 games for the Browns in 1951, and Detroit outfielder Vic Wertz. The Cleveland Indians gave up infielder Johnny Berardino and cash for shortstop George Strickland and right-handed hurler Ted Wilks of the Pittsburgh Pirates. Ray Scarborough, right-handed pitcher, was shipped from the Boston Red Sox to the New York Yankees for cash. The Yankees obtained another pitcher when they sent Johnny Schmitz and cash to the Cincinnati Reds for right-hander Ewell Blackwell. The Cincinnati Reds obtained outfielder Wally Westlake and infielder Eddie Kazak from the St. Louis Cardinals in exchange for first baseman-outfielder Dick Sisler and shortstop Virgil Stallcup. Westlake was not with Cincinnati long before he was dealt to the Cleveland Indians in a cash deal. Right-handed hurler Emory (Bubba) Church was obtained from the Philadelphia Phillies by the Reds for John Wyrostek, a first baseman and outfielder, and southpaw Kent Peterson. The Reds also picked up two outfielders in cash transactions. Willard Marshall was purchased from the Boston Braves and Cal Abrams was obtained from the Brooklyn Dodgers. The New York Giants handed over \$50,000 and hurler Sheldon Jones to the Boston Braves for outfielder-third baseman Bob Elliott.

Individual Performances.—Stan Musial of the St. Louis Cardinals won the 1952 National league batting title with a .336 (unofficial) mark. It was the sixth time that "Stan the Man" had captured the title and put him within reach of the National league record of eight batting titles set by Honus Wagner. Hank Sauer of the Chicago Cubs and Ralph Kiner of the Pittsburgh Pirates tied for the home-run crown with 37 (unofficial) homers each. For Kiner it marked the seventh consecutive year that he had led or tied for the National league home-run title. Sauer also won the runs-batted-in crown with 121 (unofficial). In the American league Ferris Fain of the Philadelphia Athletics took his second straight hitting title with a .327 (unofficial) average. Larry Doby of the Cleveland Indians was top home-run producer in the league with 32 (unofficial). His teammate, Al Rosen, won the runs-batted-in contest with 105 (unofficial).

Relief pitcher Hoyt Wilhelm of the New York Giants captured the earned-run average title in the National league. He had 2.43 (unofficial). The pitcher with the best earned-run average in the American league was Allie Reynolds of the New York Yankees, who had a mark of 2.06 (unofficial). There were six 20-game winners. Robin Roberts of the Philadelphia Phillies was the only National league pitcher to enter the charmed circle with 28 victories. The American leaguers were: Bobby Shantz of Philadelphia (24), Early Wynn of Cleveland (23), Mike Garcia of Cleveland (22), Bob Lemon of Cleveland (22) and Allie Reynolds (20).

Three no-hitters were hurled during the 1952 season. Virgil Trucks of the Detroit Tigers threw two no-hitters, the first coming on May 15 against the Washington Senators and the second on Aug. 25 against the New York Yankees. The third no-hitter was hurled by Carl Erskine of the Brooklyn Dodgers. On June 19 he held the Chicago Cubs hitless in a game interrupted by rain.

The armed services interrupted the careers of some of the game's stars. Ted Williams, a captain in the marine air corps reserve, was called back to duty shortly after the season got under way. Facing a tour of duty which could carry through the 1953 baseball season, the Boston Red Sox outfielder announced it was doubtful that he would resume playing upon his discharge because of his age. If the military did ring down the curtain on the career of Williams prematurely, the records he had amassed while in major league ball still ranked him as one of the great sluggers in the game's history. Williams was not the only American league star lost to the services. The New York Yankees

lost second baseman Jerry Coleman and pitcher Tom Morgan. Bob Kennedy of the Cleveland Indians was also called into service.

In the National league the 1951 pennant winner, the New York Giants, had the services of Willie Mays, 1951 "rookie of the year," for only a short time during 1952 before he was drafted. The Brooklyn Dodgers were also hard hit by the military draft when they lost their fireballing right-hander, Don Newcombe.

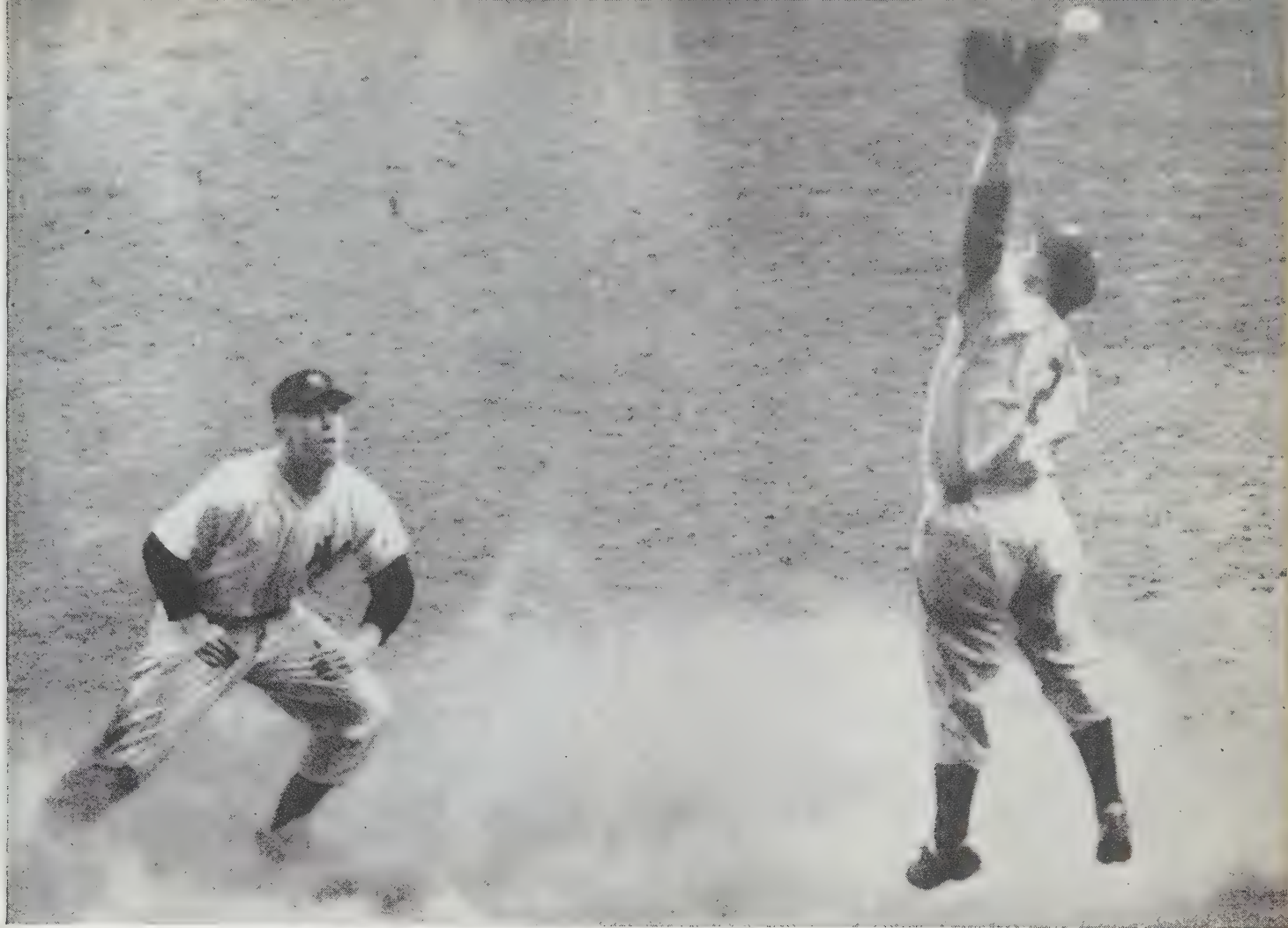
All Star Game.—Shibe park, Philadelphia, was the site of the 19th annual All Star game, which the National league took by a 3-2 score. A total of 32,785 fans turned out to witness the spectacle. Hank Sauer of the Chicago Cubs provided the victory margin for the National league team with a two-run homer. Jackie Robinson of the Brooklyn Dodgers also homered for the National league. Bob Rush of the Chicago Cubs was given credit for the victory, while the losing pitcher was Bob Lemon of the Cleveland Indians. Bobby Shantz of the Philadelphia Athletics turned in a great performance in the one inning he pitched by striking out the three men he faced, Carroll (Whitey) Lockman of the New York Giants, Jackie Robinson of the Dodgers and Stan Musial of the St. Louis Cardinals. The game was delayed because of rain and after five innings of play were completed the proceedings were held up. After a 56-min. delay the umpires were forced to call the game. It was the seventh victory in the series for the National leaguers, who had lost 12 of the annual meetings.

Major League Races.—The Cleveland Indians in the American league and the New York Giants in the National league were the preseason favourites of many observers to take the pennants in their respective leagues. The Indians' pitching staff came through with three 20-games-plus winners and the hitting was good enough, but the infield play of the club was not of high enough calibre to capture the pennant flag. The New York Yankees were without the services of the retired Joe DiMaggio and it was the general belief that they could not repeat in 1952. However, on Aug. 23 the Yankees defeated the Indians to take the lead until the race was over. The Chicago White Sox were a threat for some time and the Washington Senators and Philadelphia Athletics had a knack of winning so-called big games from the leaders. In the National league, the New York Giants appeared to be stronger than the 1951 edition of their team. Their pitching looked better than in the preceding year. The Brooklyn Dodgers, however, were not to be denied. Things did not look good for the Flatbush team when they lost Don Newcombe, their 20-game winner of 1951, to the armed forces. The Giants on the other hand were hit with two crippling blows. Monte Irvin suffered a compound fracture of his right ankle during the exhibition season, and Willie Mays, the spark plug of 1951, was called to the army. The Dodgers moved into undisputed possession of first place on June 1 and never gave up the lead throughout the remainder of the season. In both leagues it was a two-club race with the Yankees outlasting the Indians and the Dodgers proving too much for the Giants. The St. Louis Cardinals made a late season move for the title in the senior circuit, but their surge was too late to prove effective.

Final Major League Standings, 1952

National league				American league			
Club	Won	Lost	Pct.	Club	Won	Lost	Pct.
Brooklyn	96	57	.627	New York	95	59	.617
New York	92	62	.597	Cleveland	93	61	.604
St. Louis	88	66	.571	Chicago	81	73	.526
Philadelphia . . .	87	67	.565	Philadelphia . . .	79	75	.513
Chicago	77	77	.500	Washington . . .	78	76	.506
Cincinnati	69	85	.448	Boston	76	78	.494
Boston	64	89	.418	St. Louis	64	90	.416
Pittsburgh	42	112	.273	Detroit	50	104	.325

World Series.—The 1952 world series was a give-and-take



MICKEY MANTLE of the New York Yankees watching the ball sail over the head of third baseman Bobby Morgan of the Brooklyn Dodgers. The ball was relayed by the shortstop after Mantle tripled to centre field in the fourth game of the 1952 world series. The Yankees won the game 2-0, and took the series, four games to three

battle right down to the last out in the seventh and final game, with the New York Yankees coming home with their fourth straight series victory. It was the 19th series in which the Yankees had participated and it was the 15th time they had triumphed in the classic. Rookie Joe Black went to the mound in the first game for the Dodgers, the second relief pitcher in the history of the series to start in the opening game. His foe was Allie Reynolds of the Yanks. Black held the New York team to six hits as the Dodgers walked away with the opener by a 4-2 score. In the second game, Casey Stengel nominated Vic Raschi to tie the series. Raschi came through, giving up one run on only three hits as the Yankees won 7-1. Carl Erskine started for the Dodgers and suffered the loss. Game number three saw the scene shift from Ebbet's field to Yankee stadium. Once again the Dodgers took the lead when they scored a 5-3 win. Elwin (Preacher) Roe started for the Dodgers and went all the way, giving up six hits to gain the decision. Ed Lopat had been Casey Stengel's starting choice but the loser did not finish the game. The nip-and-tuck battle followed the pattern in the fourth game as the Yankees again tied up the series. It was Allie Reynolds against Joe Black on the mound as it had been in the first game. This time, however, Reynolds turned the Dodgers back as he racked up the only shutout of the series and the Yankees won, 2-0. Johnny Mize clouted his second home run in as many days in the game.

Perhaps the greatest game of the series was the fifth contest. The Dodgers won this one, 6-5, in 11 innings to take the lead

for the third time. Carl Erskine started for the Dodgers and went all the way. Although he was rapped for five runs in the fifth inning, he retired 19 in a row after that, to gain credit for the game. Ewell (The Whip) Blackwell started for the Yankees but was taken out for a pinch-hitter in the big Yankee fifth inning. The spree put the Yankees ahead 5-4 at the time. Edwin (Duke) Snider had homered in the top of the fifth with a man on to push the Brooklyn lead to 4-0 when the Yanks came to bat. The biggest blow of the Yank uprising was Johnny Mize's three-run homer. It was Mize's 2,000th hit in the majors, including world series and All Star games. Duke Snider came through with a run-producing single in the seventh to tie the game at 5-5. The two teams battled through the eighth, ninth and tenth innings unable to score. In the 11th, Snider (who was the hero of the Brooklyn cause throughout the series) sent a double to right-centre to give Brooklyn the deciding one-run edge. The losing pitcher was Johnny Sain. Back at Ebbets field, the New York team tied the series for the third time by edging Brooklyn, 3-2. Vic Raschi was the winner although he had to have assistance from Allie Reynolds in the eighth inning. In the seventh and final game, Ed Lopat was the starting pitcher for the Yankees while Joe Black was Brooklyn's choice. The Yankees won, 4-2, and Black was charged with the loss. Allie Reynolds, who came into the game in the fourth inning for Lopat, was the winner. Vic Raschi was called in to help Reynolds and finally Bob Kuzava hurled no-hit, no-run ball for two and two-thirds innings to save the game for Reynolds and give the Yankees their fourth straight world crown.

A total of 340,906 fans attended the seven games, and receipts totalled \$1,622,753.01. Of the total, the players' share was \$500,003.28. Each Yank full share amounted to \$5,982.65, while the

losing Dodgers' full shares were each worth \$4,200.64.

Hall of Fame.—Two new members were elected to baseball's Hall of Fame at Cooperstown, N.Y. Paul (Big Poison) Waner, who had starred for the Pittsburgh Pirates, and Harry Heilmann, an all-time great of the Detroit Tigers.

Attendance.—Attendance at major league parks fell off approximately 1,500,000 during 1952 compared with the mark set in 1951. The New York Yankees suffered the biggest drop. The St. Louis Browns showed the largest increase.

American League		1952	1951
Club			
New York		1,629,665	1,950,107
Cleveland		1,444,607	1,704,984
Chicago		1,231,675	1,328,234
Boston		1,115,750	1,312,282
Detroit		1,026,846	1,132,641
Washington		699,457	695,167
Philadelphia		627,100	465,469
St. Louis		518,796	293,790
Total		8,293,896	8,882,674

National League		1952	1951
Club			
Brooklyn		1,088,600	1,282,628
Chicago		1,033,839	894,415
New York		985,011	1,059,539
St. Louis		913,222	1,013,429
Philadelphia		755,417	937,658
Pittsburgh		686,674	980,590
Cincinnati		607,681	588,268
Boston		281,278	487,475
Total		6,351,722	7,244,002

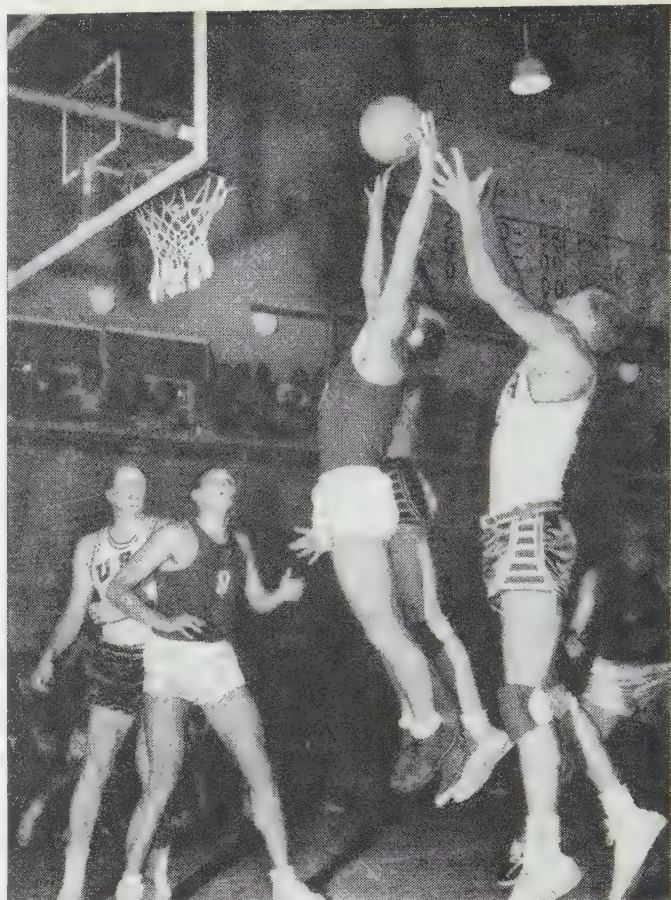
The Minor Leagues.—The pennant and play-off winners in the 43 minor leagues operating in 1952 are given in the table following. Rochester of the International league defeated Kansas City of the American association four games to three in the little world series. The Dixie series was won by Memphis of the Southern association over Shreveport, Texas league, four games to two.

Final Minor 1952 Winners

Class	League	Pennant Winner	Play-off Winner
Open	Pacific Coast	Hollywood (Calif.)	(no play-offs)
AAA	American association	Milwaukee (Wis.)	Kansas City (Mo.)
	International	Montreal (Que.)	Rochester (N.Y.)
AA	Southern	Chattanooga (Tenn.)	Memphis (Tenn.)
	Texas	Dallas (Tex.)	Shreveport (La.)
A	Eastern	Albany (N.Y.)	Binghamton (N.Y.)
	Sally	Columbia (S.C.)	Montgomery (Ala.)
	Western	Denver (Colo.)	Denver
	Western International	Victoria (B.C.)	(no play-offs)
B	Big State	Temple (Tex.)	Tyler (Tex.)
	Carolina	Raleigh (N.C.)	Reidsville (N.C.)
	Florida International	Miami (Fla.)	Miami
	Gulf Coast	Port Arthur (Tex.)	Harlingen (Tex.)
	Inter-State	Hagerstown (Md.)	Hagerstown
	*Piedmont	Norfolk (Va.)	Richmond (Va.)
	Three-I	Evansville (Ind.)	Terre Haute (Ind.)
	Tri-State	Gastonia (N.C.)	Charlotte (N.C.)
C	Arizona-Texas	Juarez (Mex.)	(no play-offs)
	California	Fresno (Calif.)	Fresno
	Cotton States	Meridian (Miss.)	Meridian
	Evangeline	Crowley (La.)	Crowley
	Longhorn	Odesa (Tex.)	Midland (Tex.)
	Northern	Superior (Wis.)	Superior
	Pioneer	Pocatello (Ida.)	Idaho Falls (Ida.)
	Provincial	St. Hyacinthe (Que.)	Quebec (Que.)
	Southwest International	Tijuana (Mex.)	(no play-offs)
	*Western association	Joplin (Mo.)	(no play-offs)
	West Texas-New Mexico	Clovis (N.M.)	Amarillo (Tex.)
D	Alabama-Florida	Ozark (Ala.)	Ozark
	Appalachian	Johnson City (Tenn.)	Welch (W.Va.)
	Coastal Plain	Kinston (N.C.)	Edenton (N.C.)
	Florida State	Deland (Fla.)	Palatka (Fla.)
	Georgia-Florida	Valdosta (Ga.)	Albany (Ga.)
	Georgia State	Eastman (Ga.)	Vidalia (Ga.)
	K-O-M	Iola (Kan.)	Miami (Okla.)
	Kitty	Fulton (Ky.)	Madisonville (Ky.)
	Mississippi-Ohio Valley	Danville (Ill.)	Decatur (Ill.)
	Mountain States	Hazard (Ky.)	Harlan (Ky.)
	North Carolina State	High Point	
		Thomasville (N.C.)	Mooresville (N.C.)
	Pony	Hamilton (Ont.)	Jamestown (N.Y.)
	Sooner State	McAlester (Okla.)	McAlester
	Western Carolina	Lincoln (N.C.)	Shelby (N.C.)
	Wisconsin State	Sheboygan (Wis.)	(no play-offs)

*Second-half standings.

(J. BE.)



SOVIET (dark shirt) and U.S. players jumping for the ball during the Olympic basketball match on July 28, 1952, at Helsinki, Fin. The U.S. team defeated the Soviets, 86-58

had captured the Big Seven conference crown, gained the laurels by routing St. John's of Brooklyn, N.Y., 80-63, before 11,700 fans. Clyde Lovellette contributed 33 points to the winners' total, which was a record high for a N.C.A.A. final. The University of Illinois, Urbana, which qualified for the tournament by annexing the Western conference championship, turned back the University of Santa Clara, Calif., 67-64, in the consolation game for third place.

St. John's scored one of the season's major upsets on its way to the final round, winning the right to represent the east in the play-offs by toppling the University of Kentucky, Lexington, which had run up 23 consecutive victories, by a score of 64-57 before 11,200 spectators at Raleigh, N.C.

The Kansas Jayhawks qualified for the trip to Seattle by halting St. Louis university, 74-55, in their regional final at Kansas City, Mo. Illinois set back a good Duquesne university team, 74-68, at Chicago, Ill., to advance, while Santa Clara qualified by surviving the Pacific coast sectional eliminations with the University of California at Los Angeles, the University of Wyoming and Oklahoma City university.

Kansas continued its sparkling play in the Olympic trials. The Jayhawks beat Southwest Missouri State college, Springfield, Mo., champions of the National Association of Intercollegiate Basketball, 92-65, while the Phillips 66 Oilers of Bartlesville, Okla., eliminated another Amateur Athletic union rival, the Fibber McGee and Molly quintet of Hollywood, Calif., 50-48, in the quarter-finals played at Kansas City. Meanwhile, the Caterpillar Diesels of Peoria, Ill., the A.A.U. rulers, defeated the United States Air Force All-Stars of Tinker field, Oklahoma City, Okla., 71-67, and La Salle college of Philadelphia, Pa., ousted St. John's, 71-62, in the preliminary trials in New York city. Kansas and the Caterpillars then fought their way to the

Basketball. The National Collegiate Athletic association basketball championships proved one of the highlights of the 1951-52 season, and when the long tourney at Seattle, Wash., had ended, the University of Kansas, Lawrence, was perched on top as the titleholder. Kansas, which previously

final with victories at New York's Madison Square Garden. A crowd of 11,179 saw the Jayhawks conquer La Salle, 70-65, as Lovellette scored 40 points. Kansas rallied from a 38-25 deficit to gain its victory. The Peoria quintet then subdued the Phillips 66 Oilers, 64-50. The Olympic final proved one of the season's top games, with Peoria turning back Kansas, 62-60, on a field goal in the last 50 seconds by Howie Williams, former Purdue ace. The Oilers routed La Salle, 92-58, in the consolation final.

Seven members of the Kansas team, led by Lovellette, five of the Caterpillars and two of the Oilers were among those selected for the United States Olympic squad.

Earlier in the campaign La Salle had taken honours in the national invitation tournament at Madison Square Garden, winning the big prize with a 75-64 triumph over the University of Dayton in the last round as 18,485 looked on. St. Bonaventure university furnished a surprise by upsetting Duquesne, 48-31, in the consolation final.

The Caterpillar Diesels captured the national Amateur Athletic union championship by upsetting the Phillips 66 Oilers, 66-53, in the final of the tournament at Denver, Colo. Howie Williams paced the victors with 20 points. The Hanes Hosiery team of Winston-Salem, N.C., retained the women's A.A.U. title by defeating the A.I.C. sextet of Davenport, Ia., 49-23, at Wichita, Kan.

Other major champions included Princeton, Eastern Intercollegiate league; U.C.L.A., Pacific coast; Kentucky, Southeastern; North Carolina State, Southern; Illinois, Western; St. Louis, Missouri valley; Texas Christian, Southwest; Kansas, Big Seven; Wyoming, Skyline Six; Montana State and Colorado State (tied), Rocky Mountain; New Mexico A. & M. and West Texas State (tied), Border; Marquette, National Catholic Invitation; Southwest Missouri State, National Association Intercollegiate (N.A.I.B.); Virginia Union, Central A.A. tournament; West Virginia State, Central A.A. regular season; Western Ontario, Canadian intercollegiate.

Kentucky, Southeastern champion for the 13th time, was selected as the top college five of the country in both the Associated Press and United Press polls, prior to the season's late tournaments. The Wildcats' worst setback came on Aug. 11, 1952, when they were suspended from Southeastern conference basketball for one year, the league ruling two Kentucky players ineligible because of professionalism.

The Minneapolis Lakers won professional honours by conquering the New York Knickerbockers in the finals of the National Basketball association play-offs, four games to three. The Lakers took the seventh and deciding contest on their home court, 82-65. The Wilkes-Barre (Pa.) Barons triumphed in the American league. (See also OLYMPIC GAMES.) (T. V. H.)

Basutoland: see BRITISH SOUTH AFRICAN TERRITORIES.

Batista, Fulgencio (1901—), Cuban army officer and political leader, was born on Jan. 16 at Banes, Oriente province, Cuba, the son of a truck gardener. He had little formal schooling and as a youth worked as a mechanic and tailor's apprentice. He joined the Cuban army in 1921 but remained an obscure enlisted man until he began to take part in the various uprisings of 1931-33 against the dictatorship of Gerardo Machado. With Machado's final downfall in 1933, Batista, still an army sergeant, rose to a position of national power almost overnight. The new revolutionary government appointed him army chief of staff, and in this position Batista became the virtual dictator of Cuba for the next seven years. In Dec. 1939 he announced that he would be a candidate in the presidential election the following year. His opponent,

Ramón Grau San Martín, was easily defeated and Batista was inaugurated on Oct. 10, 1940. During World War II he co-operated fully with the United States and other western powers, declaring war on Japan Dec. 9, 1941, and on Germany and Italy three days later. In June 1944 his hand-picked candidate to succeed him, Carlos Saladrigas y Zayas, was defeated by Grau, and Batista went into political retirement.

In a surprise coup staged March 10, 1952, Batista regained absolute power in Cuba by overthrowing the government of Pres. Carlos Prío Socarrás, whom he accused of corruption and dictatorial tendencies. Batista proclaimed himself chief of state and prime minister, suspended the 1940 constitution and cancelled the presidential elections which had been scheduled for June 1.

Batista was made provisional president April 4 and proceeded thereafter to strengthen his political grip on the country.

Ba U (1887—), Burmese statesman and lawyer, was born on May 26 and was educated at the American Baptist Mission school, Bassein, Burma, at the Government Collegiate school, Rangoon, at Rangoon college and at Trinity hall, Cambridge. He was called to the English bar in 1913, and in the same year was enrolled as an advocate of the chief court of Lower Burma. In 1922 he became the first full-time public prosecutor of Rangoon. After a period as a district and sessions judge at Pyapon (1923-30), he was appointed to the bench of the high court, Rangoon, and continued to hold office in that court until 1948; he was noted for his efforts to safeguard the interests of his fellow countrymen during the Japanese occupation.

Ba U took a prominent part in the drafting of the constitution of the independent union of Burma, and when the republic was proclaimed on Jan. 4, 1948, he became its first chief justice.

At a joint session of the Burmese parliament on March 12, 1952, Ba U was elected to succeed the first president of the union, Sao Shwe Thaik, in that office.

Bauxite: see MINERAL AND METAL PRODUCTION AND PRICES.

Bechuanaland Protectorate: see BRITISH SOUTH AFRICAN TERRITORIES.

Beef: see MEAT.

Beer: see BREWING AND BEER.

Belgian Colonial Empire. The Belgian colonial empire consists of the colony of the Congo in central Africa and the adjacent trust territory of Ruanda-Urundi administered with the Congo. Total area: about 925,907 sq.mi. Total pop. (1951 est.): 15,237,000. Areas, populations, capital towns, status and governors of the separate territories are given in the table.

History.—On Jan. 1, 1952, Léo Pétillon succeeded Eugène Jungers as governor general. To emphasize that economic activity of the Belgian Congo and of the trust territory Ruanda-Urundi was intended for their benefit, the Belgian government created independent banks for the issue of bank notes. The ten-year plan for the development of natural resources was ratified by the Belgian parliament on May 27, and the minister of the colonies was authorized to affect an extra amount of

Country	Area (In sq. mi.)	Population (1951 est.)	Capital	Status	Governor
Belgian Congo	904,991	11,332,000 (incl. 66,078 Europeans)	Léopoldville	Colony	Léo Pétillon, governor general
Ruanda-Urundi	20,916	3,905,000 (incl. 4,461 Europeans)	Usumbura*	{ Sultanates, trust terri- tory }	Claeys-Bouvaert, governor

*Principal town of Ruanda, Kigali; principal town of Urundi, Kitega.

20,000,000 fr. in 1952 for its fulfilment. Hydroelectric undertakings were pursued in the Katanga province and the linking of the Katanga and northern Rhodesian power stations was prepared. Work was also going ahead at the military base at Kamina in the Lualaba district for the defense of the uranium fields and the training of Belgian air force, airborne units and commandos. The defense of the mouth of the Congo river in the Atlantic ocean was organized at Banana, where a jetty for disembarkation and barracks were built. The monthly average of Belgian exports to its overseas territories during the first half year of 1952 amounted to 578,500,000 fr. compared with 450,000,000 fr. during the corresponding period in 1951; the monthly average for Belgian imports from its overseas territories was 822,100,000 fr. in 1952 and 836,000,000 fr. in 1951. (M. H. St.)

Finance.—Budget: Congo (1951 est.) revenue 5,125,500,000 fr., expenditure 4,963,500,000 fr.; (1952 est.) revenue 6,473,200,000 fr., expenditure 6,259,100,000 fr. Ruanda-Urundi (1951 est.): revenue 321,300,000 fr., expenditure 363,900,000 fr. Monetary unit: Congolese franc, nominally an independent currency, actually at par with the Belgian franc, and with an exchange rate (Aug. 1952) of 50.38 fr. to the U.S. dollar.

Foreign Trade.—Congo and Ruanda-Urundi: (1950) imports, 10,962,400,000 fr., exports 13,378,400,000 fr.; (1951) imports 15,419,600,000 fr., exports 19,876,900,000 fr.

Transport and Communications.—Congo and Ruanda-Urundi: Roads (1950) 71,420 mi. Railways (1950) 2,896 mi. Waterways (1949) 7,480 mi. Licensed motor vehicles (Congo only, Dec. 1951): cars 13,540; commercial vehicles 16,960.

Agriculture.—Principal products, Congo and Ruanda-Urundi (1950, metric tons): palm oil (exports) 132,039; palm kernels (exports) 85,772; maize 336,634; timber (exports) 105,233; (1951, metric tons) gum copal (exports) 14,227; cotton 45,700; coffee 35,393.

Mineral Production.—Congo and Ruanda-Urundi (1951, metric tons if not otherwise stated): copper, metal 191,959; tin, metal 16,947; cobalt 5,715; gold (fine ounces) 350,000; silver 118; (1950, metric tons if not otherwise stated) manganese ore 16,990; tungsten 93; cadmium (kg.) 29; zinc concentrates 129,869; coal 159,967; diamonds (carats) 10,147,571.

Belgian Congo: *see* BELGIAN COLONIAL EMPIRE.

Belgium. A kingdom of western Europe, Belgium is bounded southwest by France, north by the Netherlands and east by Germany and Luxembourg. Area: 11,783 sq.mi. Pop.: (1947 census) 8,512,195; (1951 est.) 8,678,000. Language (1930): Flemish (Dutch) 42.92%, French 37.56%, German 0.85%, Flemish and French 12.92%, German and French 0.83%. Religion: mainly Roman Catholic. Chief towns (pop., 1948 est.; first figure including suburbs, second figure commune only): Brussels (cap., 1,296,687; 185,112); Antwerp (chief port, 794,280; 266,636); Liège (573,176; 156,664); Charleroi (445,229; 26,262); Ghent (442,792; 166,797); Namur (215,069; 31,637); Bruges (200,850; 52,984). Ruler, King Baudouin I; prime ministers in 1952: Joseph Pholien and (from Jan. 15) Jean van Houtte.

History.—King Baudouin, who on July 17, 1951, became the fifth king of the Belgians after his father's abdication, made the first *joyeuse entrée* of his reign on May 24, 1952, by visiting Antwerp. Afterward he made his *entrée* at Liège, Ghent and Namur and it was decided that the tradition of visiting the principal town of each province should be continued the next year. The *joyeuse entrée* meant recognition of the freedom of the citizen by the highest dignitary and enabled the expression of the people's loyalty. Everywhere there was an enthusiastic reception although the division of public opinion, which was acute when King Leopold returned, was still smouldering. It flared up in Feb. 1952 when confusion took place between the palace services and the prime minister's office on the announcement that the king, who since his accession to the throne had paid no official visits abroad, had delegated his brother Prince Albert to attend the funeral of King George VI. In the house of representatives the opposition declared that the young king was not receiving adequate advice and the government was defeated on a vote on a motion of regrets.

Political.—In Jan. 1952 Joseph Pholien, the prime minister,

was compelled by his own party, the Christian Social party, to resign and Jean van Houtte became his successor. The Christian Social party, which retained a majority of 4 in the house and of 7 in the senate, felt that some ministers who had been dismissed because of their lukewarm attitude in defending King Leopold during the 1950 royal crisis might return to office to consolidate the party's unity. Changes in the economic policy were also urged. Only one former minister was reinstated, Jean Duvieusart, who became minister of economic affairs. In August, Albert Coppe, minister of reconstruction, resigned to become vice-president of the High Authority of the European Coal and Steel Community and was not replaced. In September, Pholien, who had been kept in the cabinet as minister of justice, was forced to resign because of violent protests against the reprieve of a Belgian collaborator who had been sentenced to death for cruelty in a concentration camp.

The government faced another storm in July, when disorders occurred in several Walloon battalions and the Socialist trade unions organized strikes to protest the two-year period of military service. The other member countries of the European Defense Community, in August at the Paris conference, declined to agree on a uniform term of service. The government, therefore, decided to release the Belgian conscripts after 21 months but the act providing for a two-year period was not altered and Paul van Zeeland, the minister of foreign affairs, stated that the government remained convinced of the necessity of a general 24 months' service for the organization of an adequate Atlantic defense.

Provisions of the North Atlantic treaty, the Schuman plan, the European Defense Community and the proceedings at the Consultative assembly of the Council of Europe at Strasbourg raised the problem of a revision of the definition of national sovereignty in the constitution. The government appointed a commission of members of parliament and experts in international affairs to study the question. Two Walloon Socialists introduced in the house a bill for a reorganization of Belgium on a federal basis. The committee of the house of representatives, during the preliminary examination, rejected the proposal but felt that it nevertheless ought to be discussed in public meeting; but the opinion gained ground that revision of the constitution was needed for securing the political, language and economic interests of Walloons and Flemings in a united Belgium.

International.—The charter of the United Nations, the Brussels treaty and the North Atlantic treaty further governed Belgium's foreign policy. The determination to promote international co-operation was reaffirmed when parliament ratified the treaty on the Schuman plan. On European co-operation the government and most of the political leaders were anxious to secure British partnership. The so-called small Europe (France, Germany, Italy, the Netherlands, Luxembourg and Belgium) was cautiously approached. As was pointed out by Paul Struye, the chairman of the senate, Belgium in its relations with the great powers always felt that understanding with Great Britain was an essential element of equilibrium. Completion of the economic union between the Netherlands, Belgium and Luxembourg was delayed by the prolonged ministerial crisis in the Netherlands following general elections there. Meanwhile, serious objections were raised in Belgian industrial circles to abnormal competition on the Belgian market resulting from the Netherlands policy of subsidies and differences in wages. Talks took place between industrialists of the countries and a conference of ministers met on Oct. 7.

Economic and Financial.—The index of industrial production (1936-38=100) stood at 143.4 in Jan. 1952, compared with 138.2 in Jan. 1951 and 122 in Jan. 1950. Activity decreased in

several industries, and in February cotton-weaving mills began to work part time. Van Houtte stated that there were 50,000 permanently unemployed because of the general economic situation, and 25,000 because of structural factors. He announced measures to promote new industries in the affected areas and to prospect the American markets. Difficulties resulting from the Belgian creditor position with the European Payments union were removed in June at the meeting of the Council of Ministers in Paris, when Belgium agreed to buy arms from Great Britain and France and was promised substantial U.S. "offshore" purchases. (See also EUROPEAN UNION; NORTH ATLANTIC TREATY ORGANIZATION.) (M. H. St.)

Education.—Schools (Dec. 31, 1950): elementary, infant 4,072, pupils 297,089; primary 8,732, pupils 769,968; primary, adult 282, pupils 4,054; secondary, state, lower grade 278, pupils 50,318; secondary, state, higher grade 120, pupils 57,095; Catholic 449, pupils 67,093. Teachers' training colleges: infant 39, students 2,205; elementary 81, students 9,442; secondary 39, students 1,906. Universities (1949-50) 4, students 16,425.

Finance and Banking.—Budget: (1951) revenue 73,400,000,000 fr., expenditure 68,300,000,000 fr.; (1952 est.) balanced at 70,500,000,000 fr. National debt (Aug. 1951) 246,970,000,000 fr. Currency circulation (June 1952) 100,600,000,000 fr. Gold and foreign exchange (Aug. 1952) U.S. \$1,104,000,000. Bank deposits (June 1952) 70,100,000,000 fr. Monetary unit: Belgian franc, with an exchange rate (Aug. 1952) of 139.39 fr. to the pound and 50.38 fr. to the U.S. dollar.

Foreign Trade.—(Belgo-Luxembourg Economic union, 1951): imports 127,200,000,000 fr., exports 132,564,000,000 fr. Main sources of imports (1951): U.S. 16%; the Netherlands 11%; France 10%; U.K. 8%. Main destinations of exports: the Netherlands 18%; U.K. 10%; France 9%; U.S. 6%. Main imports: machinery and vehicles 12%; raw wool and cotton 11%; grains 6%; coal, petroleum and products 8%. Main exports: iron, steel and manufactures 21%; thread and fabric 13%; nonferrous metals and manufactures 10%; machinery and vehicles 9%.

Transport and Communications.—Roads (1950): 6,754 mi. Licensed motor vehicles (Dec. 1951): cars 294,797, commercial vehicles 151,480. Railways (1951): 3,130 mi.; passenger-miles 7,300,000,000; goods, ton-miles 8,000,000,000. Shipping: (July 1951) merchant vessels of 100 gross tons and over 203; total tonnage 493,432. Navigable waterways 969 mi. Air transport (1951): passenger-miles 192,000,000; cargo ton-miles 12,085,178. Telephones (1951): 687,012. Radio receiving sets (1950): 1,548,205.

Agriculture and Fisheries.—Main crops (metric tons, 1951): wheat 512,000; barley 270,000; oats 438,000; rye 204,000; potatoes 2,016,000; sugar, raw value 267,000; linseed 20,000; rapeseed 5,000. Livestock (1951): cattle 15,000,000; sheep 124,000; pigs 1,263,000; horses 242,000; goats 55,000; poultry 15,000,000. Dairy production (1950): butter 73,000 metric tons; milk 3,452,000,000 litres. Meat production (1951) 302,000 metric tons. Fisheries (1951): total catch 56,000 metric tons.

Industry.—Industrial establishments (Jan. 1948): 248,128; persons employed 1,000,010. Fuel and power (1951): coal 29,664,000 metric tons; manufactured gas 1,728,000,000 cu.m.; electricity 9,492,000,000 kw.hr. Raw materials (metric tons, 1951): pig iron 4,848,000; steel ingots and castings 5,004,000; copper, smelter 142,000; lead 70,000; zinc 200,000; tin 8,600; aluminum 1,400. Manufactured goods (metric tons, 1951): cement 4,392,000; woven cotton fabrics 79,000; cotton yarn 106,000; wool yarn 33,000; rayon filament yarn 12,400; paper and cardboard 325,900.

See Vicomte Terlinden, *Impérialisme et Equilibre* (Brussels, 1952); Pierre Wigny, *Droit constitutionnel* (Brussels, 1952).

Benefactions: see DONATIONS AND BEQUESTS.

Benelux: see BELGIUM; LUXEMBOURG; NETHERLANDS.

Benson, Ezra Taft (1899—), U.S. marketing specialist and government official, was born on Aug. 4 in Whitney, Ida. He attended Utah State Agricultural college, Logan, Utah (1818-21) and received a bachelor of science degree from Brigham Young university, Provo, Utah, in 1926. In 1927 he was granted a master of science degree from Iowa State college, and he spent the next two years farming in southern Idaho. He was employed as an agricultural agent by the University of Idaho Extension service until 1930 when he was placed in charge of economics and marketing work for the state of Idaho. He held this position until 1937 when he took a year's graduate study at the University of California, Berkeley. He was executive secretary of the National Council on Farmer Cooperatives (1939-44), and was president of the Washington Stake, Church of Jesus Christ Latter Day Saints in Washington, D.C. (1940-44). He was appointed vice-chairman of the board of trustees of the American Institute of Cooperation in 1943. He was against federal food subsidies and believed that they were a cause rather than a preventive of inflation. The farmers regarded

him as a conservative because of his attitude toward federal assistance to agriculture. He was one of twelve members of the council of the Mormon Church. He was selected on Nov. 24, 1952, in New York city to serve as agriculture secretary in the cabinet of President-elect Dwight D. Eisenhower.

Benton, William (1900—), U.S. senator and publisher, Minn. He was graduated from Yale university in 1921. In 1929, in partnership with Chester Bowles, he founded the advertising agency of Benton and Bowles.

Benton retired from the agency in 1936, and in 1937 became vice-president of The University of Chicago, on a part-time basis. At his instance the university acquired Encyclopædia Britannica, Inc., in 1943. He financed the company, became chairman of its board and shared its ownership with the university. He launched the company into the classroom motion-picture field and served as chairman of Encyclopædia Britannica Films Inc. During this period, in collaboration with Paul Hoffman, he helped to found the Committee for Economic Development, and he was active in inter-American affairs.

Benton was appointed U.S. assistant secretary of state by Pres. Harry S. Truman on Aug. 31, 1945, and served until Sept. 30, 1947. He developed the country's first peacetime program of international information and educational exchange and took responsibility for U.S. participation in the United Nations Educational, Scientific and Cultural organization.

In Dec. 1949 Benton was appointed U.S. senator from Connecticut to succeed Raymond E. Baldwin, resigned; in the Connecticut election of Nov. 7, 1950, he was returned to the senate for two more years. His first two years in the senate were marked by his campaign in behalf of a "Marshall Plan of Ideas," by his vigorous espousal of the Hoover commission recommendations on government reorganization and by his activities on behalf of small business. In 1951 he secured the adoption of the "Benton amendment" to the Mutual Security act, which instructs the administrator of that program to oppose cartels and Communist-dominated unions abroad; made proposals to strengthen anticorruption laws; and introduced a resolution calling for expulsion of Sen. Joseph McCarthy of Wisconsin.

He was the Democratic candidate for re-election to the senate in 1952, but was defeated at the polls.

Bequests, Philanthropic: see DONATIONS AND BEQUESTS.

Berlin. Capital of the German reich from 1871 to 1945, Berlin was still by 1952 the largest city of Germany. Area: 344 sq.mi. Pop.: (1939 census) 4,321,500; (1950 est.) 3,336,475. From June 6, 1945, Berlin was administered by an inter-Allied government authority consisting of the commandants of the four sectors of Berlin. After June 24, 1948, when the soviet commandant proclaimed the dissolution of the authority, Berlin was in fact divided into two opposing administrations. By Dec. 31, 1951, the three western sectors (area, 185.4 sq.mi.; pop., 1950 census, 2,146,952) were under the authority of the three following Allied commandants: Great Britain, Maj. Gen. C. F. G. Coleman; United States, Brig. Gen. Lemuel Mathewson; France, Gen. Pierre Carolet. In the soviet sector (area, 155.8 sq.mi., pop., 1950 est., 1,189,523) the civil administrator was Serghey S. Dienghin. There were also two rival German city governments and two lord majors. Ernst Reuter was *Oberbürgermeister* of the three western sectors, appointed by an elected city assembly; Friedrich Ebert was *Oberbürgermeister* of the soviet sector appointed by a meeting summoned by the Sozialistische (Communist) Einheitspartei.

History.—A peaceful end to the separation of west and east



TEEN-AGERS OF BERLIN helping to clear rubble from the streets, a compulsory duty in the soviet sector of the city

Berlin seemed as far off in 1952 as the reunification of Germany, and probably it was, since both developments depended upon Allied-soviet agreement. The soviet authorities still refrained from overt steps leading to official incorporation of the whole city within their domination; but obstruction and economic pressure were used to the utmost to weaken democratic west Berlin.

Interference with traffic on the international *Autobahn* from west Berlin to western Germany continued intermittently, and was aimed at undermining west Berlin's economic existence. The U.S. and British military patrols were prevented from using this *Autobahn*, leaving the three Allied commandants unable to do much more than protest. One of the few stands taken by the western Allies against soviet actions was when British troops (June 3-10) prevented free access to the soviet radio station in the British sector.

Isolation of west Berlin, both from the eastern soviet sector and from the German Democratic Republic was carried still further. Many west Berliners lost small holdings or allotments across the zonal border of the Democratic Republic; those among them who worked in the Communist-controlled areas were dismissed from their jobs unless they agreed to transfer their domiciles to these areas; and from June 3 both west Berliners and western Germans needed special permits to enter either the soviet sector or the Democratic Republic.

There were many kidnappings of Germans in west Berlin by agents under soviet control, but world attention was attracted to the case of Walter Linse, a member of the League of Free Jurists (July 8). As this occurred in the U.S. sector, both John J. McCloy, the high commissioner, and his successor Walter J. Donnelly protested to Gen. Vasili Chuikov, chairman of the Soviet Control commission, but without success.

West Berlin's importance as a bulwark of democracy behind the "iron curtain" was indicated by official visits from both the British foreign secretary and the U.S. secretary of state. Anthony Eden (May 29), while there, opened the English garden, and Dean Acheson laid the foundation stone of the U.S. Memorial library. Both stressed the guarantees of the western powers to defend west Berlin.

Politically, west Berlin continued to be governed by the coalition which resulted from the 1951 elections. But since the S.P.D. (Social Democratic party), though the largest single

party, failed to win an over-all majority, disagreements among the parties became more marked. The political crisis which threatened in the spring was overcome mainly because solidarity in the face of Communist pressure was essential in such a situation. Reuter was re-elected lord mayor, after a special vote of confidence (April 3).

Economically, west Berlin still faced tremendous difficulties, which largely arose from its situation. Lack of a normal hinterland and the hesitation of private capital from the German Federal Republic or abroad to invest there were serious hindrances to normal development. West Berlin, its leaders stressed, wanted orders not subventions, investments not doles. Unemployment numbered 280,000 (July), but there were still thousands more unregistered. Among the latter were many refugees from the Democratic Republic who fled because of the new suppressive measures being introduced there. Refugees who had crossed over (by Aug. 31) numbered about 53,000. They first went to various temporary camps in west Berlin where they were "screened," and the majority were then sent to western Germany. Between February and August, 10,638 youths under 24 years of age escaped to west Berlin to avoid compulsory service in the *Volkspolizei*, of the labour service of the Democratic Republic.

From time to time there were minor clashes on the sector borders between the west Berlin police and members of the Communist youth organization (F.D.J.), but no gigantic rallies in east Berlin similar to those of previous years which threatened to lead to full-scale attempts at upsetting democracy in the western sectors.

In east Berlin, where there had been no communal elections since Oct. 1946, the general political picture remained unchanged. Since practically no distinction was drawn there between executive and legislature, the *Magistrat* in that sector was assumed to be able to read and interpret the needs of the population and therefore issued decrees and orders which bore the stamp of laws.

Relations between the east Berlin *Magistrat* and the government of the Democratic Republic were very close. But as yet the eastern sector and the republic were not officially united. Just as the western occupying powers still had not recognized west Berlin as the 12th *Land* in the German Federal Republic, so the soviet occupation authorities had not given east Berlin the status of a province in the German Democratic Republic.

In both west and east Berlin, a great deal of restoration work

was going on. In the western sectors, the Kurfürstendamm was largely rebuilt, and parks and open spaces laid out. In the eastern section, the wide Stalin Allee (formerly Frankfurter Allee) was now the shop window of Communist achievements for the Germans. Large blocks of flats, in process of erection, were scheduled for occupation by the end of the year.

(J. E. Wt.)

Bermuda. Bermuda is a British colony of about 300 small islands 580 mi. E. of Cape Hatteras, N.C. Area: 21 sq.mi. Pop. (1950 census): 37,403. Chief towns: Hamilton (cap., c. 3,500); St. George's (c. 1,300). Governor in 1952, Lieut. Gen. Sir Alexander Hood.

History.—A Bermudan delegation visited London in May 1952 to discuss the disposal of the royal naval dockyard, closed in March 1951 in Bermuda. No decision was announced. Among suggestions made was the opening of the dockyard area to light industries to counterbalance the existing dependence of the colony upon the tourist trade. Steps taken by the government with a similar object in view were the purchase of a motor fishing boat to carry out a five-year program of commercial fishery research and the hiring of two Danish motor fishing vessels to investigate the possibility of organizing deep-sea fisheries.

An indication of the prosperity of the colony was to be seen in its dollar earnings. A debt at the end of World War II to the sterling dollar pool of \$4,358,000 had increased to \$20,412,000 by the end of 1949; but by mid-1952 this debt had been converted into a surplus of more than \$1,000,000.

Education.—Schools (1951): infant 1 (maintained); primary 19 (1 aided, 18 maintained); secondary 4 (3 independent, 1 aided); vocational 1 (for girls; aided); tridepartmental (preprimary, primary, secondary) 5 (1 independent, 4 aided); bidepartmental (primary, secondary) 1 (aided). Pupils enrolled: primary 6,700; secondary 716; vocational 216.

Finance and Trade.—Monetary unit: Bermuda pound, at par with sterling. Budget (1951): revenue £2,368,262; expenditure £2,076,797. Foreign trade (1951): imports £10,628,280; exports £49,000; re-exports £1,312,707. Principal exports: lilies and lily bulbs. Tourists (1951): 92,066; estimated receipts from tourist industry £8,204,000. (Jo. A. HN.)

Beryllium: see MINERAL AND METAL PRODUCTION AND PRICES.

Best Sellers: see BOOK PUBLISHING.

Betting and Gambling. Statistics would indicate that there was more gambling in the U.S. in 1952 than in previous years. Informed opinion, however, held that actually there was far less gambling.

Other things being equal, there is always much more money bet in an election year, such as 1952. There were the usual large bets on the U.S. presidential election, and, it may be assumed, on congressional, state and local elections. The betting on the presidential election, however, was far less than it was in 1948, when big gamblers lost heavily by betting as much as 20 to 1 on Thomas E. Dewey. In 1952 they did not trust the advance surveys, and while the early odds on Eisenhower were 8 to 5 (which accorded with the several surveys), these odds dropped steadily, to 7 to 5 two weeks before the election; 6 to 5 a week before; and even money the day before.

The Associated Press's annual survey of horse race betting through pari-mutuel machines (legal) showed \$1,939,162,662 bet during 1952, 19% more than in 1951. Attendance at race tracks was 27,261,601, which was 12% more than in 1951. However, it had always been estimated that anywhere from \$5 to \$8 is bet through bookmakers away from the tracks for every dollar bet at the tracks. Far fewer bookmakers were operating, the smaller ones having proved unwilling to expose themselves by registering and paying a \$50 U.S. tax (which went into effect Nov. 1, 1951), but fearful of operating without paying it. This fact was the basis for the estimate of decreased gambling.

Nevada, the only state that licenses nearly every form of

gambling, showed approximately a 10% increase over 1951. Las Vegas, Nev., continued to develop as a combined pleasure resort and gambling centre, the rapidity and scale of its development being comparable to those of Monte Carlo in the 1870s; the most expensive attractions in the theatrical world were brought in to attract moneyed visitors. But Miami, Fla., which had previously (in its season) been the most popular resort for gamblers, saw far less gambling of all sorts, chiefly because of police pressure on bookmakers and gambling rooms; the decrease in gambling there was estimated to be 50% or more.

Basketball, which among athletic games had most appealed to gamblers prior to 1951, continued in their disfavour. Several cases had been exposed in 1951 where college players accepted bribes to play badly; additional cases were exposed in 1952. Betting on football, baseball and boxing was reduced only to the extent that bookmakers were unavailable. (A. H. MD.)

Great Britain.—In consonance with the steady reduction in personal expenditure on luxuries and nonessentials experienced in recent years, 1952 saw a further falling off in the total volume of betting and gambling. There was an increase in the number of unit bets made, but this was more than counteracted by the smaller value of the individual bet. One marked exception to this trend, was, however, betting on football pools, which, despite the heavy impost of 30% levied by way of pool betting duty, showed an increase of both the number of betters and the volume of the pools.

As regards betting on horse racing, on which no impost was levied, the takings of the totalizator showed a fractional increase, but there was a falling off in the volume of betting with bookmakers, with the result that betting on horse racing generally showed a decline over the year. Greyhound racing continued to feel the impact of the pool betting duty of 10% imposed on totalizator takings, and of the licence excise duty of, on the average, about 5%, levied on bookmakers' takings, the joint effect of which resulted in the cessation of totalizator operation on a number of tracks and in a substantial diversion of stake money to the bookmakers. In total, the volume of on-course betting on greyhound racing was roughly maintained at the 1951 figure, with a slight increase in off-course betting.

Whereas the figures of betting with the totalizator (both horse and greyhound), with bookmakers on greyhound tracks, and on football pools, could be given with some exactitude, the volume of business effected with bookmakers on horse racing remained a matter of some surmise. Thus the Royal Commission on Betting, Lotteries and Gaming 1949-51, estimated the turnover at from £195,000,000 to £220,000,000, whereas the churches' committee on gambling placed it as high as £373,000,000. If the mean of these estimates is taken, and an addition of £25,000,000 made for the illicit business carried on by street bookmakers, a total of £315,000,000 is arrived at. This figure being accepted, the total turnover for all classes of betting and gambling in 1952 was about £540,000,000; viz., horse racing £341,000,000; greyhound racing £132,000,000; football pools £62,000,000, and other forms of gambling £5,000,000, which, if the fall in the purchasing power of the pound was considered, represented a considerable drop from the 1951 figure. The personal expenditure on betting and gambling represented less than 1% of the total cost of all items of personal expenditure.

The revenue derived directly by the exchequer from betting dues was about £28,000,000. Indirectly, there was the revenue accruing from postal services, income tax paid by promoters and by the 77,000 full-time and part-time employees of the betting industry, and from entertainment tax, in all aggregating about £14,000,000. Thus, directly and indirectly, the state received a total of more than £42,000,000 in revenue from betting and gambling in 1952.

France.—In France during the same period £44,250,000 were bet with the totalizator, of which £19,750,000 were bet on-course and £24,500,000 at cash betting offices; in total, an increase of 29% on 1951. (J. R. CH.)

Bevan, Aneurin (1897–), British politician, was born at Tredegar, Monm., Eng. After studying at the Central Labour college, London, he threw himself into local politics, first as a member of the Tredegar urban district council and, in 1928 as a county councillor.

He was elected to the house of commons for Ebbw Vale, Monm., in 1929. Throughout World War II he was a bitter and unrestrained critic of Winston Churchill's coalition government. Elected to the Labour party executive in 1944, he headed the poll in the elections to the executive every year from 1946.

As minister of health in Clement Attlee's government of 1945, Bevan was responsible for setting up the national health service as well as having charge of the housing program. He became minister of labour and national service in Jan. 1951, but in April resigned from the government because he disagreed with the scale of rearmament budgeting and with the apportionment of the burden of expenditure among the different social classes.

On Jan. 31, 1952, in a debate in the house of commons, Bevan attacked the government's economic policy as being unrealistic and criticized treasury control. When the new National Health Service bill containing proposed economies of £20,000,000 was formally introduced on Feb. 1, he issued a statement denouncing the bill and claiming "if this is carried into law it means that the free health service is dead." On Feb. 26 he expressed the fear that, to the U.S., the war in Korea was "not a United Nations operation to discipline an act of aggression but an intervention by the United Nations in a long-distance attack on Communism" and that such an attitude, if endorsed by Great Britain, would mean the end of independent British foreign policy. At a meeting in Jarrow on March 16 Bevan alleged that the U.S. was arming Chiang Kai-shek to enable him to resume the civil war in China, and at Dalry, Ayrshire, on June 14, he said that a truce could be secured in Korea immediately if the U.N. informed Communist China that they recognized the Chinese revolution as an accomplished fact.

Bhutan. An Indian-protected state on the borders of Tibet. Area: c. 18,000 sq.mi. Pop. (1951 est.): 300,000, chiefly Bhotias. Language: dialect of Tibetan. Religion: mainly Buddhist. Capital: Punakha. Ruler: Maharaja Jigme Dorji Wangchuk.

History.—A new ruler was installed on Oct. 27, 1952, in this world's least visited and most inaccessible state. The new maharaja succeeded his father Jigme Wangchuk who died on March 30. The accession ceremony took place with much pageantry at Paro, in the western part of the country in the presence of B. Kapur, the Indian political agent at Gangtok, Sikkim. To reach Paro from Gangtok involves a nine-day trek on foot and by pony. In the treaty of Aug. 8, 1949, signed at Darjeeling, Bhutan agreed to follow Indian advice in foreign affairs; India agreed to increase the annual subsidy from Rs. 200,000 to Rs. 500,000 and returned to Bhutan 32.81 sq.mi. of territory known as Dewangiri.

Bicycling: see CYCLING.

Billiards. Willie Hoppe of Drexel Hill, Pa., and Willie Mosconi of Havertown, Pa., retained their world billiard laurels in 1952.

At San Francisco, Calif., after winning five in a row, Hoppe



WILLIE HOPPE demonstrating a three-cushion massé shot at San Francisco, Calif., where he was defending his three-cushion billiards title in 1952. He defeated Kinrey Matsuyama of Japan on March 22, retaining the world championship for the 12th time

was beaten in succession by Ray Kilgore of San Francisco, 50-47, and Joe Procita of Los Angeles, 50-41, and Kinrey Matsuyama of Japan took the lead. Hoppe, after defeating Arthur Rubin of Brooklyn, N.Y., then met Matsuyama in the deciding match. Hoppe beat the Japanese, 50-37, to become champion of the three-cushion world for the 12th time.

Mosconi clinched his 10th pocket championship in 11 years by registering 8 consecutive triumphs. His only setback came at the hands of Irving Crane of Binghamton, N.Y., the runner-up in the final match of the tourney at Boston, Mass.

En route to the title Mosconi established a pair of world records, one a high run of 121 in one inning and the other a low game of two innings. Both marks came in his 150-2 triumph over George Chenier, champion of Canada.

In the three-cushion event, Masako Katsura of Japan, first woman to compete in a world billiard tourney, won four victories in nine contests and seventh place in the field of ten.

Bill Sims of Georgia won the intercollegiate pocket championship and Paul Ridout of Wisconsin the three-cushion title. Dan Fader of Cornell captured straight-rail honours. The events were held at Ohio State university, Columbus.

Telephonic tournaments determined the team champions, with Michigan State first at three cushions, Michigan Normal at straight rail and Wyoming in the pocket division. Minnesota finished ahead in the coed pocket test and Sondra Bilsky of Purdue topped the individual scorers.

Gerald Piccirelli of Worcester, Mass., took the Boys' Clubs of America senior national championship and Robert Legg of Princeton, Ind., successfully defended his junior national crown. The finals were held in New York city. (P. BR.)

Biochemistry. Important chemical investigations were reported in 1952 in two areas of popular interest—viruses and cancer. The work with cancer tissue represented a continuing effort along lines developed over many

years. The chemical studies of virus reproduction, however, were newer. Both of these problems are different aspects of a fundamental problem in biology; *i.e.*, how the cellular processes are controlled to produce a specific molecular structure. The mechanisms which determine whether a normal cell or a cancer cell or even a virus will be produced by a given cell were still unknown. The close interrelationship of the problems of cell reproduction, cancer and viruses was indicated by the fact that viruses had been implicated as the causative agents of some cancer.

Viruses.—Most of the revealing discoveries on viruses had come from work done with a specific group of viruses which attack bacterial cells. These viruses, or bacteriophages, had been isolated in a relatively pure state and found to consist of roughly equal portions of nucleic acid (the desoxyribose type) and protein. There are three notable facts about the composition and structure of these viruses: (1) Electron microscopy revealed that some of these virus particles have a tadpole or spermlike shape. The occurrence of a specific form is remarkable when it is realized that these particles have a diameter of approximately 10^{-4} mm. (2) It was found that the tail and the external coating of the head of these particles are composed of protein, while the nucleic acid is apparently localized within the head. (3) A detailed investigation was made of the composition of the nucleic acid of certain of the *Escherichia coli* bacteriophages. Although the nucleic acid possesses most of the properties of ordinary desoxyribonucleic acids, it was found to lack a nitrogenous base, cytosine, which is found as a component of every other known desoxyribonucleic acid including that of the host bacteria. It was discovered that the virus contained, instead, a nitrogenous base which was identified as 5-(hydroxymethyl)-cytosine. This compound was found in uninfected *E. coli* and it was suggested that the formation of this compound is a vital step in rearranging the synthetic pathways of the host cell for the production of virus.

Although no metabolic activity of any sort had been found in highly purified and concentrated bacteriophage preparations, these particles when added to a suspension of susceptible bacteria in a suitable medium cause the destruction of the host cell and the liberation of several hundred new virus particles. The mechanism by which these particles reproduce had not been determined, but several important biochemical facts were established: (1) It was shown that little or no specific materials are contributed by the host cell to the new virus. The nutritional requirements for virus synthesis are essentially those for normal cellular growth. (2) Apparently the virus particle is disrupted as it penetrates into the bacterium. The technical simplicity of the bacteriophage system made it possible to prepare isotopically labelled virus. This labelled virus was used to trace the events occurring during the reproductive process. Measurements of the distribution of the isotope in the progeny virus showed that the infecting virus particle does not survive the reproductive process intact. It was also shown that the portion of the virus particle which does get into the cell is no longer capable of infecting new bacteria. (3) It is significant that the material originally contained in the parental virus is not specifically contributed to the viral offspring. The parental material which is found in the progeny appears to be largely, if not entirely, the result of the non-specific incorporation of fragments of the parent virus into the new virus. The above conclusion rested on several different experimental approaches. It was found, for instance, that neither ultra-violet light nor X-ray irradiation of the labelled parent virus affected the contribution of parent material to the progeny, even though these types of irradiations

destroy the genetic portion of the bacteriophage. This must mean that the material passed from parent to offspring does not play an essential role in the reproductive process. These three findings were of major importance and had to be considered in any further experiments on the mechanism of virus reproduction. It was expected that information obtained in the bacterial virus system would be applicable to the animal viruses and might lead to a rational approach to the treatment of human virus diseases.

Cancer.—Considerable progress was made along three different but fundamental biochemical approaches to the cancer problem. More than 20 years earlier, it had been discovered that certain polycyclic hydrocarbons, such as benzpyrene or methylcholanthrene, could cause cancers in animal tissues. Modern techniques had now been used to investigate the manner in which such compounds cause cancer. Current work suggested that these carcinogenic compounds undergo additional reactions with cell constituents. One of the early reactions of the hydrocarbon molecule when in contact with the tissue is hydroxylation. Quantitative evidence was also obtained on the length of time that these carcinogenic compounds remain in certain tissues which eventually develop cancers. It was hoped that this type of information would eventually give a clue to the crucial reactions which are occurring. In this connection it should be noted that some characterization of the proteins of rat liver which react with the carcinogenic azo dyes had been achieved.

Interesting results were obtained on the effect of hormones on cancer development. It was reported that long continued administration of pituitary growth hormone to rats resulted in the production of a wide variety of neoplasms, particularly in the endocrine organs. Similar treatment of hypophysectomized female rats did not produce cancer. Apparently the presence of the pituitary gland and its secretions are necessary in the production of the neoplasms resulting from the administration of growth hormone. These findings established for the first time a relationship between regulation of growth and neoplastic changes. Although the primary metabolic deviation of neoplastic tissue from normality remained obscure, efforts had been concentrated on finding an agent which would block the growth of a tumour by competing with a metabolite in an essential cell process. It was found that certain mouse tumours are inhibited by the compound 8-azoguanine but the mechanism of this inhibition remained obscure. Some new promising leads resulted from the finding that certain compounds having two or more reactive groups are capable of reacting within the cell with a constituent essential for the process of cell division. Such compounds as trimethylamine have tumour-inhibitory activity against Walker 256 carcinoma in rats. Unfortunately, as therapeutic agents these compounds share with others the property of directing their action against dividing cells in general rather than against tumour cells in particular.

The relationship between viruses and cancers received considerable attention. It had been known for some time from the work of John J. Bittner that mammary carcinoma in mice is caused by a filterable agent which is transmitted from one generation to another through the milk of nursing females. Recently small spherical particles having a diameter varying from 20 to 200 m μ were visualized with the aid of an electron microscope, in samples of milk obtained from nursing mice known to carry the mammary carcinoma agent. Similar spherical particles were also found in tumour extracts or in cells cultured from mouse mammary carcinomas. Injection of purified preparations of such particles had caused mammary carcinomas in susceptible mice.

An important recent discovery was the presence of particles in human milk. Although the true nature of these particles remained obscure, the presence of these particles was roughly

correlated with a history of cancer in the donor's family. Further work was needed to clarify the significance of this finding.

Carbohydrates.—A novel mode of hormone action on enzymes was revealed by the studies on glycogenolytic agents, *i.e.*, hormones which cause the breakdown of glycogen to glucose. It was found that the rate limiting step in the enzymatic conversion of glycogen to glucose was that caused by the action of the enzyme phosphorylase. This enzyme catalyzes the formation of glucose-1-phosphate from glycogen. Epinephrine (adrenalin) and similar compounds were found to possess the power of increasing the activity of this enzyme. In vitro measurements demonstrated that this agent preserved phosphorylase activity, and could restore this activity when it had fallen to low levels in the tissue. An increase in the concentration of active phosphorylase in liver by glycogenolytic agents was also demonstrated in vivo. These experiments indicated that the amount of active phosphorylase in liver is balanced by inactivation and resynthesis of the active form. This balance is under hormonal control since minute amounts of epinephrine can cause a large increase in active phosphorylase in liver slices. (See also PHYSIOLOGY.)

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Biography: see AMERICAN LITERATURE; BOOK PUBLISHING; ENGLISH LITERATURE; OBITUARIES; and, in their alphabetical positions, biographies of living persons.

Biology: see ANTHROPOLOGY; BOTANY; ENDOCRINOLOGY; GENETICS; MARINE BIOLOGY; PHYSIOLOGY; ZOOLOGY.

Birth Control. Population increases, the result of marked and widespread lowering of death rates since 1932, were reported by the United Nations in a population summary during 1952. The year also marked increasing acceptance on an international level of the need to plan human birth in relation to available supplies of food and other vital resources.

International.—Abraham Stone, vice-president of the Planned Parenthood Federation of America, returned during the year from India where he had established a pilot project in the rhythm method of birth control under auspices of the Indian government and the World Health organization. The clinical studies that Stone initiated in New Delhi and the states of Mysore, Madras and West Bengal continued under the supervision of two family-planning specialists, recommended by the federation at the request of W.H.O.

The first World Conference on Planned Parenthood to be held in the far east took place in Bombay, India, Nov. 24-Dec. 1, 1952, initiated by the International Committee on Planned Parenthood whose headquarters were in London. Physicians, demographers and scientists from Asia, Europe and the U.S. met to study social, economic and cultural factors in relation to population problems; to exchange information and views on planned parenthood programs in different countries; to stimulate social and biological research in human reproduction and to encourage the formation of national planned parenthood organizations. The conference, which was held under the auspices of the Indian Family Planning association, had Lady Rama Rau, association president, as its chairman. Mrs. Margaret Sanger, founder of the birth-control movement, who spearheaded the establishment of the International committee in 1948, was director of the American division of the conference.

The first international birth control publication, *News of Population and Birth Control*, was issued in January. Published

monthly in New York, N.Y., at the request of the International committee, its 9,000 readers included government officials and key lay and professional leaders in 65 countries.

Research.—The urgent need for simpler and less expensive methods of fertility control led to the federation's establishment of the position of research director, and the appointment of Paul Henshaw, an experimental biologist, to the post, in order to expedite, co-ordinate, conduct and promote research in the field of fertility and sterility. Henshaw carried out a survey on the potentialities on the physiologic control of fertility, which revealed that the principle of such control could be regarded as established, based on the large amount of published literature in this field. The study also showed that two types of further research were needed: (1) practical studies to establish minimal doses, the most effective methods of treatment and the standardization of treatment materials at low cost; and (2) basic studies to develop still more suitable methods.

U.S. Services.—The Planned Parenthood Federation of America was, in 1952, the national agency and clearing house for 11 state leagues and 91 local committees. Birth control clinics numbered 519. These services were in 274 public health departments, 48 hospitals and 175 extramural clinics, and there were 22 referral services. Of the 196,604 yearly total of patients visiting birth control clinics in 1951, the majority, or 189,658, were served in extramural clinics sponsored by federation affiliates. The seven states which included birth control in their public health programs were Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina and Virginia. The known infertility clinics in the country providing diagnosis and treatment of childless couples were 66, of which 13 were under the auspices of the Planned Parenthood federation. (M. SR.)

Birth Statistics. It was estimated that there were 2,161,000 births in the United States during the first seven months of 1952, so that the birth rate, on an annual basis, was 23.9 per 1,000 population. The rate for the same period of 1951 was 24.1 per 1,000. There were, altogether, 3,758,000 births registered during the whole of 1951, but an allowance for unregistered births brought the figure to 3,833,000; the corresponding birth rates per 1,000 population were 24.5 and 25.0 respectively. A decade earlier, in 1941, the estimated total live births, with an allowance for those unregistered, was 2,701,000, and the birth rate 20.3 per 1,000 population.

In connection with the census of population taken in the United States on April 1, 1950, a test of the efficiency of birth registration was made by comparing the number of infants under three months old who were enumerated with the birth records on file for the period Jan. 1 to March 31, 1950. It was found that 97.8% of the births were recorded during this period, compared with 92.5% observed in a like test conducted in conjunction with the 1940 census. For the white births, 98.5% were recorded in 1950, a rise of 4.5% since 1940; for nonwhite births, 93.4% were recorded, 11.4% more than in 1940. Only Connecticut showed that 100% of its births were recorded in the 1950 test. There were 23 states with 99% or more of their births recorded; this category included such populous states as California, Illinois, New York and Pennsylvania. Lowest on the list was Arkansas, where only 88.1% of the births were recorded.

Provisional reports from Canada, including Newfoundland, covering the first six months of 1952, showed a 2% increase over the same period of 1951. During the whole of 1951, Canada had about 382,000 births and a rate of 27.2 per 1,000 population. In contrast with this Canadian experience, the record for urban communities in England and Wales during the first eight months

of 1952 showed a 4% drop in births from the same period of 1951. During the whole of 1951, England and Wales recorded 679,497 births, the rate being 15.5 per 1,000 population. Among the other English-speaking countries, the birth rates per 1,000 in 1951 were: Scotland, 17.8; Northern Ireland, 20.8; Europeans in the Union of South Africa, 25.5; Australia, 22.9; and New Zealand (Europeans), 24.4. In construing these and other international comparisons of crude birth rates, such as those cited, account must be taken of differences between countries in their proportions of total population at the reproductive ages, the ratio of males to females at these ages, the level of the marriage rate, the ages at marriage and the duration of existing marriages.

Birth records were lacking or incomplete for large populated areas of the world, principally Asia and Africa, so that only a very rough estimate could be made of the total birth rate. For the period 1946-48, the birth rate for the world was estimated to lie between 35 and 37 per 1,000 population (United Nations, *Population Bulletin*, no. 1, Dec. 1951, p. 3). The rate was estimated to lie between 40 and 45 per 1,000 for all of Africa and all of Asia outside of Japan and the U.S.S.R. Japan had a birth rate of 31 per 1,000, while the U.S.S.R., both in Europe and in Asia, was said to have a rate of 28 per 1,000. The rate for southern Europe was placed at 23 per 1,000, while that for northwest-central Europe was lowest of all, 19 per 1,000. In America the rate north of the Rio Grande was 25 per 1,000, but south of the Rio Grande it was as high as 40 per 1,000. For Oceania the birth rate was 28 per 1,000 in 1946-48. Compared with a decade earlier, 1936-38, the recent birth rates were higher in America north of the Rio Grande, Oceania, Japan and northwest-central Europe. In the U.S.S.R. the birth rate had fallen. In all other areas, for most of which birth data were very fragmentary, the birth rate seemed not to have changed.

Among the European countries with birth rates of less than 20 per 1,000 population in 1951 were Austria, 14.6; Belgium, 16.1; Denmark, 17.8; France, 19.4; Federal Republic of Germany, 15.7; Italy, 18.1; Norway, 18.5; and Sweden, 15.6. On the other hand, birth rates of 20 or more per 1,000 population were recorded for Finland, 22.9; the Netherlands, 22.3; Portugal, 24.1; and Spain, 20.1. Especially high birth rates for 1951 were found in Costa Rica, 47.6; Guatemala, 52.1; and Venezuela, 45.6. Mexico had a rate of 44.6 per 1,000 in 1951.

In a survey of fertility trends and differentials in the United States, C. V. Kiser reviewed the work of P. K. Whelpton (*Journal of the American Statistical Association*, March 1952). Whelpton's findings showed that the upswing in the marriage rate and in the rate of first births had contributed materially to the recently rising crude birth rate. However, the same influences made it appear unlikely that the postwar level of the crude birth rate could long be maintained. The findings indicated, also, that there might possibly be a small and perhaps temporary change from the long term decrease in the average size of family, as measured by the average number of births per woman of completed fertility. Kiser surveyed changes since 1940 in the ratio of the number of children under 5 years of age to the number of married women of childbearing age. These ratios, which measure fertility trends, had generally increased since 1940, with the rises tending to be relatively greatest among those population groups that initially had the lower ratios. For example, the ratios rose more rapidly in urban places than in rural-farm places, in the northeast than in the south, and among the white population than the nonwhite population. As a result, there was a reduction in the fertility ratios among various categories within the nation.

A survey of the seasonal pattern of births for the United

States as a whole showed, in the absence of unusual circumstances, a peak in their frequency in August or September and then a rather gradual decline to a low in the following April or May; there was generally a minor peak in February or March (*Statistical Bulletin* of the Metropolitan Life Insurance company, July 1952). During the last decade, this pattern was interrupted by the impact of war. Thus, the 1942 peak fell in September and October, and the 1943 peak in January and February; the first peak might be associated with the entry of the United States into World War II in Dec. 1941. The November peak in 1946 was a result of the return of the armed forces to civilian life shortly after the close of the war. The general seasonal pattern in births was evident again from 1948 to 1950. However, the outbreak of war in Korea in June 1950 led to a peak in births in April and May 1951, these being conceived shortly after the hostilities began. Within the United States in 1948-49, a period not influenced by war, it was found that the seasonal variation in births was smallest in the northeast and the west and greatest in the south. (See also CENSUS DATA, U.S.; INFANT MORTALITY.) (M. Sp.)

Bismarck Archipelago: see TRUST TERRITORIES.

Bismuth: see MINERAL AND METAL PRODUCTION AND PRICES.

Blind, Education of the. The year 1952 marked the centenary of the death of Louis Braille, the blind Frenchman who devised the Braille system of reading and writing for the blind. During the year numerous commemorations in his honour were held in many countries.

The second important international event was the convening of the International Conference of Educators of Blind Youth, at the Institute for the Blind, Bussum, Neth., July 25-August 2, with representatives present from 34 countries. The program of the conference consisted of a consideration of the general educational problems of blind youth, and resulted in a summary presentation of minimum standards for their education in the following fields: (1) educational and social needs of the pre-school blind child; (2) educational and social needs of the additionally handicapped blind child; (3) needs of the average blind child of school age; (4) needs of the blind child of superior intelligence; (5) needs of the blind child in the field of educational psychology; (6) needs of the blind child in physical education; (7) needs in continued general education for blind youth; (8) social needs of blind youth in a seeing world; (9) provision of textbooks, special apparatus and general educational media in schools for the blind; (10) co-operation of teaching, nursing and domestic staffs; and (11) co-operation between the responsible authority, the parent and the school in the education of the blind child.

As a culmination of the several international and regional conferences on world Braille uniformity sponsored by the United Nations Educational, Scientific and Cultural organization, the World Braille council was organized in Dec. 1951 as a permanent body to be attached to U.N.E.S.C.O. as an advisory committee, and was directed to include in its program the consideration of music notation, mathematical and scientific symbols, the compilation of an international catalogue of Braille publications, the establishment of regional councils to deal with the development of contracted Braille forms for individual languages and assistance in the co-ordination of uniform Braille systems for the African and southeast Asian languages.

In response to recommendations by the Rehabilitation unit of the United Nations, studies in the special training of the pre-school blind child and research into general educational problems of the blind were undertaken by U.N.E.S.C.O., and the World Health organization agreed to make research into the special



BLIND BOY SCOUTS building a dog kennel as part of a course in pet care given at the New York Institute for the Education of the Blind, New York city, in 1952. The boy at right is shown using a Braille ruler

sense of orientation possessed by the blind with a view to its development through training. In the field of general rehabilitation of the blind, the United Nations provided six fellowships and five scholarships to students from the less-developed countries wishing to study modern methods of rehabilitation of the blind, and sent experts in the field of the blind to advise the governments of Ceylon and Italy. A demonstration centre for the blind was set up in Egypt under the sponsorship of the United Nations, which was provided with a Braille printing plant and special equipment for the use of the blind, with a view to making this a regional centre which would later serve all of the Arabic-speaking countries of the area. Plans were also undertaken to supply a Braille printing plant to Turkey through the resources of the United Nations, while projects were formulated for the establishment of printing plants in several other countries, such as Pakistan, Cuba and Japan, under the sponsorship of their individual governments or local philanthropic agencies interested in the welfare of the blind.

Reported statistics on the incidence of blindness among children of school age throughout the world continued to be inaccurate and incomplete. Of 23 countries reporting (mostly in North America, Europe and the British Commonwealth and colonies) there were about 650,000 blind children, of whom 600,000 alone were in India, 12,000 in Japan and 10,000 in the Union of South Africa. In the United States, as of Jan. 7, 1952, there were 6,970 children reported as being in attendance in the 54 residential and 34 public-school classes for the blind. In addition, approximately 8,000 partially visioned children were in attendance in 248 public-school sight-saving classes in the United States during the 1951-52 school year. In addition, several hundred blind children and an unknown number of partially visioned were being educated in the regular public schools along with their seeing classmates.

One new cause of blindness had developed into serious pro-

portions after 1947. Retrolental fibroplasia—a fibrous condition which develops behind the lens of the eye—was being reported in 8% to 15% of premature births, particularly in those under three pounds. Prior to 1950 the blind school populations in the United States had been decreasing. After that time there had been a total increase of 1,213 pupils or 21%. Like conditions, in somewhat lesser degree, were noted in England, Canada and other countries where medical science was more advanced in the saving of prematurely born infants.

Several important educational conferences were held in the United States during 1952, including two meetings on the education of the slow-learning blind child, a special meeting of principals of schools for the blind and the second simultaneous convention (Louisville, Ky., June 29-July 4, 1952) of the American Association of Instructors of the Blind (founded in 1858) and the American Association of Workers for the Blind (founded in 1898), the two oldest national associations for the blind of North America. (F. E. D.)

Blood, Diseases of the. During 1952 a quickening of interest developed in the disorder known as idiopathic thrombocytopenic purpura (ITP). In this condition excessive bleeding occurs from mucous membranes (nose, gums, vagina, etc.) and a variable degree of purpura; *i.e.*, purplish spots of the skin and little blood spots called petechiae. The condition of purpura had been known for centuries; only recently had some order been established in the rather chaotic jumble of conditions in which purpura occurs. Some cases are the result of such well-defined causes as leukemia and other severe disturbances of the blood-producing centre; *i.e.*, the bone marrow. Others are of unknown nature and are accompanied by a lack of production of platelets from their precursors in the marrow, the megakaryocytes. This type is idiopathic. Recent studies had indicated that some cases are acute and self-limited whereas others are chronic. The acute cases often develop in the wake of an acute infection, or an exanthematous disease of childhood such as chicken pox or after certain drugs (sedormid, quinidine, chloromycetin). Almost always they have a relatively short course of a few months or less and become completely well. In contrast with the chronic cases, the operation of splenectomy (removal of the spleen) is not usually either advisable or necessary. The chronic cases go on year after year, with ups and downs, and at times have crises of active bleeding. Splenectomy in the chronic cases, although usually curative, may sometimes have no effect.

R. S. Evans postulated that ITP had a similar mechanism to that of acquired haemolytic anaemia, in that he believed that the patient with the disease had developed an antibody attacking his own platelets. W. M. Harrington went a step further. He actually injected blood from a patient with ITP into normal persons and demonstrated a severe drop in platelets in some. This indicated the presence of a substance (? antibody) in the blood of certain patients with ITP. The reverse experiment (*i.e.*, the injection of large quantities of normal platelets into the blood of patients with ITP) indicated a rapid destruction of the introduced platelets, thus indicating similar conclusions. What the humoral substance is and where it acts had eluded observation although a platelet antibody had actually been demonstrated in some cases. Previous studies pointed to the more or less mysterious organ the spleen as the site either of increased platelet destruction or of a substance which inhibited platelet formation by the bone marrow megakaryocytes. The evidence for platelet destruction by the spleen had become less and less valid but there still remained the possibility that some sort of "bad humour" might reside in the abnormal spleen of some cases. The dramatic results of removal of the

spleen had emphasized this possibility.

There was in 1952 a renewed interest in the whole subject of the blood platelets, resulting in many studies of their physiology, chemistry, methods of preparing platelet suspensions, methods of administering platelet transfusions, etc. Not only do many otherwise useful chemicals and drugs attack the bone marrow of susceptible persons and result in severe thrombocytopenia (platelet lack), but the atomic bomb may do the same. One of the chief causes of death in the Hiroshima and Nagasaki disasters was outspoken bleeding associated with low levels of blood platelets developing after exposure of the bone marrow to the large dosage of gamma-rays.

In 1952 leukemia remained the foremost problem in haematology. Numerous chemicals (nitrogen mustard, urethane, aminopterin, triethylenemelamine, etc.) had been introduced during the past few years for treatment. They were found to have transitory effects in some cases, and rather prolonged effects in others. During 1952 triethylenemelamine (TEM), a nitrogen mustardlike drug which could be given by mouth, proved of distinct benefit. It was found particularly useful in chronic lymphocytic leukemia where small doses given weekly or at greater intervals could often maintain patients in a completely normal state for long periods of time. This drug was also useful in certain cases of Hodgkin's disease and chronic granulocytic leukemia but was of little if any value in acute leukemia. No case of leukemia had been cured by a chemical, however potent, although remissions certainly had occurred and indicated that the relentless trend of this dread disease could be reversed.

The fundamental problem in leukemia is not so much the matter of treatment but causation. If the cause were only known, then preventive measures could perhaps be tried. Some cases of leukemia develop after long continued X-ray exposure—as in radiologists. Others appear to have developed after one single exposure of a high dosage of X-rays (gamma-rays) as at Nagasaki and Hiroshima, Jap. Heredity may be a factor in some cases, but the factor of heredity appears to be of far less importance than other causes. One of the postulated ones is virus infection. Fowl leukemia is definitely caused by a virus. Ludwik Gross was able to transmit leukemia in a previously nonleukemic strain of mice by inoculating leukemic material early in life. He concluded that mouse leukemia was caused by "vertical transmission"; i.e., from one generation to the next by a virus which could pass through the placenta and could then lie dormant for months in the infected host. Finally, leukemia might develop several months or a year after inoculation; i.e., when the mice were "middle-aged." Gross postulated that a similar situation was possible in humans.

Although sickle cell anaemia was supposed to be limited to Negroes, the recent finding of sickle cell trait and anaemia in isolated communities of Greece where no admixture of Negro blood seemed possible had brought this point into question. More and more cases of sickle cell anaemia were being reported in white people, particularly from Mediterranean countries and in Mediterranean people (Italians, Greeks, Portuguese). Careful blood and chemical studies indicated that these cases represented either an admixture of sickle cell haemoglobin and Mediterranean anaemia haemoglobin or of the presence of another abnormal haemoglobin. The entire chemical and inheritance pattern of these two probably related diseases was in a state of active study.

Two new disorders of the blood clotting factors were emphasized in 1952, one having to do with lysis of the clot (fibrinolysis), the other with a disease resembling haemophilia but arising from the deficiency of a plasma thromboplastin component (PTC). When a clot is formed, it is then gradually dissolved (lysed). This process is called fibrinolysis and is the

result of the activation of an inert proenzyme in the blood to the active fibrinolysin. H. J. Tagnon showed that certain cases of generalized cancer of the prostate gland, presenting themselves as a bleeding disorder, were the result of an excess of this fibrinolytic factor which destroyed other constituents of the coagulation system and resulted in severe haemorrhage. Recognition of this disorder was of great importance, not only because it helped to diagnose certain obscure bleeding disorders in men of the older age group, but because of the opportunities for treatment presented by the use of stilbestrol and castration. With regard to PTC deficiency, P. M. Aggeler and associates showed that a patient with a disorder superficially resembling haemophilia actually lacked a plasma constituent which was present in haemophilia. This could be corrected by appropriate amounts of thromboplastic extract. The differentiation of these rare bleeding disorders was of considerable importance from the standpoints of prognosis (outlook) and the development of definitive and special therapeutic methods for specific disorders. (See also CORTISONE, HYDROCORTISONE AND CORTICOTROPIN; MEDICINE.)

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Blue Cross: see INSURANCE.

Bobsledding. Arthur Tyler of Rochester, N.Y., with Edward Seymour, a fellow townsman, as his



WEST GERMAN TEAM, led by Andreas Ostler, during the four-man bobsled event which they won at the winter Olympics in Norway, Feb. 22, 1952

brakesman, piloted his sled to the two-man title in the national Amateur Athletic union championships at Lake Placid, N.Y., Feb. 24, 1952. The winner's total elapsed time for the four heats over the Mt. Van Hoevenberg run was 5 min. 21.08 sec. Bill Dodge of New York city drove the second-place sled while Larry McKillip of Saranac Lake was third. Robert Duprey and three other riders from Saranac Lake raced to the four-man crown with a total time of 5 min. 00.78 sec. for four runs down the course. Riding behind Duprey for the Saranac Lake Bobsled club were Ralph Hartman, Gerry Morgan and Robert Swain, brakesman. The sled driven by Clarence Preston of Oneonta, N.Y., was second and Monroe Flagg's team from Saranac Lake was third.

Because of the lack of maintenance funds, the championship run was closed for the season late in February which cancelled out a number of feature events, including the junior national A.A.U. contests and the North American title meet. (See also OLYMPIC GAMES.) (T. V. H.)

Bolivia. Bolivia is a landlocked republic in south central South America. Area: 416,040 sq.mi.; pop. (1950 census of the Americas): 3,019,000; (1951 est) 3,054,000. The legal capital is Sucre (est. pop., 1946, 32,000); the actual seat of government is La Paz (est. pop., 301,000). Other major cities (with pop. est.) include Cochabamba (80,000), Oruro (50,000), Potosí (40,000), Santa Cruz (33,000) and Tarija (27,000). Racial distribution is estimated to be 52.34% Indian, 27.5% mestizo, 13.08% white, .22% Negro and 6.85% unspecified. Religion is predominantly Roman Catholic. Presidents in 1952: Gen. Hugo Ballivián, until April 11; Hernán Siles Suazo, April 11 to 16; thereafter, Víctor Paz Estenssoro.

History.—Throughout 1952, political instability continued to be a major Bolivian problem. President Ballivián promised in February that constitutional order would be achieved during the year, but his own government was overthrown two months later after a three-day revolt in which the fatalities were estimated at between 800 and 1,500. The rebellion brought to the presidency on April 16 Víctor Paz Estenssoro, leader of the outlawed Movimiento Nacionalista Revolucionario (M.N.R.), which had been in power in 1943-46, and had followed a pro-Axis policy in World War II. The M.N.R. is a party "of the masses, yet it is completely anti-Communist," the new president declared upon assuming office. "Our plans are not anticapitalist; we have never said we desire to nationalize the mines, but we are pledged to exploit the riches of the country for the benefit of the people." The Paz Estenssoro regime was recognized by the U.S. on June 2.

Stern measures were taken against domestic opponents of the new government. In April, armed bands prevented the further publication of the country's largest newspaper, *La Razón*, which had represented tin interests and which President Paz Estenssoro branded as an "enemy of the Bolivian people." During the same month, 16 opposition political leaders were arrested, and deposed President Ballivián went into exile in Chile. The Paz Estenssoro regime declared that it was prolabour in orientation, and a new Central Organization of Bolivian Workers was established to lend political support to the government. Evidence of strong labour dissidence was nevertheless recorded on April 22 when 870 miners and other workers struck at Corocoro in protest against the revolution. The regime announced on July 21 that congressional elections would be held in Jan. 1953. The entire nine-man supreme court was removed from office on Aug. 27, when it was replaced with pro-M.N.R. judges. The next day a new group of opposition leaders was imprisoned, charged with responsibility for a "terroristic plot designed to eliminate the chief government leaders."



BOLIVIAN REBELS firing from behind old walls on the outskirts of La Paz, during the revolt which unseated a military junta in April 1952

In an agreement signed on Sept. 29, the U.S. undertook to buy from 6,000 to 7,000 long tons of tin from the Bolivian government at a price of \$1.175 per pound, f.o.b. Peruvian and Chilean ports. Despite President Paz Estenssoro's initial declaration that the tin mines would not be nationalized, significant steps were taken in that direction in the months after his assumption of office. On May 14 a nine-man commission was named to study the feasibility of nationalization, and the Bolivian Mining corporation was established as a government agency on Oct. 3. Four days later, this corporation assumed control of the mine properties of the Patiño, Aramayo and Hochschild groups, the largest tin interests in the country. This step was taken for the declared purpose of preventing sabotage, and on Oct. 31, President Paz Estenssoro signed the decree taking over the three companies' properties. (G. I. B.)

Education.—Bolivia in 1950 had 1,500 rural schools with 110,000 pupils and 1,595 elementary schools with 147,060 pupils. There were 104 secondary schools (national and private) with 18,029 pupils. There were also several training colleges for teachers. There were universities with more than one faculty at Cochabamba, La Paz, Oruro, Potosí and Sucre. Education was scheduled to receive 16% of government expenditures in 1951. In 1951 there were 47 motion-picture theatres (not including those maintained by the tin mining companies) with estimated seating capacity of 32,300.

Finance.—The monetary unit is the boliviano, valued on June 30, 1952, at \$0.0165 U.S. currency, official rate; \$0.0099, legal free rate; \$0.0045, curb rate; and \$0.0077 and \$0.0053, special rates. The 1952 budget, as originally promulgated, provided for expenditure of 5,100,000,000 bolivianos (1951: 4,725,126,848 bolivianos) and revenue of 5,000,000,000 bolivianos (1951: 3,058,827,765 bolivianos). The public debt on Aug. 31, 1951, was 12,233,000,000 bolivianos, about half of which represented the foreign debt (including accrued interest). On Dec. 31, 1951, the debt of the national government to the Central bank was 3,019,978,888 bolivianos. Currency in circulation on April 30, 1952, totalled 3,994,000,000 bolivianos; gold reserves of the Central bank \$22,800,000; foreign exchange reserves \$11,200,000; dollar exchange in U.S. banks \$21,700,000; demand deposits 2,877,000,000 bolivianos. The cost of living index at La Paz stood at 203 in April 1952 (1948=100).

Trade and Communications.—Exports in 1951 were about \$150,900,000 (1950: \$94,000,000); imports were \$78,900,000 (1950: \$55,800,000). Leading customers in 1950 were the U.S. (52%) and the United Kingdom (41%); leading suppliers, the U.S. (39%), Peru (12%) and the United Kingdom (6%). Leading exports were tin (64%), lead (9%) and silver (5%).

Railway lines in operation (1946) totalled 1,546 mi. Several lines were in various stages of construction in 1952, including two from Argentina and Brazil, respectively, to Santa Cruz in the eastern lowlands. The highway system (1949) comprised an estimated 15,420 mi., of which 4,008 mi. were improved. Motor vehicles in 1950 included 3,727 automobiles, 8,391 trucks and 467 buses. There were about 75,000 radio receiving sets in 1950.

Agriculture.—Important crops, with estimated production in 1950–51 in metric tons, included wheat 16,000; barley 37,000; maize 110,000; rice 15,500; and potatoes 270,000. In 1948 there were an estimated 3,499,000 cattle, 4,195,000 sheep, 1,910,000 goats and 1,465,000 pigs. The principal exploited forest products were rubber and cinchona bark.

Manufactures.—In 1948 there were 2,305 factories with 25,000 employees. The most important, in terms of value of production, were electricity, textiles and clothing, beverages, foodstuffs and glassware and ceramics.

Mineral Production.—Exports in 1951 were reported as follows: tin 33,153 long tons; zinc 33,659 short tons; lead 33,105 short tons; antimony 13,025 short tons; copper 5,342 short tons; silver 7,156,590 fine ounces; mercury 700 short tons. Production of crude petroleum dropped to 523,412 bbl.; crude runs to stills were 422,567 bbl. (J. W. Mw.)

Bombs: see ATOMIC ENERGY.

Bonaire: see NETHERLANDS ANTILLES.

Bonds: see BANKING; STOCKS AND BONDS.

Book-Collecting and Book Sales. The great libraries and universities throughout the world had been actively collecting book rarities as such for generations. Other, smaller institutions were finding it necessary, if they were to maintain required scholarly standards, to establish rare-book collections. So it was that during 1952 institutional rare-book collections were established, or existing collections enlarged. A complete collection of Edgar Allan Poe was presented by Clifton Waller Barrett to the University of Virginia, Charlottesville; Cornell university, Ithaca, N.Y., acquired as gifts for its newly established rare-book department the Charles J. Paterson collection of Rudyard Kipling and the Nicholas H. Noyes collection of Booth Tarkington. Cornell also received as a gift the collection of books and manuscripts relating to the lumber trade assembled by Henry W. Sage. The Michael Sadleir collection of Victorian British novelists was purchased by the University of California at Los Angeles; and the records of Henry Holt & Co., publishers since 1866, were presented to Princeton university, Princeton, N.J. The Holt collection consisted of more than 400,000 letters, manuscripts and other documents. The Pequot collection, a group of about 3,000 choice rare books and manuscripts, relating in the main to America, including a copy of a "Columbus Letter" in Latin (Rome, Stephen Plannck, 1493), was deposited on loan in Yale university libraries. The collection, the property of a small group of Connecticut collectors, had been formed over a period of years. On a graver note, the Henry E. Huntington Library and Art gallery, San Marino, Calif., deemed it wise to construct, at a cost of \$250,000, an underground bomb-proof shelter for its \$50,000,000 collection of rare books, manuscripts and works of art. The Library of Congress received as a gift from Lessing J. Rosenwald the so-called "Giant Bible of Mainz," a manuscript Bible in two volumes. Presentation was made on April 4, 1952; the manuscript was begun on April 4, 1452.

In general, prices for books followed the pattern of several previous years, with genuine rarities bringing reasonably high prices. Following the inflationary trend, good material in 1952 brought higher prices than in 1951. The once popular 18th century British authors were in slow demand and comparatively few were offered. Desirable books of the 19th century, both British and American, found ready buyers. The largest sale of 1952 was that of the A. S. W. Rosenbach collection of Shakespeare (73 printed books) for an undisclosed price to Martin Bodmer of Geneva, Switz. Unofficially the price was stated at more than \$1,000,000, but that figure was doubted by informed bookmen. The Bodmer collection, one of the world's greatest, was described in *Eine Bibliothek der Weltliteratur* (1947). Press

books showed a definite decline in price and demand. Buying as a hedge against inflation caused some books to bring prices somewhat higher than presale estimates.

The most important sale of the year was held at Parke-Bernet galleries (New York, N.Y.) on Feb. 19–20, when a total of \$273,632 was realized for the Abraham Lincoln collection assembled by Oliver R. Barrett of Chicago, Ill. The catalogue issued for the sale listed 842 lots comprising several thousand documents, letters, relics, manuscripts, photographs and printed materials. Prior to the sale the collection had been offered en bloc to the Illinois State Historical library for \$220,000. Unable to raise the required amount, friends of the library nevertheless were the most active buyers at the auction.

The third and final volume of Donald Wing's *Short-Title Catalogue of Books . . . 1641–1700* was issued; volumes 1 and 2 were issued in 1945 and 1948. Plans were made to microfilm all books listed in *A Short-Title Catalogue of Books . . . 1475–1640. Book Handbook* (London) changed its name to *The Book Collector*, a more appropriate title for this superb periodical.

Throughout the world the 500th anniversary of the completion of the printing of the Gutenberg Bible was observed with continuing uncertainty as to precisely when that event happened; the consensus of informed people set the time as between 1452 and 1456.

The International League of Antiquarian Booksellers held its regular annual meeting in Geneva, Switz., July 21–26. Dealers from all over the world attended to discuss problems facing the antiquarian bookseller. (J. Bk.)

Book Publishing. During the first nine months of 1952, the number of new books and new editions published in the United States continued to rise to a total of 8,566 compared with 8,020 for the same period in 1951. (The total number of new books and new editions issued for the full year of 1951 was 11,255.) All indications pointed to an all-time high in book production for 1952, topping the record of 11,328 titles published in 1940. Fiction, after a jump from 1,216 titles in the first nine months of 1949 to 1,587 in the same period of 1951, continued about the same, 1,570 in those months of 1952, while juvenile titles (the next largest category) rose steadily from 587 in 1949 to 744 in 1951 and 810 in 1952 for a similar period. The total of technical books went up sharply from the previous year, 359 compared with 297 for the nine-month period, but books of science remained about the same, 495 in 1952 and 503 in 1951. From January through September, the only category to show a noticeable decrease was books on music, 58 in 1952 compared with 74 in 1951, while biography, geography and home economics as well as juveniles showed steady increases.

Best Sellers.—As of Sept. 1952, the best-seller list for fiction was headed by *The Silver Chalice*, by Thomas B. Costain, whose earlier historical novels had appeared on best-seller lists in previous years. Published in July 1952, it was on the list only 3 months compared with the runner-up, *The Caine Mutiny*, by Herman Wouk, 18 months on the best-seller lists and No. 1 book for 1951. Ernest Hemingway's *The Old Man and the Sea*, published on Sept. 8, promptly appeared on the list in third position while John Steinbeck's *East of Eden*, published on Sept. 19, was fifth on the list. *The Houses in Between* by Howard Spring was fourth and the sixth to tenth titles on the fiction list, as of September, were in that order: *The Gown of Glory* by Agnes Sligh Turnbull, *Don Camillo and His Flock* by Giovanni Guareschi, *Matador* by Barnaby Conrad, *My Cousin Rachel* by Daphne du Maurier and *The Distant Shore* by Jan de Hartog.

On the list of nonfiction best sellers for the first nine months of 1952, *A Man Called Peter* by Catherine Marshall topped

the list. This was an inspirational book written by the widow of a popular minister who died at the height of his career. Rachel Carson's *The Sea Around Us*, which was eighth on the 1951 list, was in second position in Sept. 1952. These were followed by *Windows for the Crown Prince* by Elizabeth Gray Vining, *Witness* by Whittaker Chambers, *Postmarked Moscow* by Lydia Kirk, *The Great Enterprise* by H. A. Overstreet, *The Diary of a Young Girl* by Anne Frank, *I Go Pogo* by Walt Kelly, *Memoirs: the Great Depression* by Herbert Clark Hoover and *Submarine!* by Commander Edward L. Beach.

These records were compiled on a percentage basis from the reports of 56 booksellers in various parts of the United States. The preponderance of bookstore sales in the last three months of a year often affect best-seller statistics considerably, and it was therefore possible that the final top ten titles for the entire year on both the fiction and nonfiction lists might well show a wide variation from September statistics.

Gross sales of trade books for the first half of 1952 were higher than for the first half of 1951 in an overwhelming number of bookshops, according to booksellers' replies to a questionnaire sent out by *Publishers' Weekly*, the trade journal of the industry. About three-fourths of the outlets reported increases in total trade book business with 9%–10% being the most common rate of increase. (A. J. R.R.)

Great Britain.—Both in respect to turnover and number of titles published, 1952 was a record year for book publishing in Great Britain. Trade turnover was the highest ever, exceeding £42,000,000. Comparison of this with the pre-World War II average of £10,000,000 indicates the modern development of book publishing. Exports of British books increased both in value (more than £14,000,000) and as a percentage of total turnover (more than 33%).

Early in 1952 book publishers experienced great difficulty in obtaining adequate supplies of paper and other materials, and the prices of paper, boards, cloth, etc., rose steeply. Later supplies became freer and prices fell. Unfortunately, the resulting reduction in production costs was more than balanced by increased printing and binding costs. On the whole, therefore, prices rose, the average published price in the period July to December 1951 being 13s. 2d. whereas that in the period January to June 1952 was 13s. 8d. In this connection the chairman of a well-known publishing house pointed out that his firm made less profit on a 14s. novel in 1952 than it did on a 10s. 6d. novel in 1951.

The rise in prices, together with the generally unfavourable economic situation in the early part of 1952, led to a fall in demand for fiction and general literature, though demand improved later in the year. In these circumstances publishers endeavoured to produce more reprints at comparatively low prices.

In the field of copyright the United Nations Educational, Scientific and Cultural Organization Universal Copyright convention was signed by 43 countries, including the United States. Should the United States ratify this convention an important step forward in the protection of British books in the U.S. would be achieved.

Other legislation of value to authors and publishers reaching the statute book in 1952 was the Defamation Amendment act which, it was hoped, would lessen the dangers arising from alleged libel and from unintentional libel. Authors were less successful when seeking tax concessions under the Income Tax act, 1952, though a modest concession was granted under section 24 in respect of lump sum payments for copyrights. Sir Compton Mackenzie, however, lost his appeal against the decision of the tax commissioners that outright sales of copyright were subject to tax.

A discouraging factor was the lack of prosperity among the

smaller publishing firms despite the publishing distinction that some of these firms showed. A more hopeful development was a realization by the established publishing houses that their markets were capable of considerable expansion if new methods were developed.

(See also AMERICAN LITERATURE; ENGLISH LITERATURE; etc.) (F. D. Ss.)

Books: see BOOK PUBLISHING; CHILDREN'S BOOKS; LITERARY PRIZES; see also under AMERICAN LITERATURE; ENGLISH LITERATURE; FRENCH LITERATURE; etc.

Borneo: see BRITISH BORNEO.

Boston. Boston, the capital of Massachusetts and the tenth largest city in the United States, with a land area of 46.1 sq.mi., had a population of 801,444 by the 1950 federal census, an increase of 30,628 or 4% over 1940.

Boston is located in Suffolk county, and under a legislative act passed in 1831 pays all the expenses of this county.

Projects of special import initiated during the year 1952 included expansion in off-street parking facilities reflected in the construction of the second in a series of downtown garages and development of the first in a proposed chain of parking areas in outlying sections of the city; extensive construction and reconstruction of important traffic arteries, including the first sections of the overhead highway which was to run through the centre of the city; establishment of a comprehensive classification and compensation plan affecting 12,000 municipal employees; further mechanization of election procedures through the purchase of 700 additional voting machines; and development of plans for a fair and equitable reassessment of all real property in the city.



MERRY-GO-ROUND in the "Jimmy Fund" clinic, part of the Children's Cancer Research foundation, which opened in Boston in 1952. The new clinic, devoted to the research and treatment of cancer in children, was partially financed by the Variety Club of New England and the Boston Braves baseball team

The tax rate for 1952 was \$66.80, an increase of \$4 over the previous year. Taxes levied on real and personal property (valued by assessors at \$1,573,516,000) reached a total of \$105,170,868.80, or \$6,467,140.80 more than in 1951. Larger maintenance requirements of city, county and school departments resulting, in the main, from general salary increases to municipal employees, together with a substantial increase in the amount of the Metropolitan Transit system deficit assessed on the city, accounted for the higher taxes.

The net funded debt of the city at the end of the year approximated \$68,600,000, representing a reduction of \$2,750,000 from 1951 as well as a total reduction of \$6,750,000 over a three-year period. (C. J. Fx.)

Botany. Of considerable importance in recent years had been the increasing number of studies on the cytology of the lower plants. During 1952 Edward de Lamater produced several studies of interest in this connection. Using a freezing-dehydration technique he found a typical mitotic process in the bacterial genera, *Bacillus*, *Escherichia* and *Micrococcus*, including morphologically distinct centrioles, chromosomes and the formation of a cell plate. The validity of De Lamater's claims of mitotic spindles and fusion tubes in bacteria was attacked by K. A. Bisset. Charles M. Wilson produced for the first time a clear study of nuclear behaviour in the water mould *Allomyces*. Meiosis was shown to follow the general pattern for most organisms and detailed life cycles were given. One subgenus was predominantly diploid with meiosis occurring in the germinating resistant sporangia. In another subgenus the nuclear divisions in the resistant sporangia were mitotic and consequently there was no sexual phase. Polyploidy was also reported.

The question as to whether a plant virus multiplies in its vector was settled for the aster-yellow virus by Karl Maramorosch. The earlier discovery of L. M. Black that this virus could be transmitted by needle inoculations to its insect host made possible this detailed study. Maramorosch carried the virus through the insect vector for ten serial passages, and direct evidence was found for the multiplication of the virus. It was concluded that the aster-yellow virus can therefore be considered both a plant and insect virus.

In a critical survey of the literature dealing with the Gnetales, A. J. Eames concluded that there is strong morphological evidence for distinguishing three orders, Ephedrales, Welwitschiales and Gnetales, and that the Ephedrales stand far apart from the other orders. The Ephedrales show many resemblances to the fossil group cordaites and apparently come from an ancient cordaite-conifer stock. Daniel Axelrod presented a theory of angiosperm evolution in an attempt to explain the history of the flowering plants from their earliest beginnings, basing his conclusions on paleobotanical evidence. The angiosperms were probably in existence in the Permian or Triassic, inhabiting upland regions in the tropical zone, and were undergoing rapid evolution. During late Triassic and Jurassic some extinction must have occurred which created discontinuities. Both monocotyledons and dicotyledons of present-day primitive types appear to have been present at this time. In early Cretaceous the angiosperms spread to lowlands and gradually began to replace the older gymnospermous floras. By the dawn of the Cenozoic many essentially modern species had evolved, and during this era the angiosperms continued to spread with major migrations and evolution as the result of aridity and glaciation.

The latest claims of the Russian geneticist, T. D. Lysenko, were reviewed by P. Maheshwari. Lysenko claimed to have found seeds of wheat and other cereals which when planted gave rise to different species or genera of cereals. The conversion

was attributed to the environment. Maheshwari adopted a sceptical view of these claims but pointed out that through androgenesis (the development of the male gamete inside the seed of a foreign species) and subsequent chromosome doubling, such an apparent conversion might occur. However, no cytological evidence was offered by Lysenko which might clarify the nature of the converted plants.

In a report on the cytogenetics of introgression, Roy E. Clausen used the example of the transfer of the gene for necrotic mosaic resistance from the wild tobacco, *Nicotiana glutinosa* (2n) to *N. tabacum* (4n). A triploid hybrid is produced and through selection a plant with 24 pairs and one univalent carrying the desired gene is obtained. The gene is then incorporated into *N. tabacum* through occasional association of the univalent with a tabacum chromosome.

In a genetic study of peas H. N. Barber and D. M. Paton secured results which suggest that flowering is not brought about by the production of a new flowering hormone but results from the sudden drop of a flower inhibitor substance.

Victor M. Cutter, Jr., et al. published a method of isolating living nucleuses from the endosperm of the coconut. It had previously been difficult to obtain large volumes of plant nucleuses because of the nature of the plant wall. This technique made possible studies of nuclear structure and culture, as well as enzymatic and respiratory investigations.

Among the other interesting developments were the following: Maize pollen grains which were found in a dried lake bed below Mexico City had been dated as 25,000 years old. The Connecticut Agriculture and Experiment station announced a new drug which in preliminary tests inhibited the growth of the fungus causing Dutch elm disease. The United States department of agriculture announced that they had succeeded in obtaining from guayule a rubber of a quality as high as that from *Hevea*. In tests to determine the effects of insecticides on trees, the U.S.D.A. reported that, instead of harming the trees and the surrounding soil, the insecticides actually exercise a beneficial effect. University of California scientists reported that green algae can utilize sewage to produce a food rich in protein. (See also GENETICS; PALAEOLOGY.)

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Arboretums and Botanical Gardens.—Henry T. Skinner, formerly curator of the Morris arboretum of the University of Pennsylvania in Philadelphia, was appointed director of the National arboretum in Washington, D.C., during 1952. H. T. Skinner had spent many years in arboretum work, at Kew gardens in England, the Arnold arboretum in Boston, Mass., Cornell university and at the Morris arboretum in Philadelphia. Katherine K. Muller was appointed director of the Santa Barbara Botanic garden in Santa Barbara, Calif.

A western chapter of the American Association of Arboretums and Botanical Gardens was formed, with all members of the parent organization living in the Pacific states and British Columbia automatically becoming members.

The Langstroth Bee garden was dedicated at the Morris arboretum in Philadelphia, marking the 100th anniversary of Lorenzo Langstroth's discoveries which laid the foundation for modern beekeeping. There are a dozen swarms of bees in this garden, together with plants noted for nectar and pollen production. Various demonstrations were staged to show how bees aid in the national economy as pollenizers and honey producers.

Two arboretums showed tremendous strides in planting programs during the year, namely the Michigan State College ar-

boretum at East Lansing, Mich., and the Royal Botanic gardens of Hamilton, Ont., Can. In both, hundreds of new specimens were planted, showing a marked popular interest in ornamental plants in these two areas. (See also HORTICULTURE.) (D. Wn.)

In England, at the Royal Botanic gardens, Kew, the new Australian house, begun in the autumn of 1950, was opened on March 15, 1952. Accounts of three families, namely the Ranunculaceae, Oleaceae and Marantaceae, constituting the first three instalments of the *New Flora of Tropical East Africa*, were published, with the preface.

The most urgent research problem of the scientific staff of the Royal Horticultural society's gardens at Wisley was to find the cause and method of control of the bud blast mosaic of rhododendrons, especially in the home counties where it was causing serious damage. Work continued on the raising of antirrhinums resistant to the antirrhinum rust disease (*Puccinia antirrhini*). Several rust-resisting strains with different flower colours were released to the public.

At Cambridge the size of the botanical gardens was doubled so that it covered 40 ac. The planting of the new area was begun in the autumn. Some of the main features would be a long south-facing wall for growing tender plants; a number of beds for demonstrating experimental taxonomy, including a series of hybrids, polyploids, ectotypes, etc.; and an area devoted to different types of ecological habitats for plants growing in their natural surroundings. There was also a plan for a succession of small gardens illustrating the development of garden-making from Roman times to the present day, but this had not yet been decided upon.

(F. J. L.)

Bowles, Chester (1901—), U.S. ambassador to India, was born on April 5 in Springfield, Mass. He attended Choate school and Yale university, graduating in 1924, worked for a year on the *Springfield Republican* and four years in a New York advertising firm. In June 1929, in partnership with William Benton (*q.v.*), he started the advertising firm of Benton and Bowles, Inc., and in 1936 he became chairman of its board of directors.

In June 1942 he was appointed district director of the Office of Price Administration for the state of Connecticut. In the following year Pres. Franklin D. Roosevelt named him national OPA administrator. In early 1946 Pres. Harry S. Truman made him director of economic stabilization with responsibility for all anti-inflation wage, price and production controls.

In Nov. 1946 Bowles was appointed a U.S. delegate to the first conference of U.N.E.S.C.O. in Paris and in the early spring of 1947 he became international chairman of the United Nations Appeal for Children.

In Nov. 1948 Bowles was elected governor of Connecticut. During the two years of his administration he introduced legislation providing for expansion of public education, housing, welfare and child care programs, labour legislation and reorganization of the state government. He was defeated for reelection in 1950 by a narrow margin.

President Truman appointed Bowles U.S. ambassador to India and Nepal in Sept. 1951. The following January, Bowles was instrumental in negotiating a \$50,000,000 grant from the U.S. to India under the Technical Cooperation program to be used in raising the level of Indian agriculture and food production.

He was the author of *Tomorrow Without Fear* and many articles in national publications on economic, domestic and foreign affairs.

(R. R. R. B.)

Bowling. The 1952 tournament of the American Bowling congress, which had a record run of 85 days at Milwaukee, Wis., proved the most successful in the sport's history. A

new mark was set when 7,735 teams, numbering about 40,000 individual keggers, saw action and a new standard was set at the gate when 147,504 spectators paid to see the competition. Steve Nagy of Cleveland, O., voted the "Bowler of the Year," was the outstanding man of the tourney, pairing with John Klares of Cleveland to win the doubles title with 1,453, a new record, and annexing the all-events crown with 2,065, only six pins short of the mark for that test. Al Sharkey, Chicago, Ill., fired 758 to gain the singles laurels and the E. & B. Beer team of Detroit, Mich., took the five-man prize with a total of 3,115.

Willard Taylor, South Charleston, W.Va., won the master's invitation tourney with twin victories over Andy Varipapa, Hempstead, N.Y., 834-792 and 756-702.

The Women's International Bowling congress held its annual championships at St. Louis, Mo., with Lorene Craig, Kansas City, Mo., toppling 672 pins to capture the singles. Virginia Turner, Gardena, Calif., totalled 1,854 for the all-events trophy and Lorraine Quam and Martha Hoffman, Madison, Wis., combined for 1,206 to win the doubles. The Cole Furniture five, Cleveland, led for team honours with 2,854.

Mrs. Marion Ladewig, Grand Rapids, Mich., the women's national match game title winner, was chosen the "Woman Bowler of the Year" for the third successive season.

Frank Hanley, Shelton, Conn., carried away two titles from the National Duck Pin Bowling congress tournament at New Haven, Conn., rolling a 452 in the singles and a total of 1,239 for the all-events award. Mike Avon and Paul Jarman, Washington, D.C., established a new world record of 929 in annexing the doubles championship, while the Washington club of Providence, R.I., took five-man laurels with 1,933. Elizabeth Lowry, Richmond, Va., rolled 430 to lead the women in singles, while Anne Wissman, Stamford, Conn., won the all-events with 1,186. Ruby Hovanic and Rose Martinelli, Bridgeport, Conn., took the doubles with 764 and the Newfield Girls of Bridgeport scored 1,727 to triumph in the team race. Helen Ploss and Jack White, New Haven, Conn., pair, were victors in the mixed doubles.

(T. V. H.)

Bowls: see LAWN BOWLING.

Boxing. Diminishing box-office returns at professional boxing matches during 1952 caused television to be viewed increasingly as a principal source of income for the sport. The development of theatre television was believed by many to have advanced the day when box-office receipts should become inconsequential.

At the same time, television posed a problem. Its operation was contributing to the depletion of the ranks of boxers under development. Small clubs, the incubators of boxing down through the years, found it impossible to operate without a television sponsor and the big networks sought only the prominent boxers. Since the International Boxing club of New York enjoyed prior contract privileges on every ring champion with the exception of the bantamweight and flyweight, the I.B.C. had the television field practically to itself.

In theatre television several important bouts were beamed to theatres at which admissions were charged, and at which boxing was the specific attraction. There was a distinct trend, particularly so since under such circumstances the spectacle was blacked out for home television consumption.

One of the bouts affected by the blackout was the match in which Rocky Marciano, Brockton, Mass., knocked out Jersey Joe Walcott, Camden, N.J., in 13 rounds, to gain the world heavyweight title. This bout was held in Philadelphia, Pa., Sept. 23. It provided the year's most dramatic battle. Marciano, unbeaten in 43 bouts, boasting 38 knockouts in a meteoric career,

became the first unbeaten heavyweight ever to win the title as well as the first white boxer to gain the title since Joe Louis dethroned James J. Braddock in 1937 at Chicago, Ill. The match attracted 40,379 persons and box office receipts of \$504,645, the year's biggest gate. An I.B.C. spokesman estimated an additional sum of \$550,000 from motion pictures, and the radio-television income was said to be \$125,000.

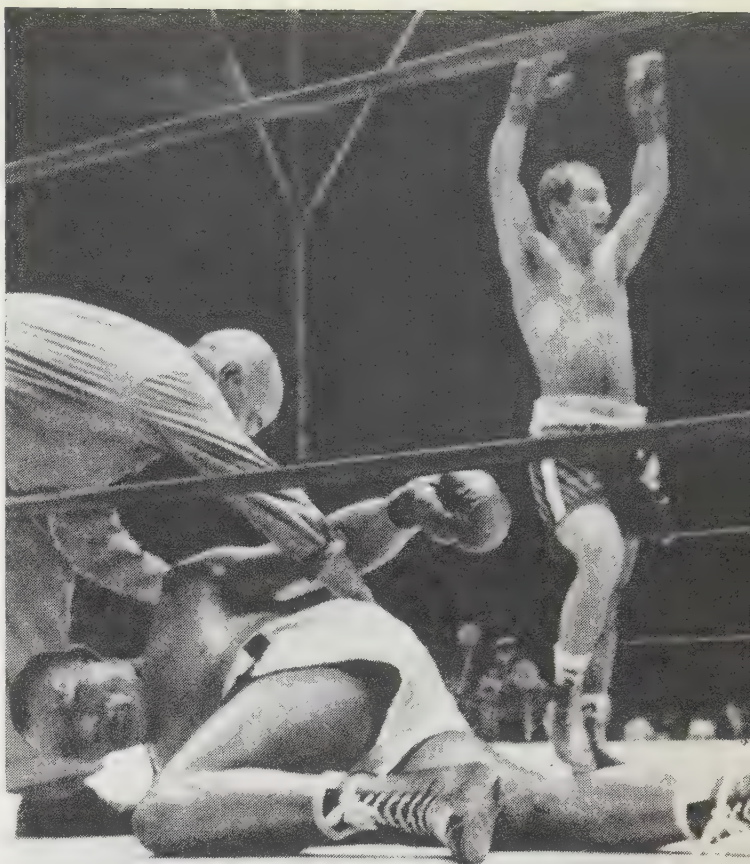
The largest crowd of the year was attracted to a light-heavyweight championship between Joey Maxim, Cleveland, O., defending champion, and Ray Robinson, New York, holder of the world middleweight title. This bout took place at the Yankee stadium, New York city, June 25, in a heat wave that registered 104° at the ringside, and ended with Maxim credited with a knockout victory when Robinson, victim of heat prostration, could not respond to the bell starting the 14th round. A crowd of 47,983 was reported, with receipts of \$421,615. The result was a surprise since at the time the bout ended Robinson had victory well in hand. Robinson shared another of the year's large gate receipts attractions when he knocked out Rocky Graziano, Brooklyn, N.Y., a former champion, to retain his world middleweight title. This bout was fought in Chicago on April 16, before 22,264 persons who paid receipts of \$252,237. Robinson had previously defended his title against Carl (Bobo) Olson, Hawaii, at San Francisco, Calif., March 13. In December the New York State Athletic commission declared Robinson's middleweight title "vacated" because of his failure to defend the championship once every six months as required by commission rules.

A total of 15 championship matches were held up to December. Five changes were recorded. Walcott had defended his heavyweight title against the former champion, Ezzard Charles, Cincinnati, O., in a 15-round bout at Philadelphia, June 5, before signing for the Marciano bout.

Jimmy Carter, New York, lost his world lightweight title to Lauro Salas, Mexico, at Los Angeles, Calif., May 14, but regained it Oct. 15 in Chicago, when he conquered Salas. Carter had triumphed over Salas in a title defense at Los Angeles on April 1. The Chicago bout attracted but 5,283 onlookers, smallest crowd in modern ring history for a championship. Vic Fowee, South Africa, defended his bantamweight title against Peter Keenan, Scotland, Jan. 25, but lost it to Jimmy Caruthers, Australia, on Nov. 15 on a knockout in 2 min. 19 sec. of the first round. Both fights were waged at Johannesburg, U. of S.Af. The first boxing championship was brought to Japan by Yoshiro Shirai, May 19, when he defeated Dado Marino, Hawaii, at Tokyo, Jap., for the world flyweight title. In a return bout Nov. 15 at Tokyo, Shirai retained the championship.

Among the most active champions was Kid Gavilan, Cuba, welterweight titleholder. He defended his crown three times, beating Bobby Dykes at Miami, Feb. 4, in the first white-Negro ring attraction in Florida; Gil Turner, Philadelphia, at Philadelphia, July 7; and Billy Graham, New York, at Havana, Cuba, Oct. 5. Only in the featherweight class was championship activity missing. Sandy Saddler, New York, the champion, was in the army.

Amateur boxing continued on a modified scale. The Amateur Athletic union's national championship tournament, a three-day affair ending April 9 at Boston, Mass., attracted only 138 entries. New York boxers won the team championship, leading 19 rival squads from continental America and Hawaii. The outstanding boxer was Floyd Patterson, 18-year-old New York high school student, who won the middleweight championship, scoring three knockouts in four matches. A squad of Chicago amateurs conquered a New York team, 9 bouts to 7, at Madison Square Garden, New York city, March 24, before 11,384, the



ROCKY MARCIANO (right) jubilant after the count which made him world heavyweight boxing champion on Sept. 23, 1952. He defeated Jersey Joe Walcott by a knockout in the 13th round of their title match at Philadelphia, Pa.

first time in four years the fixture failed to end in a deadlock.

Syracuse university (N.Y.) won its fourth straight team title in the Intercollegiate Boxing association championships at State College, Pa., March 8, leading the U.S. Military academy, Penn State, Virginia and Catholic university, in that order. On April 5, at Madison, Wis., the University of Wisconsin boxing team won the National Collegiate Athletic association championship team honours.

(J. P. D.)

Great Britain.—There was disappointment during the year at the failure of Randy Turpin to secure either a third contest with Sugar Ray Robinson for the world middleweight title or a meeting with Joey Maxim, the world light-heavyweight champion. Because of a lack of suitable contenders, however, the British Boxing Board of Control temporarily waived the "one man-one title" regulation and allowed Turpin to hold both the British middleweight and light-heavyweight titles at the same time.

Johnny Williams, the Rugby heavyweight, won the British and Empire titles by outpointing Jack Gardner, who, despite his great physical assets, proved a disappointing champion. After losing his light-heavyweight title to Turpin, Don Cockell decided to box as a heavyweight in the future.

The British welterweight and lightweight titles both changed hands within 24 hr. Wally Thom, the welterweight champion, was decisively beaten by Cliff Curvis, the Welsh "southpaw," and then young Frank Johnson, Manchester, outpointed Tommy McGovan, the lightweight champion.

In one of the most interesting contests of the year Ray Famechon, France, the European featherweight champion, outboxed Roy Ankarah, Gold Coast, in 15 rounds at Nottingham.

There was little activity in the bantamweight division, but

in the flyweight class the champion, Terry Allen, London, was defeated on points by the veteran Teddy Gardner, West Hartlepool. Later, Gardner was decisively beaten when defending his Empire title against an almost unknown young Zulu boxer, Jake Tuli, and immediately announced his retirement.

The British Boxing Board of Control gave an uncompromising refusal to requests for the televising of championships until further experience of its effects had been obtained. Only for small promotions, which did not clash with other tournaments, was the ban removed. British amateur boxing continued at a low ebb. Great Britain failed to get one competitor into the finals of the Olympic games at Helsinki, Fin. (W. B. Dv.)

Boy Scouts: see SOCIETIES AND ASSOCIATIONS, U.S.

Bradley, Omar Nelson (1893—), U.S. army officer, was born on Feb. 12 in Clark, Mo., was graduated from the U.S. Military academy at West Point, N.Y., in 1915 and became a major of infantry in World War I. He was graduated from the Infantry school, Fort Benning, Ga., in 1925, the Command and General Staff school, Fort Leavenworth, Kan., in 1929 and the Army War college, Washington, D.C., in 1934. He taught at West Point until 1938, and then had duty on the army general staff in Washington, D.C. During World War II he commanded the 2nd corps in Africa and Sicily, and subsequently all U.S. ground troops for the invasion of Europe. As commander of the 12th army group he supervised more than 1,300,000 combat troops, the largest body of U.S. soldiers ever to serve under a single field commander. By the end of the war he was a full general. From Aug. 15, 1945, to Dec. 1, 1947, he was administrator of veterans' affairs. On Feb. 7, 1948, he succeeded General of the Army Dwight D. Eisenhower as army chief of staff, and on Aug. 16, 1949, became the first permanent chairman of the U.S. joint chiefs of staff. In this office (to which he was reappointed for a second two-year term in 1951) he opposed the far eastern military policies of General of the Army Douglas MacArthur. During the senate's MacArthur investigation of 1951, Bradley testified that those policies would involve the United States in "the wrong war, at the wrong place, at the wrong time and with the wrong enemy." As an alternative, he advocated a policy of attrition against the Communist forces in Korea. Bradley also was a warm defender of the administration's foreign policy in Europe, declaring in a speech at Pasadena, Calif., on March 20, 1952, that the Mutual Security plan was the "least expensive" yet proposed to contain communism.

Bradley's autobiography, *A Soldier's Story*, was published in 1951.

Brannan, Charles Franklin (1903—), U.S. secretary of agriculture, was born on Aug. 23 in Denver, Colo., and was graduated from the University of Denver law school in 1929. He practised law in Denver until 1935, when he became assistant regional attorney of the Resettlement administration, and later regional attorney in the solicitor's office of the U.S. department of agriculture. From Nov. 1941 to April 1944 he was regional director of the Farm Security administration for Colorado, Wyoming and Montana. He was named assistant secretary of agriculture in June 1944 and secretary of agriculture in June 1948.

Secretary Brannan was the author of a plan designed to maintain farm incomes and still give the consumer the benefit of prices that would "seek their level," by supporting farm incomes with government subsidies to make up any difference between current market prices and farm incomes scaled to the 1939-48 level. Considerable controversy developed over the

plan, which had the support of Pres. Harry S. Truman, but agitation for it died down when the U.S. rearmament program sent farm prices upward again after the outbreak of the Korean war in 1950. The Republican party platform of 1952 denounced the Brannan plan as a scheme to "socialize agriculture."

Brazil. A federal republic in eastern and central South America, Brazil is the second largest nation in the western hemisphere. Language: Portuguese. Religion: predominantly Roman Catholic (39,177,880 according to the 1950 census) with about 1,500,000 Protestants of various denominations and 500,000 Spiritualists. Chief cities: Rio de Janeiro, the capital (1951 est. pop., 2,500,000); São Paulo (2,300,000); Recife (550,000); Salvador (450,000); Pôrto Alegre (425,000); Belo Horizonte (370,000); Fortaleza (290,000); Belém (270,000). President (from Jan. 31, 1951): Getúlio Vargas.

Brazil's area of 3,286,170 sq.mi. is second only to that of Canada in the western hemisphere. The population was 52,645,479 (1950 census); 53,377,000 (1951 est.), concentrated mostly along a narrow coastal strip. Highest percentages: the Federal District and the states of Rio de Janeiro, Alagoas, São Paulo, Pernambuco, Sergipe and Paraíba.

Area and Population of States and Territories of Brazil

(Estimates published by the Instituto Brasileiro de Geografia e Estatística)

State or territory	Area (sq. mi.)	Pop. (Jan. 1, 1950)	Capital
North			
Acre (terr.)	57,153	116,124	Rio Branco
Amazonas	595,474	530,920	Manaus
Rio Branco (terr.)	97,438	17,623	Bao Vista
Pará	470,752	1,142,846	Belém
Amapá (terr.)	55,489	38,374	Macapá
Guaporé (terr.)	96,986	37,438	Pôrto Velho
Northeast			
Maranhão	133,674	1,600,396	São Luiz
Piauí	94,819	1,064,438	Teresina
Ceará	57,371	2,735,702	Fortaleza
Rio Grande do Norte	20,236	983,572	Natal
Paraíba	21,591	1,730,784	João Pessoa
Pernambuco	38,315	3,430,630	Recife
Alagoas	11,031	1,106,454	Maceió
Fernando de Noronha (terr.)	7	648	.....
East			
Sergipe	8,321	650,132	Aracajú
Bahia	204,393	4,900,419	Salvador
Minas Gerais	228,469	7,839,792	Belo Horizonte
(Serra dos Aimorés)* . . . . .	.....	162,062	.....
Espírito Santo	17,688	870,987	Vitória
Rio de Janeiro (state)	16,372	2,326,201	Niterói
Distrito Federal	451	2,413,152	Rio de Janeiro
South			
São Paulo	95,459	9,242,610	São Paulo
Paraná	82,741	2,149,509	Curitiba
Santa Catarina	31,118	1,578,159	Florianópolis
Rio Grande do Sul	110,150	4,213,316	Pôrto Alegre
Central-West			
Goiás	225,266	1,234,740	Goiânia
Mato Grosso	485,405	528,451	Cuiabá

*Area in dispute between the states of Minas Gerais and Espírito Santo.

History.—During the year 1952 the nation was confronted with a number of serious problems, including ever-increasing inflation; the Communist infiltration in government and the armed forces; the gradual breaking up of political co-operation between the major political parties on questions of basic national interest; corruption and speculation in governmental and semi-governmental institutions; and a mounting indebtedness in foreign countries.

Among other measures to control inflation, the administration called upon private banks to enter into a voluntary agreement to restrict loans for speculative purposes; appealed to state governments to avoid any increase in taxes and to maintain balanced budgets; ordered an investigation into the collection of taxes payable by industrial corporations (it was officially announced that in the Federal District and São Paulo alone the revenue authorities had discovered that certain real estate companies had failed to pay an estimated total of U.S. \$45,000,000 in taxes during the previous year); asked state authorities to avoid any increase in salaries of government employees; and tightened

foreign import licence controls.

Despite these and other measures, the administration failed to stop the rising of prices. It was said that Brazil had one of the highest cost of living levels in the world. This situation, aggravated by the insufficiency of essential foodstuffs in the large metropolitan areas—caused not so much by lack of those commodities as by inadequacy of means of transportation—resulted in considerable unrest, particularly among the poorer classes. These conditions were exploited by Communist agitators and opponents of the administration and led to scattered strikes, some of which—such as that of the railroad workers in Divinópolis, state of Minas Gerais in early September—resulted in bloody conflicts between the strikers and the police forces.

Although denied consistently by the minister of war, Gen. Newton Estillac Leal, Communist infiltration in the army was the subject of strong and apparently well-documented attacks on the part of certain Rio de Janeiro newspapers, including *Correio da Manhã* and *Tribuna da Imprensa*. The question came to a head when Gen. Euclides Zenobio da Costa purged his command of several men and officers who had been convicted of belonging to the Communist party. Rebuked by the minister of war, General Zenobio da Costa asked to be relieved of his command.

At the same time, because of public clamour, the minister of war also presented his resignation to President Vargas. The president accepted both resignations, and appointed Gen. Ciro do Espírito Santo Cardoso to replace General Estillac Leal as minister of war. During subsequent months, more officers and men were tried and convicted of Communist activities.

The co-operation which President Vargas had received from the major parties in the first year of his administration seemed to come to an end during the year. The administration found itself unable to secure congressional approval for a number of its important proposed measures, including bills creating the Petrobrás national oil corporation (to exercise the monopoly over the exploitation of national oil resources); establishing a new coffee institute; and adopting new foreign exchange regulations.

In his address to the nation on Independence day (Sept. 7) President Vargas appealed once more to all parties to form a national union to help to solve the serious problems that confronted the nation. Although the appeal was received with general applause, no concrete evidence seemed to be forthcoming of real political harmony. General criticism of the administration continued with calls for a change in the presidential cabinet and amendment of the 1946 constitution. Criticism was particularly directed against the stringent measures taken by Minister of Finance Horacio Lafer to stop inflation, and against the scandals arising from misappropriation of funds in the Banco do Brasil and evidences of peculation in some of the semi-official labour institutes.

The country's financial difficulties were aggravated during the year by a decrease in the exports of national commodities which was reflected in an alarming increase of commercial indebtedness in foreign countries, the total of which was estimated at about U.S. \$500,000,000 at the end of the year. Although Brazil had accumulated a substantial balance of foreign exchange at the end of 1950, this balance was rapidly depleted by purchases abroad, and as time went on the country found itself owing to U.S. banks approximately U.S. \$250,000,000 and to other foreign nations a similar amount. Brazilian credit suffered as a consequence and the cruzeiro decreased in value in terms of foreign currencies.

It was said at the end of the year that the United States-Brazil joint committee for economic development (organized in July 1950) was about to end its activities, after recommending

a number of projects to the consideration of the two governments. Seven loans, totalling U.S. \$58,300,000, were being considered by the Export-Import Bank of Washington and the International Bank for Reconstruction and Development for approved projects in Brazil. Brazil had received from the Export-Import bank loans totalling U.S. \$61,400,000 for improvements of railroads, electric power development and the purchasing of agricultural machinery. (See also INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT.)

U.S. Secretary of State Dean Acheson visited Brazil on a mission of good will in July. During his visit he declared that the United States government was anxious to help Brazil in every way possible.

(R. D'E.)

Education.—In 1950 there were 60,000 primary schools with 4,500,000 pupils, about 1,500 secondary schools with 300,000 students and about 2,700 vocational, commercial and professional schools with 200,000 students. There were 11 universities, of which 3 were private (Catholic), 7 state and 1 federal (University of Brazil at Rio de Janeiro). In 1951 the 1,736 motion-picture theatres had a seating capacity of 1,071,560.

Finance.—The monetary unit is the cruzeiro (Cr\$), valued at \$0.0534 U.S. currency, official rate during 1952, and at \$0.0287, curb rate, on Sept. 30, 1952. The 1952 budget as approved by congress called for expenditure of Cr\$ 25,431,000,000 and revenue of Cr\$ 25,537,000,000. The 1953 draft budget as presented to congress in May 1952 called for expenditure of Cr\$ 30,482,155,139 and revenue of Cr\$ 30,509,000,000. Actual government expenditure in 1951 was Cr\$ 24,300,000,000 and revenue, Cr\$ 27,100,000,000. On Dec. 31, 1950, the internal floating debt was reported at Cr\$ 14,849,110,182; internal funded debt Cr\$ 10,439,287,620; external debt £37,700,265 and \$110,268,695. Currency in circulation (May 31, 1952) amounted to Cr\$ 28,640,000,000; gold reserves (Aug. 31, 1952) \$317,000,000; foreign exchange reserves, Bank of Brazil (Aug. 31, 1952) \$179,000,000; dollar exchange in U.S. banks (Aug. 31, 1952) \$92,000,000. The cost of living index (São Paulo) stood at 124 in April 1952 (1948=100).

Trade.—Exports in 1951 totalled Cr\$ 32,514,000,000; imports, Cr\$ 37,198,000,000. In the first six months of 1952 exports were Cr\$ 12,900,000,000 and imports Cr\$ 22,450,000,000. Leading exports in 1951 were coffee (57%), raw cotton (12%), cacao (4%), pine (3%) and hides and skins (2%); leading imports, machinery and vehicles (42%), petroleum and products (12%), wheat and flour (10%), chemicals and drugs (7%) and iron and steel and manufactures (5%). The leading customers were the U.S. (49%), the United Kingdom (10%), France (5%), Germany (5%) and Argentina (4%); leading suppliers, the U.S. (42%), the United Kingdom (8%), Argentina (6%), Germany (6%) and the Netherlands Antilles (5%).

Communications.—Railway mileage (1951) was about 23,000; highways, 38,000; common roads, 124,000. On Jan. 1, 1951, there were 238,478 automobiles, 192,023 trucks and 14,220 buses. In 1950 the 21 Brazilian air lines flew 42,500,000 mi. and carried 1,616,420 passengers. According to *Lloyd's Register of Shipping*, the merchant marine had 335 vessels (100 tons and over) aggregating 687,788 gross tons on June 30, 1951. There were three television stations in operation in 1952.

Agriculture.—Coffee production in the 1950-51 season totalled 16,948,000 bags of 132 lb. each. In 1951, 16,358,000 bags were exported, of which 10,506,000 bags went to the U.S., 734,000 bags to France and 569,000 bags to Sweden. Cacao production in 1951-52 was 104,725 metric tons; 96,000 tons were exported in 1951. Cotton (ginned) production was estimated at 336,000 metric tons in 1951-52; exports totalled 143,412 tons in 1951. Preliminary estimates for other crops in 1951-52 included rice (paddy) 2,770,000 metric tons; wheat 495,100 tons; maize 6,342,000 tons; peanuts 147,900 tons; potatoes 726,700 tons; tobacco 116,800 tons. Refined sugar production in 1951 was 1,903,000 metric tons. In 1951, 167,189,000 stems of bananas were produced. Wheat imports totalled 1,305,525 tons in 1951.

Livestock (Dec. 31, 1948) included 50,089,000 cattle, 13,804,000 sheep and 23,881,000 pigs. About 5,900,000 head of beef cattle were slaughtered in 1950. Wool production was 20,550 short tons. Rubber production (1951) was 21,200 metric tons; carnauba wax exports, 9,579 tons. In 1951, 34,100 tons of Brazil nuts (unshelled) were exported.

Manufactures.—Production in 1951 included cement 1,398,000 metric tons; pig iron 760,000 tons; raw steel 828,000 tons; electric energy 8,700,000,000 kw.hr.; beer 7,425,000 hl. Production at the national steel plant at Volta Redonda included coke 286,000 tons; pig iron 342,000 tons; rolled-steel products 343,000 tons; steel ingots 465,000 tons.

Mineral Production.—Production in 1951 included coal 1,944,000 metric tons and gold 141,397 troy ounces; iron ore, manganese, tungsten, bauxite and diamonds were also produced. In 1951, 1,005,371 metric tons of coal were imported.

(J. W. Mw.)

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Bread and Bakery Products. In every country regardless of its degree of industrialization bread always has been made by a batch process. During 1952 several reports in trade publications alerted bakers

in the United States to the fact that a new, continuous process of bread production had been developed, had survived the pilot plant stage and soon would be subjected to actual trial in the New York market. While details of the new baking process had not been made public late in the year, a continuous method of bread production, referred to as the "no-dough-time dough process," had been perfected on a laboratory scale and reported as early as 1940 by John C. Baker of Wallace and Tiernan Co., Inc., Belleville, N.J., the company which sponsored the more recent work.

Meanwhile, construction of what was designated by Peter Pirrie and Allen Somers as the largest automatic bread and cake bakery in the world was completed and baking operations were begun in 1952 by the American Stores company in Philadelphia, Pa. This bakery had an estimated bread production of 2,500,000 lb. weekly, and an undisclosed production capacity for cakes, sweet goods, doughnuts and pie.

E. Maes and his collaborators in Ghent, Belg., studied bread baking in the high-frequency electrical field and, as others had found, reported that a baking time of $1\frac{1}{2}$ to 2 min. sufficed to bake a loaf of bread. Such bread has no crust, and the flavour differs from that which develops when bread is baked by conventional methods.

Evidence that the baking of bread results in a partial cleavage of shortening, to form monoglycerides, had been adduced by N. H. Kuhrts and his collaborators. This observation was of interest in connection with the controversy over the use of monoglycerides and polyoxyethylene esters of fat-forming fatty acids as softeners in the production of commercial bread. The standards for bread which during the year were released by the U.S. federal security administrator permitted the limited use of monoglycerides as ingredients, but prohibited the use of polyoxyethylene monostearate and related compounds, because of insufficient evidence of their lack of toxicity and their value to consumers. Additional evidence to support the view that these softening agents do not retard the rate of staling was presented by S. S. Jackel and others. While some of the emulsifiers were not included by the U.S. Food and Drug administration in the list of permissible ingredients of bread, these chemicals continued to be widely used in commercial cake production. However, according to a report by Arthur T. Joyce, most of the cake consumed in the United States continued to be baked at home.

As a result of their investigations, the U.S. house of representatives select committee to investigate the use of chemicals in foods and cosmetics recognized in July 1952 the need for supplemental legislation to require the adequate pretesting of new ingredients of foods, including bakery products. A similar recommendation was embodied by trade associations of the baking industry of the United States in a statement of policies, in order that the public might be more adequately protected.

It had sometimes been recommended that bread in the home should be stored in the refrigerator. A release of the U.S. department of agriculture pointed out that the refrigeration of bread retards the development of mould, but at the same time it accelerates the staling of the bread. Recommendations were made to the industry for the delivery of fresher bread in the winter months in those communities where the weather is moderately cold. These recommendations included suggestions for the heating of the loading docks of wholesale bakeries, provision for warming and insulating delivery trucks and the elimination of the so-called drop boxes in which bread had been temporarily stored when delivered prior to the opening of the grocery stores where it was purchased by consumers.

Although statistics on the baking industry in the United States had not been released late in 1952, industry leaders agreed that the dollar volume remained at about \$4,000,000,000

annually, although the tonnage might be somewhat reduced. (See also FLOUR.)

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Brewing and Beer. Beer and ale sales in the United States for the fiscal year ending June 30, 1952, totalled 84,293,729 bbl. (of 31 U.S. gallons each), the third highest fiscal year on record. The largest sales total for a fiscal year was 86,992,795 bbl. in 1948.

Among important 1952 developments was the easing of the can situation for brewers. During 1951 tightening of metals supplies resulted in the National Production authority issuance of an order limiting brewers' use of cans to 70% of their 1950 base period usage. With the supply situation easing, an NPA order, effective April 1, 1952, raised the beer can quota to 90% of the brewers' 1950 base period usage. Indications were that can limitation might be lifted entirely by 1953 in view of the improved situation on formerly critical materials.

Since packaged beer accounts for approximately 75% of the brewers' national output—an exact reversal of the ratio maintained prior to 1934—and about 25% of package beer is sold in cans, the easing of the container situation apparently had a favourable effect on the beer market. This was reflected in sales figures for the first seven months of 1952, which showed a 2.7% gain over the corresponding period of 1951 and the highest seven-month total ever recorded.

The trend toward greater home consumption, which started about 1935 with the introduction of improved packaging designs, including the can and the no-deposit bottle, was continued during 1952. Another contributing factor, according to market analysts, was the spread of television, popularizing entertainment at home. Various market surveys had shown that beer is an important commodity in home entertainment.

Another important development was the continued progress in the safety campaign spearheaded by the United States Brewers foundation's industry-wide safety contest. In 1951 ten breweries completed the first six months of the year without lost time through accidents or injuries. During the similar period in 1952 this record was achieved by 17 breweries. On an over-all basis, the brewing industry's safety record for the first seven months of 1952 improved 17.18% over the same period in 1951, which itself had established industry safety records.

The foundation's Armed Forces Liaison program, helping to maintain wholesome conditions surrounding the retail sale of beer at establishments frequented by military personnel, extended its scope during 1952. An innovation was the distribution of ID (identification card) posters to beer retailers. These posters reproduced the ID card carried by military personnel and alerted tavern owners to check the age of uniformed men where there was suspicion that they might be minors. The posters, according to many military authorities, proved an effective check against serving minors.

The military liaison program was an extension of the industry's self-regulation program, operated by the foundation and designed to impress upon industry members and the public the importance of strictly observing all laws and regulations and of maintaining high standards of operation in the public interest.

The weekly average pay for brewery production workers during the calendar year 1951 was \$78.99, compared with \$64.38 for all manufacturing. A new high was recorded in May 1952, when, according to the U.S. department of labour, brewery workers' weekly earnings averaged \$82.78.

Federal excise taxes, at \$8 per barrel until Nov. 1, 1951, and \$9 per barrel thereafter, and special taxes on malt beverages for the fiscal year 1952, totalled \$740,284,506—the highest recorded in a single year. This brought the cumulative total since relegalization of malt beverage sales (April 7, 1933) to \$8,912,447,603. State and local taxes and licence fees in fiscal 1952 were estimated at \$215,000,000, raising the cumulative figure for that revenue to about \$2,945,000,000. Combined public revenue since 1933 thus had reached approximately an aggregate of \$11,857,000,000. (See also LIQUORS, ALCOHOLIC.)

(E. V. LH.)

Bridge, Contract: see CONTRACT BRIDGE.

Bridges, (Henry) Styles (1898—), U.S. senator, was born at West Pembroke, Me., on Sept. 9. He graduated in 1918 from the University of Maine and, after teaching at Sanderson academy, Ashfield, Mass., he became a county agricultural agent and a specialist on crops and soils for the University of New Hampshire. In 1934 he was elected governor of New Hampshire for the term 1935–37. In 1936 he was elected Republican senator from New Hampshire for the term 1937–43 and was re-elected for the terms 1943–49 and 1949–55.

In the senate Bridges voted consistently with the Republicans against New Deal measures, excepting the Selective Service act and the various defense and war appropriations. A bitter critic of Secretary of State Dean Acheson and his foreign policy, Bridges was denounced by Pres. Harry S. Truman in 1950 as a Kremlin asset in the cold war. On Aug. 19, 1951, Bridges with seven other Republicans of the senate armed services and foreign relations committees, denounced President Truman's dismissal of Gen. Douglas MacArthur as proof that the administration's far eastern policy had been "the most desolate failure in the history of our foreign policy." Primarily an internationalist, however, Bridges disagreed with both former Pres. Herbert

Hoover and Sen. Robert A. Taft during the "great debate" on U.S. foreign policy in 1951.

Senator Bridges was appointed minority leader of the senate on Jan. 8, 1952, to succeed Kenneth S. Wherry of Nebraska, who died in 1951. During the steel strike crisis of 1952, Bridges vehemently opposed President Truman's seizure of the steel industry, urging that this action be made the subject of a full-fledged congressional investigation.

Bridges. The world's longest spans of the various types built up to 1953 are listed in the table. There was one change in the table during 1952. The longest continuous girder span increased from 643 ft. to 676 ft.

World's Longest Spans by Type of Bridge

Type	Bridge	Location	Year Completed	Span
Cable Suspension	Golden Gate	San Francisco	1937	4,200 ft.
Transporter Bridge	†Sky Ride	Chicago	1933	1,850
Cantilever	*Quebec	Canada	1917	1,800
Steel Arch	Kill van Kull	New York	1931	1,652
Eyebar Suspension	*Florianópolis	Brazil	1926	1,114
Concrete Arch	Sando	Sweden	1943	866
Continuous Truss	Dubuque	Mississippi river	1943	845
Simple Truss	*Metropolis	Ohio river	1917	720
Continuous Girder	Düsseldorf-Neuss	Rhine river	1951	676
Vertical Lift	*Cape Cod Canal	Massachusetts	1935	544
Wichert Truss	Homestead	Pittsburgh	1937	533½
Swing Span	*Fort Madison	Mississippi river	1927	525
Tubular Girder	*Britannia	Menai straits	1850	460
Timber Span	*McKenzie River	Coburg, Ore.	1926	380
Prestressed Concrete Girder	Heilbronn	Germany	1949	353
Bascule	*Sault Ste. Marie	Michigan	1914	336
Simple Girder	Harlem river	New York	1951	330
Masonry Arch	Plauen	Saxony	1903	295
Single Leaf Bascule	*16th Street	Chicago	1919	260
Concrete Girder	Villeneuve	Seine river	1939	256

*Railroad bridge.

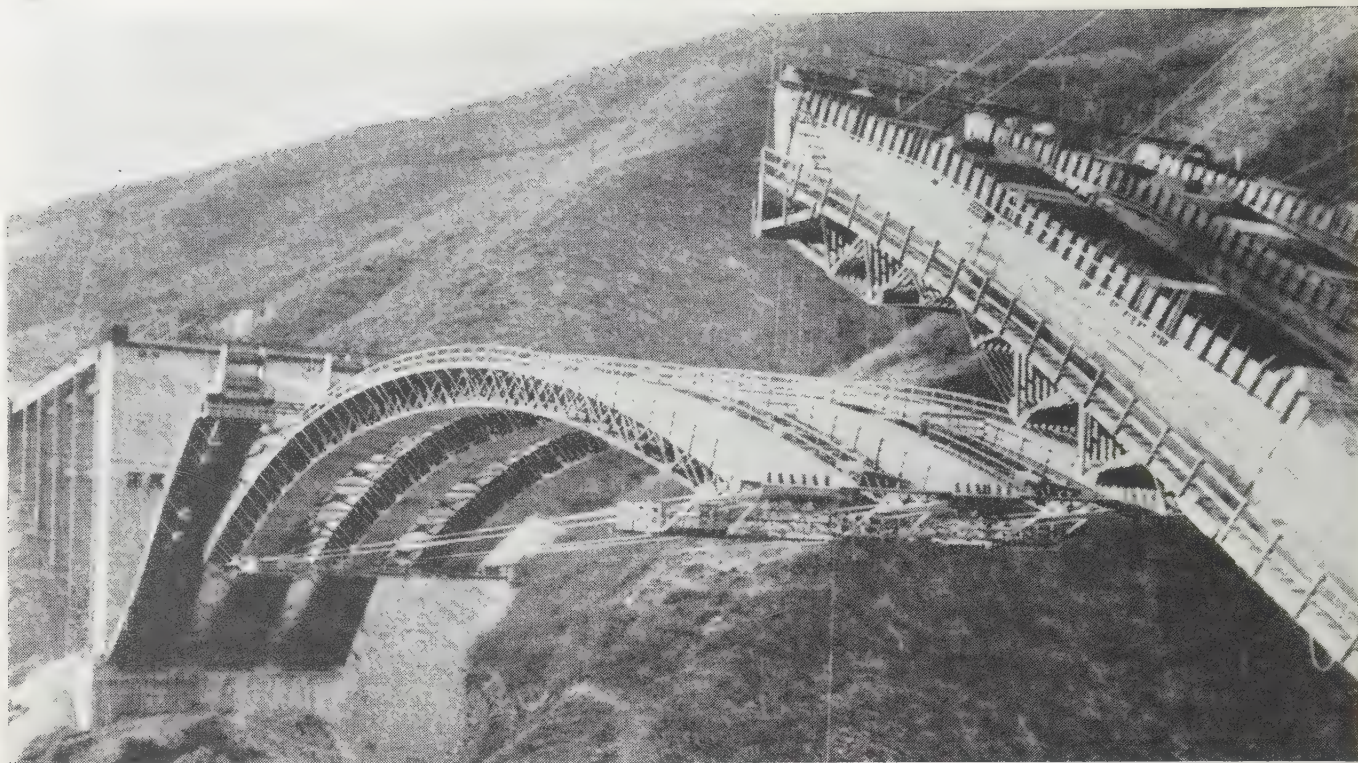
†Not standing.

United States.—On Dec. 1, 1951, the Golden Gate suspension bridge at San Francisco, Calif., the longest bridge in the world, was subjected to a 72-m.p.h. wind that caused the bridge to vibrate vertically through a maximum range of 85 in. with some damage to the bridge structure.

The Mackinac Bridge authority applied to the Reconstruction Finance corporation for an \$85,000,000 loan to build a bridge connecting the upper and lower peninsulas of Michigan. The bridge was to have 26 spans, including a 3,800-ft. suspen-

CHESAPEAKE BAY BRIDGE, a cantilever truss bridge linking the Delmarva peninsula with the mainland of Maryland to enable north-south express traffic to by-pass Philadelphia and other cities. It was dedicated July 30, 1952





RAISING THE CENTRE SECTION of one of three bridges on the Autopista highway which was being carved through the foothills of the Andes mountains in Venezuela in 1952. The prestressed concrete bridges were being built by a French firm, using a patented concrete system instead of steel

sion span.

The Washington State Toll Bridge authority made plans in 1952 for a \$70,000,000 bridge over Puget sound at Seattle.

In 1952 the California Toll Bridge authority considered a second crossing over San Francisco bay between Richmond and San Rafael. The estimated cost was \$46,000,000.

A bridge authority was created in 1952 to proceed with preparations for building a \$45,000,000 bridge across the Mississippi river at New Orleans, La.

The Chesapeake Bay bridge, just north of Annapolis, Md., was completed in 1952. The length was 21,286 ft. and included a 1,600-ft. suspension span with an underclearance of 186½ ft. The cost was \$42,600,000.

Plans were completed in 1952 for a new crossing over the Hudson river at Kingston, N.Y. The total length of the bridge was to be 7,700 ft. and the estimated cost was \$20,000,000. The two channels of the river were to be bridged by duplicate units of 500-800-500-ft. continuous deck spans.

To provide a link in the conversion of an existing overcrowded highway into an express highway of ample capacity, plans were started in 1952 to parallel the Thomas A. Edison bridge over the Raritan river near Perth Amboy, N.J., with an additional bridge of similar appearance. The new bridge was to be 4,400 ft. long with 200-250-200-ft. continuous plate-girder spans for the main crossing. The new bridge was planned for building in two stages, as required by traffic, at a total estimated cost of \$14,000,000.

The George P. Coleman Memorial bridge over the York river at Yorktown, Va., was completed in 1952 at a cost of \$8,000,000. It had two 500-ft. swing spans in tandem to provide a clear channel of 450 ft.

To connect Philadelphia with the Pennsylvania turnpike, an \$80,000,000 17-mi. four-lane highway with three bridges across the Schuylkill river was planned in 1952.

Construction was started in 1952 on a 14-mi. stretch of highway and bridge across Tampa bay, Florida, from St. Petersburg to Manatee county. The estimated cost was \$20,000,000. A 100-ft. lift span and a high-level cantilever bridge would provide for navigation.

A \$16,000,000 double-deck, high-level bridge was proposed in 1952 for Seattle, Wash., to cross an arm of Lake Union, with six traffic lanes on the upper deck and two reversible-flow lanes on the lower deck.

A 15-mi. bridge was started in 1952 over lower Tampa bay in Florida. It was to have three miles of trestle with a factory-prestressed concrete deck. The two channels were to be crossed by a 90-ft. twin-leaf bascule and a 1,584-ft. cantilever bridge. The estimated cost was \$15,000,000.

Selection of a site for a second floating bridge across Lake Washington, east of Seattle, Wash., was made in 1952. The length of the bridge was to be 7,600 ft. and the estimated cost was \$12,400,000.

Norfolk and Portsmouth, Va., were connected by a bridge-tunnel project in 1952. The bridge crossed the east branch of the Elizabeth river; the tunnel went under the west branch of the river. The bridge was 2,135 ft. between abutments and included a double-leaf rolling-lift bascule. The cost of the bridge was \$7,415,000.

A bottleneck on the road between New York city and Long Beach was removed with the completion of a \$6,000,000 153-ft. double-leaf bascule in 1952. The total width was 78 ft. The new bridge was built adjacent to the old bridge which was then demolished.

In Jacksonville, Fla., two bridges were started over the St. Johns river. The Gilmore street bridge, 3,600 ft. long, estimated at \$5,300,000, was to include a double-leaf bascule span. The Arlington bridge was to be 7,375 ft. long and was estimated to cost \$11,300,000. It would include a cantilever with 406-810-406-ft. spans.

Dade county, Fla., built two skewed bascule bridges in 1952. This type of bridge was built only once before, in Brooklyn, N.Y., in 1944.

In Kentucky relocation of highways required by flooding of valleys for reservoirs required bridges with exceptionally high piers. In the Wolfe Creek reservoir a pier 203 ft. high was built

before the reservoir was filled.

A concrete viaduct of novel design, forming part of a traffic interchange for the George Washington bridge, was completed in 1952. It consisted of continuous hollow concrete box girders on a single row of long slender round columns. There were ten 66-ft. spans, all on a curve of 200-ft. radius.

In 1952 Chicago, Ill., planned to add three bridges to its long list—a twin bascule at Congress street and new bridges at Halsted street and at Van Buren street, all over the Chicago river.

Construction was started in 1952 on a bridge over Bay St. Louis in Mississippi. It required the precasting and floating into place of 182 deck sections weighing 119 tons each.

Near Port Townsend, Wash., a girder bridge with a 250-ft. main span was built in 1952 in an unusual combination of concrete and steel box girders. Two 55-ft. concrete box-girder cantilever arms carried a 140-ft. steel box-girder suspended span.

In King county, Wash., a pair of welded box girders, 111 ft. long, were the main members of a new bridge built in 1952.

At Duvall, Wash., an 1,182-ft. bridge was built in 1952 of continuous reinforced-concrete box girders of constant depth. The main crossing was continuous with 117-160-117-ft. spans, 7 ft. deep. The box form of construction gave the bridge a smooth exterior.

Canada.—A contract was awarded in 1952 to build a suspension bridge with a 1,447-ft. main span across Halifax harbour in Nova Scotia with a vertical clearance of 165 ft. at a cost of \$8,000,000. Completion was scheduled for 1954.

In 1952 Canadian army engineers commenced the construction of a 1,600-ft. \$2,500,000 bridge in the Donjek valley of the Yukon territory, less than 300 mi. from the Arctic circle, to replace wooden bridges that were washed out. The new bridge was to have eight steel and concrete spans.

Plans were prepared in 1952 for a new bridge to replace the Duplessis bridge over the St. Maurice river at Three Rivers, Que., which collapsed Jan. 31, 1951. As the failure was attributed solely to defective material, the new design was made similar to the original.

Brazil.—Construction was started in the state of Rio Grande do Sul in 1952 on an 856-ft. reinforced-concrete arch bridge with a main span of 610 ft. and a rise of 92 ft. at an estimated cost of \$750,000. This would be the third largest reinforced-concrete arch in the world.

Three other long-span prestressed-concrete bridges in Brazil were finished and three more started. The Galeao bridge had 15 spans of prestressed concrete, with the longest span 142 ft.

Cuba.—The Canimar river was bridged in 1951 by three 218-ft. reinforced-concrete arches. The total length of the bridge was 973 ft., with the deck 115 ft. above water and 53½ ft. wide. The bridge was completed in nine months.

England.—The longest prestressed-concrete bridge in England was a cantilever with a main span of 150 ft., built in 1951. A 60-ft. prestressed-concrete span was hung in the centre. The total length was 247 ft.

A new suspension bridge was planned in 1952 near Chepstow over the Severn river.

France.—A concrete box-girder cantilever bridge built in France in 1951 introduced a novel idea in bridge construction. The bridge rested on two struts on the main pier, inclined to pass their resultant through the centre of the pier base to minimize the size of the pier. The bridge crossed the Donzere-Mondragon canal in the Rhone river valley.

Germany.—A new record for span length of continuous-girder bridges was set in 1951 by the completion of the Düsseldorf-Neuss span over the Rhine. This bridge had a total length of 2,500 ft. with a record-breaking main span of 676 ft., flanked

by 338-ft. spans.

The girders were two continuous boxes 25 ft. wide, spaced 20 ft. apart. Cantilevered 14-ft. sidewalks brought the total width of bridge to 98 ft. All shop fabrication was by welding, made possible through use of a new high-strength weldable alloy steel. Rivets were used only in field splices. The webs were unusually thin and were stiffened in the manner of aircraft construction. Cantilever construction of the main span reduced dead load bending moments at the centre and permitted a girder depth of only 11 ft. at mid-span. At the piers, the girder depth was 25½ ft.

Portugal.—The largest bridge in Portugal was completed in 1952 across the Tagus river, above Lisbon. It had five 336-ft. tied-arch spans with plate girder stiffening below deck. The cost was \$3,500,000. (See also ROADS AND HIGHWAYS.) (D. B. S.)

British Borneo. British-administered territories in Borneo (including island of Labuan) and Sarawak, and the protected state of Brunei. *North Borneo*: area, 29,387 sq.mi.; pop. (1951 census) 334,141, including 74,374 Chinese; capital, Jesselton (pop. c. 5,000); governor in 1952, Sir Ralph Hone. *Sarawak*: area, 47,071 sq.mi.; pop. (1947 census), 546,385, including 145,158 Chinese; (1951 est.) 570,000; capital, Kuching (pop. c. 38,000); governor (and high commissioner for Brunei), Sir Anthony Abell. *Brunei*: area, 2,226 sq.mi.; pop. (1947 census) 40,657; (1951 est.) 48,000; capital, Brunei or Daru'l Salam (pop. 1947, 10,620); ruler, Sultan Omar Ali Saifuddin.

Language: various indigenous; Chinese; Malay (the lingua franca). Religion: Moslem (Shafi'i sect, etc.); various pagan; many Chinese Christians.

History.—In North Borneo 1952 began with a favourable trade balance of more than 40,000,000 Malayan dollars, but the subsequent fall in the price of rubber and other raw materials made it improbable that this record figure could be reached again at the end of 1952. Development, however, was being pressed forward with encouraging results and included prospecting for bauxite and oil. The outstanding political events of the year were the opening of the new combined supreme court for North Borneo, Sarawak and Brunei (previously there had been two separate judiciaries—one for North Borneo, another for Sarawak and Brunei); and the inauguration of a more modern system of local government by the setting up of a (nominated) local government authority in Kota Belud. In Sarawak on June 25 a new oil mining lease was negotiated between the government and Sarawak Oilfields Ltd. under which the area held under lease would, within 15 years, be reduced to 25% of the colony (the old lease covered all of it); the minimum royalty, based on a percentage of production, was revised to £10,000 a year, and the company became for the first time liable to income tax. Communist trouble broke out near Kuching on Aug. 7 with robbery and murder by a small gang of armed Chinese which probably came from and certainly escaped over, the Indonesian border. The governor declared a state of emergency and several known Communists were arrested. The non-Chinese communities immediately offered to help but the prompt measures taken were effective. (K. G. B.)

Education.—(1951) North Borneo: primary schools 217, pupils 20,674; secondary 17, pupils 650; 1 vocational school. Sarawak: government schools 45, pupils 3,641; local authority schools 74, pupils 2,868; mission schools 69, pupils 7,988; Chinese schools 216, pupils 26,365. Brunei: primary school attendance 4,661.

Finance and Foreign Trade.—Monetary unit: Malayan dollar, valued at 32.67 cents U.S. in 1952.

	North Borneo	Sarawak	Brunei
	(In millions of Malayan dollars)		
Budget (1952 est.)			
Revenue	21.1	39.5	69.3
Expenditure	15.6	31.3	17.9
Imports (1951)	70.2	383.7	50.4
Exports (1951)	113.7	508.3	271.8

Principal production figures (1951): North Borneo, rubber (exports) 21,698 tons, rice 24,000 tons, copra 12,456 tons; Sarawak (exports), crude oil 3,206,152 tons, refined petroleum 1,741,446 tons, rubber 42,521 tons, timber 54,528 tons; Brunei, crude oil 37,133,500 bbl., rubber 5,161,694 lb.

British Columbia. Third largest and the most westerly of Canada's ten provinces, British Columbia has an area of 366,255 sq.mi. of which 6,976 sq.mi. are water. It is bounded on the west by the Pacific ocean; on the south by the states of Washington, Idaho and Montana; on the east by the province of Alberta; and on the North by Alaska, Yukon and the Northwest Territories.

The population, as taken for the 1951 census at June 1, was 1,165,210 (1941 census, 817,861). The estimated population at June 1, 1952, was 1,198,000. The 1951 census indicated 371,739 rural dwellers and 793,471 urban dwellers; 596,961 male and 568,249 female residents. About 55% of the population dwelt in the southwestern corner of the province. The chief cities and their 1951 populations were: Vancouver (344,833; metropolitan Vancouver, 530,728); Victoria, the capital (51,331; metropolitan Victoria, 104,303); and New Westminster (28,639).

History.—In the fourth session of the 22nd parliament of British Columbia, February 19 to March 26, 1952, the following measures were passed: an act authorizing the implementation of an agreement between the federal government and the province in regard to payments for the rental of certain tax fields; an act authorizing the borrowing of \$6,050,000 for the building and equipping of public buildings; an act allowing for the appropriation of a part of revenue surpluses for the building of public buildings, roads and bridges; and an amendment to the oleomargarine act of 1949 allowing the sale of coloured oleomargarine within the province.

On Jan. 19, 1952, Premier B. I. Johnson tendered the resignations of the three Progressive Conservative cabinet ministers which, in effect, dissolved the coalition government of Liberals and Progressive Conservatives.

In January, P. E. George, former mayor of Victoria, was appointed chairman of the public utilities commission, following the death of W. A. Carrothers, former chairman.

Tolls on the Pattullo bridge at New Westminster ceased on Feb. 12, saving the public an estimated \$900,000 per year. In February the province negotiated a \$30,000,000 loan in the United States.

In March it was announced that the province would spend about \$32,000,000 on roads and bridges during 1952-53. In April it was announced that West Coast Transmission would construct a \$100,000,000 natural gas pipe line from Alberta through central British Columbia to the lower mainland. In May it was recommended that a forest management licence be granted to Celgar Development Co., Ltd., to establish a \$65,000,000 integrated forest industry in the Arrow lakes region. On June 10 Vancouver Island's first newsprint plant, a \$21,000,000 plant at Duncan Bay, started production.

On June 12, 1952, a provincial election was held with the following party standings, with previous standings in parentheses: Social Credit 19 (0); Liberal 6 (23); Progressive Conservative 3 (11); Co-operative Commonwealth Federation 18 (8); Labour 1 (1); Coalitionist 0 (3); Independent 0 (2); vacancy 1 (0). The majority of voters favoured adoption of daylight saving and broadening of the liquor act.

On Aug. 8 it was announced by Premier W. A. C. Bennett that hospital insurance premiums would be reduced from \$42 to \$39 for married persons and from \$30 to \$27 in the case of single persons; the coinsurance policy of \$35 maximum per year was changed, so that a payment of \$1 per hospital day was charged with no maximum.

In October Imperial Oil Ltd., Sarnia, Ont., commenced refining oil from Alberta's Leduc field in commercial quantities at its Ioco, B.C., plant.

Members of the provincial executive council, or cabinet, and their portfolios at the close of 1952 were: W. A. C. Bennett, premier and president of the council; W. D. Black, provincial secretary and municipal affairs; R. W. Bonner, attorney general; R. E. Sommers, lands and forests and mines; E. M. Gunderson, finance; K. Kiernan, agriculture; P. A. Gagliardi, public works; R. Chetwynd, railways, trade and industry and fisheries; L. Wicks, labour; E. Martin, health and welfare; Mrs. T. Rolston, education.

Education.—During the school year ending June 30, 1951, 173,354 students were enrolled in the elementary (109,094), elementary-senior-junior high (12,992), superior (1,997), junior, junior-senior and senior high (49,271) schools of the province. Teaching staffs comprised 6,272 teachers as follows: in the elementary 3,522; elementary-senior-junior high 477; superior 87; junior, junior-senior and senior high 2,143; and 43 unclassified. Higher education is provided by the University of British Columbia, Vancouver (attendance 1951, 6,432), a provincially endowed institution, two teacher-training schools located in Vancouver and Victoria, a vocational institute at Vancouver and a junior college at Victoria.

The total net cost for the enrolment of 173,354 was \$51,099,914. The deputy minister and superintendent of education was F. T. Fairey.

Table I.—Economic Activity in British Columbia

	Unit	1951	1950	1952 Preliminary estimates
AGRICULTURE:				
Total value of production	\$	155,000,000	136,690,400	160,000,000
Livestock	\$	27,000,000	24,144,000	
Poultry products	\$	20,000,000	16,976,000	
Dairy products	\$	32,000,000	30,821,000	
Fruits and vegetables	\$	30,000,000	28,384,600	
Field crops	\$	38,000,000	28,518,000	
Miscellaneous	\$	8,000,000	7,846,800	
FISHERIES:				
Total value of production	\$	83,000,000	68,821,358	81,000,000
Pack of canned salmon	cases	1,955,475	1,482,560	1,950,000
FORESTRY:				
Total value of production	\$	504,807,930	468,371,142	520,000,000
Timber scaled	M.B.M.	4,696,347	4,560,080	4,600,000
Paper production	ton	484,581	477,628	
MINING:				
Total value of production	\$	175,659,591	148,155,060	165,000,000
Lead	\$	50,316,015	44,391,530	
Zinc	\$	66,448,242	48,882,765	
Coal	\$	10,233,353	10,025,626	
Gold	\$	10,345,858	11,404,270	
INTERNAL TRADE:				
Index of wholesale sales 1935-39=100		404.0	351.3	412.0
Total value of retail sales	\$000	1,137,867	1,050,054	1,215,000
Value of retail department store sales	\$000	120,203	113,273	135,000
Railway freight loaded	ton	11,600,237	10,834,135	12,000,000
Consumption of electric power	000 kw.hr.	4,186,972	3,960,698	4,360,000
Construction, building permits	\$000	87,344	92,008	82,000
Bank debits	\$000	9,945,579	8,446,567	11,000,000
Index of employment 1926=100		190.2	180.7	187.0
Salaries and wages paid	\$000	825,000	718,202	875,000

Communications.—The total highway mileage as of March 31, 1951, excluding the Alaska highway, was 22,509 of which 10,414 mi. were surfaced, 10,087 mi. were improved earth and 2,008 mi. unimproved earth. Railway mileage as of Dec. 31, 1951, was 4,773 of main line track and 1,221 of sidings. During 1951 approximately 6,542,254 tons of cargo were loaded at British Columbia ports on vessels destined to foreign countries, while 3,028,605 tons of cargo received from foreign countries were unloaded at local ports. In 1950 the total number of telephones was 277,341; this included 111,413 on automatic switchboards.

On Oct. 31, 1951, there were 207,230 passenger cars and 70,270 commercial vehicles registered within the province.

Finance.—On March 4, 1952, B. I. Johnson, premier and minister of finance, reported that revenue collected for the fiscal year ended March 31, 1951, was \$124,029,000; expenditures were \$116,079,000; the net debt at Dec. 31, 1951, was \$191,091,839, an increase of \$19,879,849. Anticipated revenues were \$141,986,869 and expenditures \$141,905,433 for the fiscal year ending March 31, 1953.

Table II.—Principal Manufacturing Industries of British Columbia

Industry	Gross value of Products 1950	1949
Sawmills	\$293,022,294	\$209,607,511
Pulp and paper	86,886,870	69,925,185
Fish processing	67,728,992	55,533,356
Slaughtering and meat packing	50,883,632	49,120,931
Petroleum products	38,675,270	34,409,015
Sash, door and planing mills	34,070,701	26,522,103
Veneers and plywoods	30,047,542	25,239,202
Miscellaneous food industries	28,668,471	23,057,601
Fertilizers	27,745,806	28,060,751
Fruit and vegetable preparations	24,307,003	22,622,366
Total all manufacturing industries	1,133,016,956	959,008,088

Agriculture, Fisheries, Mining, Forestry.—Preliminary provincial departmental estimates indicated that all four chief basic industries, viz., agriculture, forestry, fisheries and mining, would just about maintain the highs established during 1951. Price increases were more moderate during 1952, being approximately 3% higher than in 1951. During 1952 there was considerable concern regarding the marketing of lumber products, apples, and fish products, especially to the United Kingdom market.

Manufacturing.—Preliminary statistics relating to the manufacturing industries of the province indicated that the 1951 gross value of production would be higher than the previous all-time high established during 1950. This new all-time high was well maintained during 1952 with increased production in the pulp and paper and chemical industries. Many existing manufacturing plants in British Columbia added additional capacities to already existing plants during 1952. (G. T. H.)

British East Africa. This term is used to include Kenya, a colony and protectorate; Somaliland, protectorate; Tanganyika, trust territory; Uganda, protectorate; and Zanzibar, protectorate, comprising the islands of Zanzibar and Pemba. Areas, population and chief towns are in the accompanying table.

The East Africa High commission, comprising the governors of Kenya, Tanganyika and Uganda, administers the public utilities and other central services of these territories, and has power to legislate, with the advice and consent of a central legislative assembly. Governors (Dec. 31, 1952): Kenya, Sir Philip Mitchell; Somaliland, Sir Gerald Reece; Tanganyika, Sir Edward Twining; Uganda, Sir Andrew Cohen. Zanzibar: ruler, Sultan Khalifa bin Harub; resident, John Rankine. East Africa High commission: chairman, Sir Philip Mitchell.

	Area (sq. mi.)	Pop. (1951 est.)	Chief towns (pop. 1948 census)
Kenya	224,960	5,680,000	Nairobi (cap., 119,489), Mombasa (port, 84,746)
Somaliland	67,936	500,000	Hargeisa (cap., 30,000*), Berbera (port, 15,000 (hot season), 30,000 (cold season)*)
Tanganyika	362,688	7,827,000	Dar es Salaam (cap., 69,277)
Uganda	93,981	5,187,000	Entebbe (cap., 6,000*)
Zanzibar	1,020	273,000	Zanzibar (cap., 45,275)

*1952 est.

History.—*Kenya.*—Early in Feb. 1952 Princess Elizabeth and the duke of Edinburgh arrived by air at Nairobi en route to Ceylon and Australia and received an enthusiastic welcome from all communities. After a few days of crowded engagements they went to their hunting lodge at Nyeri. There they received, on Feb. 6, the tragic news of the king's death. The queen and the duke left immediately by air for the United Kingdom.

A. T. Lennox-Boyd, then minister of state for the colonies, had visited Kenya in January and held discussions with the leaders of the various communities. Elections for the new Kenya legislative council were held in May; the council met in June, with an interim composition of 26 official and 28 unofficial members. E. Mathu, leader of the African unofficial members, was appointed to the executive council.

The expansion and reorganization of port facilities at Mombasa had made such progress that by August 100,000 tons of cargo were being handled each month and shipping delays eliminated.

During the year the incidence of crime in the towns, particularly Nairobi, and the lawless conduct of the Kikuyu in the Nyeri and Nanyuki areas under the influence of the anti-European Mau Mau secret society led to firm government action. In April five Kikuyu villages were collectively fined £2,500 for suppressing evidence in cases of hut burning instigated by this society. In August a remarkable demonstration by Kikuyu Christians, both Protestant and Roman Catholic, took place. At a mass meeting at Kiambu they united in condemning Mau Mau and in promising the government every support in suppressing it.

Somaliland.—An investigation into irrigation possibilities in

Somaliland protectorate in 1951 had been sufficiently encouraging to justify a Colonial Development and Welfare grant for a hydrological survey being planned in 1952. The establishment of local government in the protectorate had been started in 1951, and there were 130 local authorities, as well as district advisory councils and welfare committees, in operation in 1952. Intertribal raiding over the Ogaden frontier had, however, not entirely ceased.

Tanganyika.—The minister of state for the colonies visited Tanganyika in Jan. 1952 and emphasized that the Conservative and Labour parties in Great Britain were agreed on the policy to be followed in the political development of Tanganyika; and in June the secretary of state announced that the British government accepted the proposals made by the Tanganyika Constitutional Development committee in 1951 for racial parity between European, African and Asian unofficial members in the legislative council. The new council, however, was not to be formed for about five years in order to give time for the full establishment of the reformed system of local government and for experience in its working.

Good rains resulted in good crops in Tanganyika, but considerable damage was done to sisal in the Southern province by a cyclone which struck the Mikindani area on April 15. About 30 Africans lost their lives. The Rufiji rice-growing scheme, based on the hiring of tractor-drawn plows to African farmers, made big strides and about 6,000 ac. were being brought under cultivation. At Moshi, in March, the governor opened the new £200,000 business and community centre of the Chagga Co-operative union of coffee growers.

Diamond exports from Tanganyika, suspended for several months during negotiations about marketing between J. Williamson, discoverer and owner of Madui diamond mine, and the Diamond corporation, were resumed in June. A fillip was given to the production of lead and copper by the grant of a loan of \$1,640,000 by the U.S. government to Uruwira Minerals, Ltd.

Uganda.—In June 1952 the Uganda executive council was enlarged by the appointment of four more unofficial members, of whom one was European, one Indian and two African. The building of the dam across the Nile at Jinja made good progress, and it was expected that one generating unit would be operating by Sept. 1953 and three more by the middle of 1954. Textile, cement and other industries would be developed with power from this source as would be the mining projects at Kilembe and Tororo. The former, in the west of the protectorate, was based upon an extensive deposit of copper and cobalt. Production would begin in 1955, the copper being smelted on the spot. Meanwhile the Mombasa-Kampala railway was being extended to Kilembe; a considerable area of undeveloped agricultural land would be opened up in the process. In the east, at Tororo, extensive limestone deposits, which included a valuable mineral complex of phosphorus, niobium and other ores, were to be developed. These deposits were close to the railway and at the end of a power line from the Jinja dam.

Legislation was introduced at the end of the year imposing an export duty on coffee, and virtually restricting the opening of new curing works and hulleries to those approved for operation by African growers and co-operatives. A Coffee Industry board was also established. The reorganization of the cotton ginning industry continued. The Uganda government took steps during the year to accelerate the development of technical education. In June two expeditions, one British and one Belgian, started jointly to explore and make a geological map of the Ruwenzori range (the Mountains of the Moon).

Zanzibar.—The 1951-52 Zanzibar clove crop was very poor after a bumper yield the year before, and the prospects for 1952-53 were not very good either. The poor clove crop and a

sharp drop in the prices of coconut products caused a general economic recession and severely affected revenue. Instead of showing a surplus as in recent years the budget for 1952 was likely to show a substantial deficit. However, efforts were being made to diversify the islands' economy and, in 1952, grants of more than £50,000 were made from Colonial Development and Welfare funds for the building of a pineapple factory and the expansion of the citrus industry.

Finance and Trade.—Monetary unit: East African shilling, divided into 100 cents, valued at parity with the shilling sterling and at 14 cents U.S. (1952).

	Revenue (1952 est.)	Expenditure (1952 est.)	Imports (1951)	Exports (1951)
Kenya	£16,219,906	£12,737,447	£53,328,000	£24,068,000
Somaliland	1,227,652*	1,227,652	1,635,656	894,422
Tanganyika	12,869,835	12,769,460	31,642,000	41,497,000
Uganda	12,947,501	12,103,563	22,436,000	47,197,000
Zanzibar	1,518,831	1,426,520	5,217,000	6,184,000

*Including £599,427 grant-in-aid.

Principal exports: *Kenya*—wheat, maize, sisal, pyrethrum, tea, gold, silver, kyanite; *Somaliland*—hides, skins, gums, livestock, ghee; *Tanganyika*—diamonds (1951 provisional £847,832), textiles, fibres, lint (£26,660,723), hides (£1,805,010); *Uganda*—raw cotton, sugar; *Zanzibar*—cloves, coconut oil, oil cake.

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British Empire: see COMMONWEALTH OF NATIONS.

British Guiana. A British colony, British Guiana is located in northeast South America between Venezuela, Brazil and Surinam. Area: c. 83,000 sq.mi. Pop.: (1946 census) 375,701, including 16,322 Amerindians, 143,385 Negroes and 163,434 East Indians; (1951 est.) 431,000. Language: English; various East Indian languages. Religion: Christian (60%); Hindu (30%); Moslem (8%). Principal towns (pop., 1950 est.): Georgetown (cap., 84,794); New Amsterdam (11,812). Governor in 1952, Sir Charles Woolley.

History.—Final details of the new constitution, which brought British Guiana into line with the more advanced British Caribbean colonies, were disclosed in 1952. It was expected that general elections with full adult suffrage would be held in the first half of 1953. The list of voters was prepared. The legislature voted in favour of participation in a West Indian customs union, but rejected on principle the proposals for a British West Indian federal government.

The report of a committee appointed to inquire into the cost of primary education aroused great interest. Two recommendations—that the school entry age be raised from five to six and that a double shift system be introduced to make the maximum use of available resources—met with strenuous criticism.

Both sugar and rice production increased in comparison with the previous year's. The government announced the formation of a company with authorized capital of B.W.I. \$10,000,000 for further development of the rice industry. Production of bauxite, gold and diamonds also rose. A large-scale water control scheme gave security to coastland farmers in a district of growing commercial importance. A preliminary mission of the International Bank for Reconstruction and Development visited the colony. A full-scale mission was expected to follow it.

Education.—Elementary school pupils (1951), 77,907; expenditure on elementary education B.W.I. \$2,274,875.

Finance and Trade.—Monetary unit: British West Indian dollar valued in 1952 at 58.33 cents U.S. Budget (1952 est.): revenue B.W.I. \$25,586,402; expenditure B.W.I. \$25,297,994, exclusive of colonial development funds. Foreign trade (1951): imports B.W.I. \$65,000,000; exports, including re-exports, B.W.I. \$58,560,024. Principal exports: sugar, bauxite, rum, rice, diamonds, timber, balata. Production: sugar crop (1952) 217,306 tons; bauxite (1951) 2,002,744 tons. (P. H.-My.)

British Honduras. A British colony in Central America bounded by Mexico and Guatemala, British Honduras has an area of 8,598 sq.mi. Pop.: (1946 cen-

sus) 59,220, including 10,030 Amerindians; (1951 est.) 69,644. Language: English; Spanish and Indian dialects. Religion: mainly Roman Catholic. Chief towns (pop., 1946): Belize (cap., 21,886), Stann Creek (3,414). Governors (1952): Sir Ronald Garvey and (from March 24) Patrick Renison.

History.—The post-World War II development program entered a further stage during 1952 with a grant of another £800,000 from funds established under the Colonial Development and Welfare acts. This was mainly earmarked for agricultural development following the opening up of the country by the construction of feeder roads during the first phase of the development program. The Stann Creek district had land communication with the capital. There was considerable citrus development in this district; citrus exports from the colony reached a value of \$731,916 in 1951, an increase of more than \$200,000 from the previous year.

The Colonial Development corporation's project for growing ramie fibre in the western district seemed promising. In the Stann Creek valley, the corporation had 1,800 ac. under bananas and regular monthly shipments were being made to the United Kingdom. The corporation livestock project proved disappointing and it was decided to abandon it. Private cattle owners in the area were considering a pilot scheme to replace the stock farm which had been established by the corporation. The corporation's Fort George hotel was completed at the end of 1952.

In June the legislative council decided that the colony was not prepared to commit itself on a West Indian federation and expressed the view that public feeling in the colony was against it. In July proposals for a new constitution were passed by the legislative council and forwarded to the secretary of state for the colonies. They included universal adult suffrage and an elected majority on the legislative council.

Education.—Grant-aided primary schools 92 (including 65 controlled by the Jesuit mission), pupils 9,888; secondary schools 5, pupils 1,685; one technical school.

Finance and Trade.—Currency: British Honduras dollar, valued in 1952 at 70 cents U.S. Budget (1952 estimate): revenue \$5,028,935; expenditure \$5,094,101. Foreign trade (1951): imports \$12,407,332; exports \$6,234,131. Principal exports: timber, coconuts, chicle and grapefruit.

(P. H.-My.)

British Malaya: see MALAYA, FEDERATION OF; SINGAPORE.

British Somaliland: see BRITISH EAST AFRICA.

British South African Territories. The three territories in southern Africa which are not part of the Union of South Africa, Basutoland (colony), Bechuanaland protectorate and Swaziland (protectorate), are generally referred to as the High Commission Territories in South Africa.

	Area (sq.mi.)	Population (1946 census)	Population (1951 est.)	Capital (with approx. 1952 pop.)
Basutoland	11,716	556,390	578,000	Maseru (3,400)
Bechuanaland	c.275,000	293,920	290,000	
Swaziland	6,704	185,215	200,000	Mbabane (1,600)

*Administrative headquarters are in special reserve at Mafeking, Cape province, Union of South Africa.

High commissioner in 1952, Sir John Le Rougetel. Resident commissioners: (Basutoland) E. P. Arrowsmith; (Bechuanaland) E. B. Beetham; (Swaziland) D. L. Morgan.

Basutoland.—Revenue rose during 1952, mainly as a result of relaxation of the import restrictions previously imposed by the Union of South Africa government to improve the balance of external payments. But the steady rise in prices raised the costs of administration and absorbed the additional revenue.

The aerial survey of the colony was continued, but its completion was delayed by unforeseen difficulties in the ground-control triangulation which lacked reliable Basuto heliograph operators.

Work proceeded slowly on the construction of the new moun-

tain motor road into the heart of Basutoland from Maseru to Marakabei and Ntaotes.

The first trade union was registered officially, the Basutoland Typographical Workers' union, which organized men employed by the mission printing presses.

The report was published of a unique agricultural survey conducted on scientific lines by A. J. A. Douglas and R. K. Tennant, in order to measure actual and potential production on typical holdings.

Bechuanaland.—It was announced in March in both houses at Westminster that the previous refusal to recognize Seretse Khama as chief of the Bamangwato was permanent and final, and that he could not return from exile until a new chief had been firmly established. Lord Salisbury later received in London a delegation from the tribe, but refused to alter his decision. Unrest continued in the territory and on June 1 serious disturbances broke out; police reinforcements were rushed to the affected areas. In the riots three African policemen were killed and several officials and police injured. Later 26 tribesmen and 10 women were put on trial for murder and public violence. The banishment order against Tshekedi Khama, former regent of the tribe, was subsequently withdrawn and he returned as a private individual.

Swaziland.—The drought which afflicted southern Africa reduced maize yields considerably. In view of the increasing consumption of maize, the administration was greatly concerned at the prospect of a shortage later in the season, especially in the low-veld areas, and plans were considered to meet the situation. The banana plantations at Kubuta began production and exports increased steadily. Agricultural exports generally were about 50% more than in the previous year, despite the drought, and further increase was expected.

The presence of metal zinc, suspected for some time, was confirmed. It occurs as zinc sulphide in association with barytes. Geological mapping continued, the area mapped reaching almost 40% of the whole territory.

A loan of £44,000 was raised to buy heavy road equipment to meet the most pressing demands for road construction.

A new European primary school was built at the headquarters of the Usutu forests project. (See also SOUTH AFRICA, UNION OF.) (J. L.)

Education.—Schools, with the numbers attending in parentheses, were in 1951:

	Primary	Secondary and postprimary	European
Basutoland	889 (88,247)	10 (1,151)	7 (128)
Bechuanaland (1950)	152 (16,346)	1 (34)	9 (224)
Swaziland	207 (15,035)	13 (416)	11 (705)

A small private university from which students took external degrees of the University of South Africa was maintained by the Roman Catholic mission at Roma, Basutoland.

Finance and Trade.—Monetary unit: South African pound (£S.A. 1 = £1 sterling).

	Budget est., 1952-53 Revenue*	Expenditure*	Foreign trade, 1951 Imports	Exports
Basutoland	£1,117,087	£1,147,214	£2,836,049	£2,752,054
Bechuanaland	699,352	768,889	1,674,372	2,153,365
Swaziland	620,600	614,747	1,878,984	2,639,765

*Excluding Colonial Development fund expenditure estimated for the year at: Basutoland £129,235, Bechuanaland £167,746, and Swaziland £142,074. Deficits to be met from accumulated surpluses.

Principal exports: *Basutoland* livestock, grain, wool hides and skins; *Bechuanaland* beans, dairy produce, livestock, hides and skins, gold; *Swaziland* livestock, tobacco, asbestos (34,964 short tons in 1951), gold, peanuts, tung oil.

British West Africa. This term includes the following British territories on the west coast of Africa: Gambia, colony and protectorate; Gold Coast, colony and protectorates, with which Togoland, under United Kingdom trusteeship, is administered; Nigeria, colony and protectorate,

with which Cameroons under U.K. trusteeship are administered; Sierra Leone, colony and protectorate. Areas, populations and chief towns are given in the accompanying table.

Governors (Dec. 31, 1952): Gambia, Sir Percy Wyn Harris; Gold Coast, Sir Charles Arden-Clarke; Nigeria, Sir John Macpherson; Sierra Leone, Sir George Beresford-Stooke. Prime minister, Gold Coast: Kwame Nkrumah.

	Area (sq.mi.)	Population (1951 est.)	Chief towns
Gambia	4,074	279,297*	Bathurst (cap., 21,152†)
Gold Coast	78,802	4,333,000	Accra (cap., 135,926‡), Kumasi (78,483‡), Sekondi-Takoradi (44,557‡)
Togoland	13,041		...
Nigeria	338,593	25,000,000	Lagos (cap., 230,000§), Ibadan (335,500||), Kano (102,000||)
Cameroons	34,081	1,000,000	...
Sierra Leone	27,925	1,891,000	Freetown (cap., 64,576‡)
*1951 census.	†1944 census.	‡1948 census.	§African pop., 1950 census.
||African pop., 1949 est.			

History.—Three notable pan-West African gatherings took place during the year: the seventh conference of directors of public works at Freetown, Sierra Leone, in February; a fisheries conference at Kissy, in the same colony, on April 22; and the first meeting of the West African Inter-Territorial conference at Accra, Gold Coast, in July, under the chairmanship of the governor of Nigeria. The Inter-Territorial conference, which consisted of eight members drawn equally from the Nigerian council of ministers, the Gold Coast cabinet and the executive councils of Gambia and Sierra Leone, dealt mainly with inter-territorial and international collaboration in west African research, economy and social affairs.

Gambia.—In Feb. 1952 it was announced that two elected members of the legislative council had been appointed as members of the government without portfolio.

Early in 1952 the Colonial Development corporation sent a mission to review the progress of the irrigated rice scheme, for which capital sanction of £1,115,000 had been given in Feb. 1950. By the end of 1951 £300,000 had been spent on irrigation and drainage works.

Gold Coast.—The 1952 session of the legislative assembly was opened on Jan. 29 by the governor. Local government elections started in April. In March an amendment to the constitution provided for the replacement of the leader of government business by a prime minister taking precedence next after the governor. Kwame Nkrumah became prime minister on March 21.

It was announced that when proposals for self-government within the Commonwealth of Nations had been formulated by the colony's government after consultation with the chiefs and the people, they would be examined and discussed jointly by the British and Gold Coast governments. In August the visiting mission of the United Nations Trusteeship council arrived in Togoland.

In April a mineral duty ordinance applied the broad principles of gold duty to all minerals, including bauxite, which had not been taxed hitherto. The object was to increase the tax paid by the mining industry while continuing to assist lower grade mines.

In April it was announced that work was to start on a new harbour at Tema, 18 mi. E. of Accra. The sum of £20,750,000 was approved by the assembly for the port and town and ancillary road and rail connection. In May talks took place in London between Gold Coast ministers, representatives of the U.K. government, Aluminium Ltd. of Montreal and the British Aluminium company, on the Volta river project which Tema harbour would serve. The projected works were a dam, a hydro-electric plant and an aluminum plant. The estimated cost of the scheme, apart from the mines and the aluminum plant, was £80,000,000.

Nigeria.—The general election was not complete by the end

of 1951 and it took some time for the final pattern to emerge. In the northern region house of assembly the Northern People's Congress, mainly traditional and conservative in outlook, had an overwhelming majority. In the eastern region the National Council of Nigeria and the Cameroons was able to attract a sufficient number of independents to give it control of the assembly of 80. In the central "federal" house of representatives all the eastern region members were N.C.N.C. supporters; but, although the Action group dominated the western region house of assembly, the western group in the house of representatives included three seats allotted to members of the house of chiefs and two to representatives of Lagos where only N.C.N.C. members were returned. However, Nnamdi Azikiwe, leader of the N.C.N.C., was not chosen as one of the Lagos representatives in the central house and Awolowo, leader of the Action group, elected to lead his party in the western ministry instead of accepting a central ministry.

The principal development in the local government field was the introduction of a bill in the western region house of assembly providing for the creation of divisional councils and for local government inspectors whose duties would be performed by the former residents and district officers. British officers were also to be seconded as clerks of the councils. The general effect of this legislation was to bring the system of local government in the western region more or less into line with the system on the British model already operating in the eastern region. The Niger county council in the eastern region was inaugurated on April 10.

Sierra Leone.—In March 1952 Bankole Bright, leader of the National Council of Sierra Leone, led a deputation to London to protest against the new constitution, under which the legislative council had first met in Nov. 1951. His party had gained five out of the seven Freetown seats; 16 seats in the colony and protectorate had been won by the Sierra Leone People's party. The creoles of the colony therefore felt that they were being swamped by representatives of the comparatively illiterate peoples of the protectorate.

Finance and Trade.—Monetary unit: West African pound (£1=£1 sterling=280 cents U.S.).

	Revenue (1951-52)	Expenditure (1951-52)	Imports (1951)	Exports (1951)
Gambia	£ 1,120,625	£ 1,164,200	£ 3,998,000	£ 2,996,000
Gold Coast	20,575,340	20,051,670	63,330,000	91,350,000
Nigeria	42,582,410*	42,041,460*	83,201,000†	130,238,000†
Sierra Leone	3,850,500	3,904,500	8,206,894	10,068,442

*1952-53.

†Provisional.

The principal exports were: Gambia, peanuts (32,200 tons); Gold Coast, cocoa, gold, manganese, timber; Nigeria, cocoa, palm products, peanuts, hides and skins, tin ore; Sierra Leone, palm kernels, iron ore, diamonds.

(W. H. Is.)

British West Indies: see BAHAMAS; BARBADOS; JAMAICA; LEEWARD ISLANDS; TRINIDAD AND TOBAGO; WINDWARD ISLANDS.

Broadcasting: see RADIO; TELEVISION.

Brookings Institution: see SOCIETIES AND ASSOCIATIONS, U.S.

Brownell, Herbert, Jr. (1904-), U.S. political leader, was born on Feb. 20 at Peru, Neb. He received his bachelor's degree at the University of Nebraska, Lincoln, in 1924 and his law degree at Yale university in 1927. He practiced law in New York city, and in 1932 was elected as a Republican to the New York state assembly where he served two terms. In 1942 he was campaign manager for Thomas E. Dewey in the latter's successful bid for the governorship of New York. Brownell also managed Dewey's campaigns for the Republican presidential nomination in 1944 and 1948 and was chairman of the Republican national commit-

tee from 1944 to 1946. He was an early supporter of Gen. Dwight D. Eisenhower and key strategist in the latter's campaigns for presidential nomination and election in 1952. Eisenhower on Nov. 21, 1952, named Brownell attorney general in his cabinet.

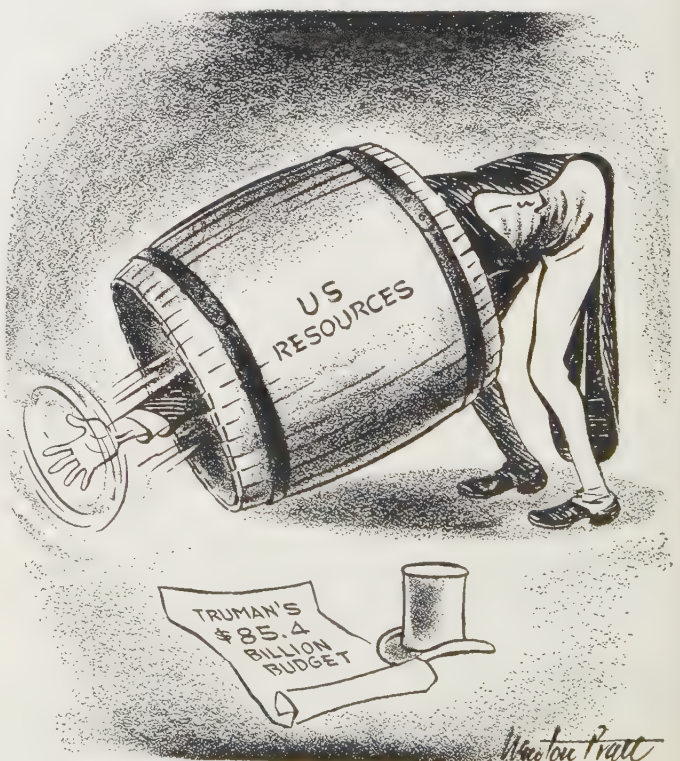
Brozovich or Broz, Josip (Tito): see TITO (JOSIP BROZOVICH OR BROZ).

Brunei: see BRITISH BORNEO.

Budget, National. **United States.**—In a statement dated Aug. 19, 1952, Pres. Harry S. Truman reviewed the changes in the budget of the United States for the fiscal year ending June 30, 1953, which had taken place since its original transmission to congress the previous January. This review was a reappraisal of the government's financial program for the fiscal year 1953. It presented revisions of the original fiscal 1953 estimates in the light of new obligational authority already enacted, anticipated supplemental appropriations that were to be submitted to the next session of congress, and amendments to the budget which had been made since January. In addition, the review provided actual expenditure and receipts data (instead of estimates) for the fiscal year 1952.

Budget expenditures for fiscal 1953 were estimated at \$79,000,000,000, which was \$6,400,000,000 below the total submitted in Jan. 1952. Budget receipts were estimated at \$68,700,000,000, down \$2,300,000,000 from the January estimate. On the basis of these revised figures, a budget deficit of \$10,300,000,000 was anticipated for the fiscal year 1953—\$4,100,000,000 lower than the figure in the original budget message. In the fiscal year 1952 there was a budget deficit of \$4,000,000,000; in the previous year there had been a surplus of \$3,500,000,000.

The revised expenditure total for fiscal 1953 represented an increase of about \$13,000,000,000 over fiscal 1952 and of about \$39,000,000,000 over fiscal 1950, the last full year before the outbreak of the Korean conflict. The revised estimate of budget receipts for 1953 was \$6,600,000,000 higher than actual receipts in 1952.



"SCRAPING BOTTOM," a 1952 cartoon by Pratt of the McClatchy Newspapers

The president noted that nearly 74% of total budget expenditures in the fiscal year 1953, or \$58,200,000,000, was earmarked for six "major national security programs"—military services, international security and foreign relations, atomic energy, defense production and economic stabilization, civil defense and maritime activities. Expenditures for these programs accounted for all of the increase in total budget expenditures since the attack on Korea.

An additional 14% of the revised budget, or \$10,900,000,000, was comprised of interest and veterans' benefits. All other activities of the government accounted for the remaining 12%, or \$9,900,000,000.

Military Services.—Expenditures for military services, including foreign military assistance, were estimated at \$52,900,000,000 for the fiscal year 1953 in the revised budget. This amount comprised two-thirds of the over-all budget total. It was about \$11,600,000,000 above military outlays in fiscal 1952 and accounted for nearly all of the projected increase in the 1953 budget.

Most of the expenditures in the military services category were allocated for military functions of the department of defense. The rate of such defense department expenditures, it was said, was expected to reach a peak in the latter part of the fiscal year 1953, and then level off for a time before moving to lower levels.

The later estimate of expenditures for military services in fiscal 1953 was \$6,300,000,000 below the original estimate. This downward revision was attributed to reductions in appropriations and some slowing of military production resulting from the work stoppage in the steel industry.

International Security and Foreign Relations.—Expenditures for international security and foreign relations (excluding foreign military assistance) were estimated at \$2,376,000,000 in the fiscal year 1953 compared with \$2,829,000,000 in fiscal 1952. Most of the reduction was for foreign economic assistance. Appropriations for this program had been cut substantially below the original budget request in Jan. 1952.

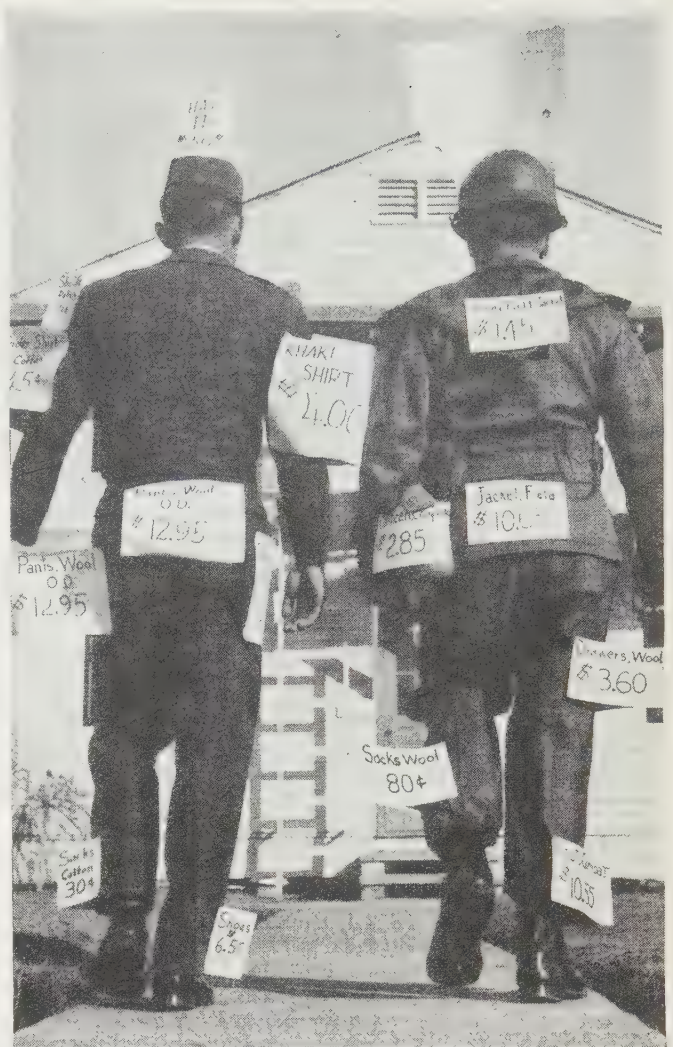
Finance, Commerce and Industry.—For programs embraced under the heading of finance, commerce and industry, expenditures in fiscal 1953 were expected to total \$375,000,000. The bulk of the increase over outlays of \$170,000,000 in 1952 was in programs relating to the expansion of defense production.

Expenditures for price, wage and rent controls were placed at \$62,000,000, sharply below the January estimate of \$149,000,000. Appropriations for these programs were substantially reduced by congress, which specified that they should be ended on April 30, 1953.

Transportation and Communication.—Expenditures for transportation and communication programs were estimated at \$1,863,000,000 for fiscal 1953 compared with \$2,017,000,000 in the preceding year. The decline largely reflected an anticipated reduction in the postal deficit.

Natural Resources.—The government's programs to conserve and develop natural resources were estimated to require expenditures of \$3,644,000,000 in fiscal 1953. The increase of about \$700,000,000 over the 1952 total was accounted for by outlays for atomic energy, which formed more than three-fifths of all expenditures in this category.

Agriculture and Agricultural Resources.—Expenditures for operating government programs relating to agriculture and agricultural resources were estimated at \$1,804,000,000 for fiscal 1953 compared with \$1,042,000,000 in fiscal 1952. This increase was almost entirely the result of anticipated higher expenditures for farm price support. During the fiscal year 1952, the Commodity Credit corporation had sold more price support commodities than it acquired.



TAGGED CLOTHING worn by two soldiers to show troops at Ft. Benning, Ga., the cost of each part of their uniforms in 1952. Total cost for the two sets of clothing was \$97.41

In fiscal 1953, however, it was expected that higher production from the 1952 crops would increase the national carry-over and that the corporation, through loans and purchases, would add substantial amounts of price support commodities to its inventories.

Labour.—For the fiscal year 1953, expenditures required for administering labour programs were placed at \$248,000,000—\$4,000,000 more than in the previous year. Three-fourths of the total consisted of direct grants to the states for the administration of the employment services and unemployment insurance systems.

Housing and Community Development.—Budget outlays for housing and community development were estimated, on balance, to decline from \$786,000,000 in fiscal 1952 to \$657,000,000 in fiscal 1953. This decline reflected the anticipation that in 1953 public housing programs would realize substantial net receipts, instead of incurring net expenditures.

However, expenditures for defense housing and community facilities and for civil defense activities were scheduled to increase sharply.

Education and General Research.—Expenditures for education and general research in the fiscal year 1953 were estimated at \$263,000,000, or \$84,000,000 higher than actual outlays in 1952.

The increase was attributed chiefly to a large rise in school enrolments in areas affected by mobilization activities.

Social Security, Welfare and Health.—Expenditures for social

security, welfare and health were estimated at \$2,667,000,000 in the revised budget, \$64,000,000 more than in the fiscal year 1952. The 1953 total included allowance for an anticipated supplemental appropriation of \$145,000,000 required under new legislation raising federal contributions to the states for public assistance beginning Oct. 1, 1952.

Table I.—Summary of Budget Receipts and Expenditures, United States
Fiscal Years 1951 through 1953

Description	Actual, 1951	Actual, 1952	Estimate, 1953
Budget receipts:			
Direct taxes on individuals	\$24,095,000,000	\$30,713,000,000	\$33,542,000,000
Direct taxes on corporations	14,388,000,000	21,467,000,000	24,800,000,000
Excise taxes	8,693,000,000	8,893,000,000	9,624,000,000
Employment taxes	3,940,000,000	4,573,000,000	4,678,000,000
Customs	624,000,000	550,000,000	550,000,000
Miscellaneous	1,629,000,000	1,803,000,000	1,750,000,000
Deduct:			
Appropriations to federal old-age and survivors insurance trust fund	3,120,000,000	3,569,000,000	3,708,000,000
Refunds of receipts (excluding interest)	2,107,000,000	2,302,000,000	2,500,000,000
Total budget receipts	48,143,000,000	62,128,000,000	68,736,000,000
Budget expenditures:			
Military services, including foreign military assistance	21,387,000,000	41,253,000,000	52,868,000,000
Veterans' services and benefits	5,339,000,000	4,821,000,000	4,479,000,000
International security and foreign relations, excluding foreign military assistance	3,802,000,000	2,829,000,000	2,376,000,000
Social security, welfare and health	2,380,000,000	2,603,000,000	2,667,000,000
Housing and community development	602,000,000	786,000,000	657,000,000
Education and general research	115,000,000	179,000,000	263,000,000
Agriculture and agricultural resources	650,000,000	1,042,000,000	1,804,000,000
Natural resources	2,051,000,000	2,938,000,000	3,644,000,000
Transportation and communication	1,685,000,000	2,017,000,000	1,863,000,000
Finance, commerce and industry	176,000,000	170,000,000	375,000,000
Labour	228,000,000	244,000,000	248,000,000
General government	1,209,000,000	1,323,000,000	1,253,000,000
Interest	5,714,000,000	5,940,000,000	6,431,000,000
Reserve for contingencies	—	—	100,000,000
Adjustment to daily treasury statement basis	705,000,000	—	—
Total budget expenditures	44,633,000,000	66,145,000,000	79,028,000,000
Budget surplus	3,510,000,000	—	—
Budget deficit	—	4,017,000,000	10,292,000,000

Detail will not necessarily add to totals because of rounding.

Veterans' Services and Benefits.—The revised budget for the fiscal year 1953 placed expenditures for veterans' programs at \$4,500,000,000, about \$350,000,000 less than in 1952. Although outlays for the education and training of World War II veterans were scheduled to fall sharply in fiscal 1953, expenditures under new legislation were estimated at more than \$500,000,000. This provided for (1) education and training, loan guarantees, unem-

ployment compensation and other benefits for veterans with service since June 27, 1950, and (2) higher compensation and pension rates and liberalized eligibility conditions for non-service-connected pensions.

General Government.—Expenditures for general government services and activities in fiscal 1953 were included in the revised budget at \$1,253,000,000, which was \$70,000,000 less than in the previous year. In the main, this decrease stemmed from the substantial reductions made in appropriations for maintaining and operating government buildings, for supplies and equipment, and for record-keeping activities.

Interest.—Accounting for 8% of total budget expenditures, interest payments by the federal government were expected to amount to \$6,431,000,000 in fiscal 1953. Of this total, \$6,350,000,000 represented interest on the public debt. Because of an increase in the volume of interest-bearing debt and also because of higher interest rates, this latter figure was about \$500,000,000 more than actual outlays in fiscal 1952.

Budget Receipts.—The federal government's two largest sources of revenue—direct taxes on individuals and on corporations—were expected to provide more than \$58,000,000,000 in the fiscal year 1953, or 85% of the estimated total of budget receipts. Excise taxes, the other major source of federal revenue, amounted to about \$9,600,000,000 in the revised 1953 budget. As already noted, the estimated expenditures and receipts for fiscal 1953 would result in a deficit of \$10,300,000,000. (See also DEBT, NATIONAL; INCOME AND PRODUCT, U.S.; TAXATION; UNITED STATES.)

Great Britain.—The 1952-53 budget of Great Britain presented in March 1952 showed total receipts of £4,661,000,000 compared with £4,440,000,000 in the preceding fiscal year. (See Table II.) The bulk of the estimated expansion of receipts in the fiscal year ending March 31, 1953, represented a larger yield from income taxation on both persons and business. Custom and excise collections were also anticipated to be higher.

The imposition of a new excess profits tax, at the rate of 30%, was scheduled to yield little revenue in 1952-53. The estimated rise in business profits taxes stemmed mainly from the effects of tax changes which had been enacted in the previous fiscal year. Since the budget allowed for a reduction in personal tax rates, the increased tax yield shown in this area for 1952-53 reflected the expectation of higher personal income.

Total budget expenditures were scheduled to rise from £4,074,000,000 in fiscal 1951-52 to £4,231,000,000 in 1952-53. As in the preceding year, outlays for defense showed the largest increase. Defense expenditures were projected at £1,377,000,000, compared with £1,112,000,000 in 1951-52. In addition, the cost of servicing the national debt was estimated to rise by £33,000,-

Table II.—Government Receipts and Expenditures—Great Britain

(£ millions)

Receipts			Expenditures		
	Exchequer Receipts, 1951-52	Estimate, 1952-53		Exchequer Issues, 1951-52	Estimate 1952-53
Income tax	1,690	1,804	Debt charge	542	575
Surtax	128	123	Payments to North Ireland exchequer	39	40
Death duties	180	175	Other	11	10
Stamps	62	58	Total consolidated fund services	592	625
Profits tax and excess profits tax	307	457	Supply services:		
Special contributions and other inland revenue duties	3	2	Defense	1,112	1,377
Total inland revenue	2,370	2,619	Civil	2,323	2,180
Customs	1,000	1,044	Customs and excise, inland revenue and balance of post office rates	47	48
Excise	755	772	Total supply services	3,482	3,606
Total customs and excise	1,755	1,816	Total ordinary expenditure	4,074	4,231
Motor vehicle duties	65	64	Surplus	366	430
Total receipts from taxes	4,190	4,498	Total	4,440	4,661
Surplus receipts from trading services	75	12			
Broadcast receiving licences	14	15			
Receipts from sundry loans	25	26			
Miscellaneous (including sale of surplus war stores)	136	110			
Total ordinary revenue	4,440	4,661			

Detail will not necessarily add to total because of rounding.

ooo. Some cutbacks were provided, however, in expenditures for stockpiling of strategic materials, for food subsidies and for national insurance and pension schemes.

The surplus of ordinary receipts over ordinary expenditures was estimated for 1952-53 to be £430,000,000, somewhat larger than the preceding year's surplus of £366,000,000. (C. F. Sz.)

Buhl Foundation: see SOCIETIES AND ASSOCIATIONS, U.S.

Building and Construction Industry. During the first nine months of 1952 the dollar volume of new construction in the United States, \$24,242,000,000, was at the highest level for any comparable period on record. It was 5% above that in 1951 and 19% higher than the Jan.-Sept. 1950 level. In fact the 9-mo. total for 1952 exceeded the total for any 12-mo. period prior to 1950.

Comparing the dollar volume of construction put in place for the first nine months of 1952 and 1951, public construction gained by 20% as major advances occurred in building atomic energy establishments and military and naval facilities. Private construction lagged slightly, showing a decline of 1% because greater outlays in 1952 on private industrial plant and public utility construction did not offset the drop in commercial and some other types of nonresidential building and on housing.

Private construction amounted to \$16,096,000,000, or two-thirds of total new construction put in place. Of this, nonfarm residential accounted for one-half, nonresidential building for somewhat less than one-fourth, and public utilities in excess of one-sixth. One-third of total new construction was financed publicly by federal, state or local bodies and amounted to \$8,146,000,000 during the first nine months of 1952. Of this, considerably more than one-third went for nonresidential building, and one-fourth represented expenditures on military and naval installations.

Construction Costs.—Construction costs, continuing a long-term trend, moved upward slowly during the first half of 1952 but maintained a constant rate of increase. The department of commerce composite index was 4% higher both in January and in June than for the comparable months of the previous year, reflecting general inflationary pressures rather than building material or labour shortages. Disparities were manifest in cost trends among various types of construction. The E. H. Boeckh indexes for residences and for apartments, hotels and office buildings, each showed an increase of 2% during the first six months of 1952.

The cost of heavy construction on the other hand rose 6% according to the *Engineering News Record* index.

Materials Prices and Production.—In June 1952 the building materials wholesale price index was 2% below that of June 1951 but was 10% above the 1950 index and 16% higher than the index for June 1949. The major portion of the decline in the June 1951-June 1952 period occurred in the last half of 1951 with the index holding at a steady level of about 118.0 (1947-49=100) in the first half of 1952. Level price movements characterized virtually all of the major building materials. The primary price index for lumber and wood products remained within a fraction of a point of 120.0 from January to June 1952, heating equipment stood at approximately 114.0, structural clay products at 121.0, and concrete ingredients at 113.0. Decline in the price index of paint and paint materials from 109.3 to 107.0 and a rise in plumbing equipment from 116.6 to 118.1 compensated for each other in the aggregate index of building materials prices.

During the first half of 1952 the composite index of construction materials production was 10% below the first half of 1951, but it exceeded all other January to June periods on record,

INTERIOR VIEW of one of eight model homes tested by the U.S. Housing and Home Finance agency in 1952 for use by defense workers in critical housing areas. This home was prebuilt in three sections by the Pressed Steel Car Company, Inc., and erected at Hegewisch, Ill.



standing 3% and 15% above the comparable periods in 1950 and 1949. Sharpest decreases in the first half of 1952 compared with January to June 1951 were noted in production of warm-air furnaces, which dropped 30%, and in gypsum lath, wire nails and cast-iron soil pipe, each of which declined by approximately 25%. Other major categories of building materials showed production declines ranging from 5% to 15%. The production of lumber, the most important single item in the composite index, was 9% lower in the first half of 1952 contrasted with January-June 1951.

Construction and Materials Controls.—With easing of materials supply in the early months of the year, the National Production authority increased self-authorization of steel from 2 to 5 tons on nonindustrial and nonresidential projects and from 2 to 25 tons on road and highway construction. Restrictions on residential construction were eased to permit greater floor area, increased number of bathrooms and more liberal use of copper and aluminum. In May the NPA lifted bans on recreational buildings and increased permitted amounts of steel, copper and aluminum for commercial and home building. Lead, bismuth, cadmium and antimony were also decontrolled. Before this relaxation order could be effected, however, the steel strike occurred; in June the order was rescinded.

Despite loss of production during the steel stoppage, supplies did not decline to critical levels. The aggregate volume of construction was not appreciably affected. Late in July the NPA removed inventory controls on more than 50 commodities including cast-iron pressure pipe and fittings. In August, 500 tons of finished carbon conversion steel was permitted on authorized construction for the last quarter of 1952 and the first quarter of 1953. The major relaxation that had been announced and then rescinded was reinstituted by the NPA on Oct. 3, 1952. Increases were allowed in volume of materials that might be self-authorized for commercial, multiunit residential and other types of construction, and the ban on recreational building was again lifted. The effective date of this order was to be May 1, 1953, but it was expected that further improvements in the

supply of materials would bring the effective date closer to early 1953.

Employment and Earnings.—During the first half of 1952 building and construction activity provided employment for an average of 2,420,000 workers, a figure only .5% lower than the all-time January to June peak of the previous year. Usual seasonal variations were manifest, employment rising from 2,300,000 in early months to more than 2,700,000 in June 1952.

In early spring construction workers were permitted wage increases of as much as 15 cents an hour by the Wage Stabilization board. In the previous September a 10% increase above hourly rates prevailing on July 1, 1950, had been approved by that agency. The new policy, effective until the end of 1952, also provided that employers might contribute an estimated 7.5 cents an hour to health and welfare plans, but payments into pension funds, annuities and paid holidays would be charged against permitted wage increases.

Table II.—Average Union Wage Scales for Selected Trades, July 1952

Trade	Rate Level			Increase	
	Low	Average	High	July 1951-July 1952 Cents per hour	Per Cent
Bricklayers	\$2.50	\$3.13	\$3.65	23	8
Carpenters	1.93	2.63	3.40	11	4
Electricians	2.20	2.88	3.30	14	5
Painters	1.50	2.57	2.80	16	7
Plasterers	2.25	3.08	3.65	14	5
Plumbers	2.38	2.84	3.25	10	4
Building labourers . . . . .	.90	1.74	2.56	8	5

The continuing high level of employment plus WSB authorization contributed to placing average weekly earnings of construction workers at an all-time high—\$88.11 in June 1952. Average hourly earnings for both union and nonunion workers rose to a peak of \$2.25 in March and then declined fractionally by mid-year. An increase in the number of working hours per week, however, more than compensated for this minor decline in hourly rate. In general, the position of construction workers had improved considerably in past years. Weekly earnings in June 1952 were 7% higher than in the previous year, 20% higher

than in 1950 and 23% above those of 1949. At the same time, the consumer price index showed increases of 2% above 1951, 11% over both 1950 and 1949.

Wage rates for all building crafts increased in the year July 1951 to July 1952 but with some variation in both the amount and the proportion of rise. At midyear 1952 average union rates exceeded \$3 an hour straight time for bricklayers and plasterers; unskilled and semiskilled building labourers were receiving an average of \$1.74 per hour.

Credit Regulations Removed.—In Sept. 1952 the board of governors of the federal reserve system withdrew all direct controls on conventional loans for residential and nonresidential building by removing Regulation X. The Housing and Home Finance agency virtually duplicated this move with respect to mortgages

Table I.—New Construction Activity, Continental United States*
(In millions of dollars)

Type of construction	1952		1951 Sept.	First 9 mo. 1952	1951	Per cent change		
	Sept.	Aug.				Sept. 1952 from Aug. 1952	Sept. 1951	9 mo. 1952 from 9 mo. 1951
Total new construction	3,112	3,129	2,934	24,242	23,078	-1	+6	+5
Private, total	2,037	2,040	1,955	16,096	16,284	†	+4	-1
Residential (excluding farm)	1,053	1,048	958	8,069	8,240	†	+10	-2
New dwelling units	935	930	849	7,150	7,399	+1	+10	-3
Additions and alterations	100	100	93	788	693	0	+8	+14
Nonhousekeeping	18	18	16	131	148	0	+13	-11
Nonresidential building	433	420	460	3,670	3,872	+3	-6	-5
Industrial	188	181	210	1,735	1,512	+4	-10	+15
Warehouses, office and loft buildings	44	43	45	338	421	+2	-2	-20
Stores, restaurants and garages	57	55	56	439	667	+4	+2	-34
Other nonresidential building	144	141	149	1,158	1,272	+2	-3	-9
Religious	38	37	42	288	348	+3	-10	-17
Educational	34	32	32	259	257	+6	+6	+1
Hospital and institutional	32	34	37	298	316	-6	-14	-6
Social and recreational	13	12	12	91	137	+8	+8	-34
Miscellaneous	27	26	26	222	214	+4	+4	+4
Farm construction	168	183	179	1,341	1,416	-8	-6	-5
Public utility	376	381	352	2,955	2,710	-1	+7	+9
Railroad	37	37	35	298	281	0	+6	+6
Telephone and telegraph	48	48	43	409	361	0	+12	+13
Other public utility	291	296	274	2,248	2,068	-2	+6	+9
All other private	7	8	6	61	46	-13	+17	+33
Public, total	1,075	1,089	979	8,146	6,794	-1	+10	+20
Residential	53	54	63	513	395	-2	-16	+30
Nonresidential building	378	380	319	3,036	2,564	-1	+18	+18
Industrial	162	168	103	1,230	661	-4	+57	+86
Educational	141	139	136	1,193	1,130	+1	+4	+6
Hospital and institutional	42	41	40	357	385	+2	+5	-7
Other nonresidential building	33	32	40	256	388	+3	-18	-34
Military and naval	153	152	129	1,238	620	+1	+19	+100
Highway	325	335	303	2,010	1,809	-3	+7	+11
Sewer and water	62	64	60	512	543	-3	+3	-6
Miscellaneous public service enterprises	22	19	21	140	166	+16	+5	-16
Conservation and development	77	79	77	651	634	-3	0	+3
All other public	5	6	7	46	63	-17	-29	-27

*Joint estimates of the Department of Commerce and the Department of Labor. Estimated construction expenditures represent the monetary value of work put in place during the given period of time.

†Decrease less than 0.5%. ‡Increase less than 0.5%.

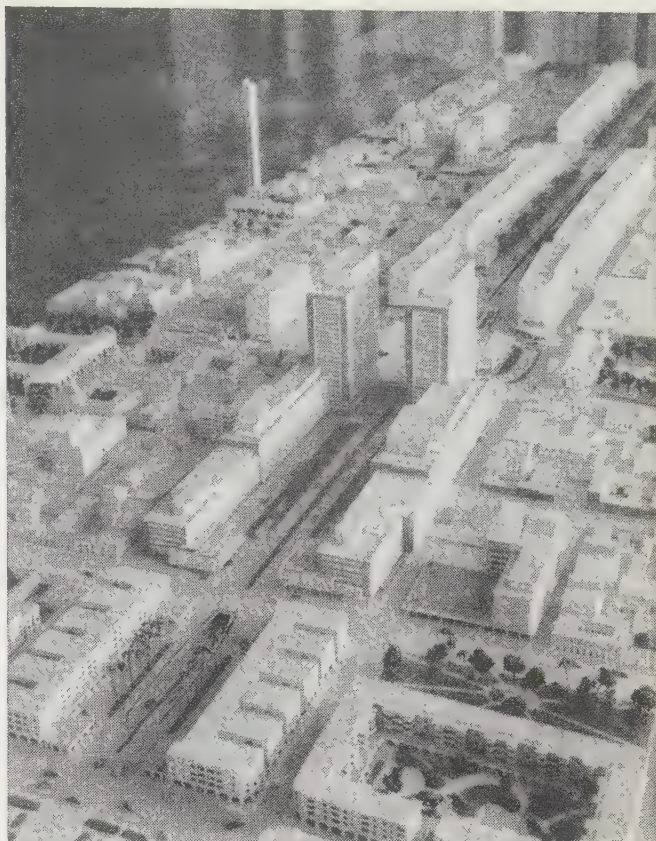
insured or guaranteed by the federal government. The removal of Regulation X was expected to have the most influence on commercial building, which had been subject to a maximum permissible loan-to-value ratio of 50%. Mortgages on commercial structures are ordinarily sought by insurance companies and other large institutional lenders because servicing costs are low and yields high. One percentage point difference in interest rate is not so important to a commercial borrower as it is to a family financing its own home. Consequently commercial mortgages can compete favourably with home mortgages and other types of long-term loans.

Paley Report.—The report of the President's Materials Policy commission contained sharp criticism of the building industry for its lack of rationalization and its failure to adopt methods and policies necessary for a long-term program of material conservation.

The report pointed out that this industry was one of the largest consumers of materials in the nation. In 1950 it used one-third of the copper, one-sixth of the iron and steel, one-fifth of the lead and zinc and two-thirds of the lumber. Heating and air conditioning used nearly one-fourth of the total fuel consumed. By 1970 the construction volume (excluding roads, dams and docks) was expected to increase 35% above 1950 levels, with a corresponding increase in material consumption unless use patterns were altered. The report stated, however, "although some firms and individuals in the many different elements of the building industry have made important contributions to improved use of materials a large part of the industry resists change. It is saddled with a multitude of restrictions, some of them self-imposed, which seriously impede desirable change."

Barriers to more efficient use of materials were attributed to four principal causes: the organization of the industry, prevalence of restraints of trade, rigidity of building codes and the inadequacy of research. The report pointed out that the industry was comprised of a large aggregation of many types of enterprises, of which a large proportion were small. Organizational efficiencies cannot be secured by small firms, and, moreover, these are more vulnerable to economic fluctuations and more subject to control by financial institutions. Restraints of trade had continued despite the fact that one-fourth of all antitrust cases had involved the building industry. These restraints included the withholding of materials, banning of new methods, price agreements, complicity among contractors submitting bids, and various types of licensing arrangements. Building codes, whose purpose is public protection, because of diverse requirements and archaic specifications, had militated against standardization in building materials production and had made for wasteful use of building products. Research in building materials had been limited for the most part to improving and developing particular products, but because of the fragmentary nature of the industry, little had been done in the basic study of the elements and components of structures.

Based upon its study, the commission made a number of important recommendations. To combat practices in restraint of trade it suggested that the department of justice and the Federal Trade commission intensify their efforts and also study the adequacy of existing legislation. To assist in rectifying the difficult building code situation, the commission urged the federal government to formulate a standard building code based on structural performance rather than on stipulation of specific materials. It further recommended that except for monuments, etc., federal construction should not be permitted to use materials in excess of the minimum required by the national standards. Further implementation might be given to this program by making such standards become the "minimum construction requirements" of the FHA for issuance of mortgage insurance and



MODEL OF THE BUILDING and traffic project under way in the heart of Caracas, Venez., in 1952. The new downtown centre was to include 24 buildings and four traffic levels, and was to form the nucleus of a total revamping of the city

by preventing the FHA from underwriting loans on houses in areas that had "building codes and zoning laws which do not permit use of alternative materials permitted by the national standard." The commission felt, however, that the federal government should not make any attempt to prohibit private or local construction that used materials or standards in excess of minimum construction requirements.

Conservation in Building Construction.—At midyear the Building Research Advisory board released a report on conservation of building materials. The initial purpose of this study was to survey methods used in federal building construction so that uses of critical materials could be limited as much as possible to leave an adequate supply for nonfederal building. As the survey proceeded during late 1951 and early 1952, material supplies became more ample and it was not necessary to devote exclusive attention to the emergency situation. While the report made many recommendations useful in times of critical shortages, others applied to long-range peace-time operations. These recommendations emphasized frugal design to eliminate wasteful use of materials, conserve real resources and reduce dollar costs.

Urban Redevelopment Programs.—In 1952 Philadelphia, Pa., became the first city in the United States to complete a redevelopment project under provisions of Title I of the Housing act of 1949. Penn Towne in the East Poplar section of Philadelphia consisted of 138 new and 36 rehabilitated apartment units, an attractive and efficient blending of old and new structures in an area that a short time before was ugly and decayed.

By the end of Aug. 1952, 249 localities of various size and character were approved for reservation of capital grant funds and were participating in the Title I program. Many others were undertaking similar programs with state and local financing. A total of 96 federally aided projects in 65 communities were approved for final planning or development, compared with 40

in 21 localities at the end of Aug. 1951.

Under the provisions of Title I, capital grants aggregating \$500,000,000 were made available to localities for the purpose of defraying up to two-thirds of the difference between cost of assembling and clearing slums and blighted areas and the fair value of the sites for approved new uses. An additional \$1,000,000,000 in loans could be used for planning, acquisition and clearance—as well as for financing land that was leased rather than sold. An act of congress approved June 3, 1952, facilitated redevelopment by making possible advance or progress payments on capital grants to local public agencies. Previously such payments could not be made until each phase of the project had been completed and all items of cost finally determined.

In St. Paul, Minn., slums flanking the state capitol were being removed and the building put into a new, appropriate setting. Co-operative housing in New York city was soon to replace one of the last pockets of decay on Lower Manhattan's East river front. Three Chicago projects undertaken by the Land Clearance commission each provided a different purpose: one was to consist of an entirely new neighbourhood replacing 20 blighted blocks; the second would restore an unused subdivision for single-family homes; and the third would provide industrial sites within one mile of the loop. (See also ARCHITECTURE; BUSINESS REVIEW; CERAMIC PRODUCTS; HOUSING; TOWN AND REGIONAL PLANNING.) (CH. RA.)

Great Britain.—The return of a Conservative government to power toward the end of 1951 led to certain changes of policy in the building industry during 1952. There was some loosening of controls to encourage more building sponsored by private individuals as opposed to local authorities. At the same time, the shortage of certain materials, notably steel, combined with the absorption of labour by works in connection with the defense program resulted in a considerable slackening of progress in construction of schools and factories. A notable advance in the rate of completed dwellings was obtained, as promised by the Conservatives at the general election, but the volume of civil building as a whole declined somewhat. A good deal of interest was occasioned by the rise of self-build housing associations, groups of men having, in the main, no special knowledge of building, pooling their resources to purchase materials and setting out to build houses for themselves in their spare time.

On the side of technique, valuable progress was reported in the development of planning and construction of schools so that, in spite of the general rise in building costs, a drop of more than 25% in the cost per place in new primary and secondary schools was achieved between 1945 and 1952. Various techniques using precast concrete units showed considerable advancement since the early postwar period and particular interest was shown in the application of pretensioning devices to cables of reinforcing wires threaded through series of precast concrete units. It was felt by many that experiment along these lines offered the most promising development of constructional technique. For steelwork construction interest centred in suggestions put forward for a new basis of design known as the "collapse method." By this method, permissible loading of structures was determined not by the induced stresses calculated according to elastic theory but by taking account of the development of the plastic hinges which cause collapse of the structure and by allowing a definite load factor against the formation of these hinges. The method appeared to offer valuable opportunities for economy in the design of steel structures. (D. A. G. R.)

Bulgaria. A people's republic in the eastern part of the Balkan peninsula, Bulgaria is bounded north by Rumania, west by Yugoslavia, south by Greece and east by Turkey and

the Black sea. Area: 42,796 sq.mi. Pop.: (1946 census) 7,022,206; (1951 est.) 7,310,000. Language (1947 est.): Bulgarian 88%, Turkish 9.8%. Religion (1947 est.): Greek Orthodox 84%, Moslem 11.5% (of whom one-sixth Pomaks, or Moslem Bulgars, remainder Turks), Roman Catholic 0.9%, Gregorian Armenian 0.4%, Jewish 0.3%, Protestant 0.2%. Chief towns (pop., 1947 est.): Sofia (cap., 434,888); Plovdiv (125,440); Stalin, formerly Varna (77,792); Russe (53,420); Burgas (43,684). Chairman of the presidium of the national assembly in 1952: Gen. Georgi Damianov; prime minister: Vulko Chervenkov.

History.—The year 1952 was uneventful in Bulgaria, which of all the satellite states had gone furthest along the road of Stalinization, and was the most effectively concealed from the eyes of the outer world.

The number of collective farms was apparently not greatly increased. Emphasis was rather on consolidation. According to figures published by the State Planning commission in February at the beginning of the year 53% of all peasant holdings were in collective farms, and on these collective farms 55% of the work was mechanized.

The Communist party's main instrument in the countryside remained the Agrarian union, which belonged together with the Communist party in the Fatherland front. Communist control was no less complete in the other satellite states than in Bulgaria, but it operated in a somewhat different manner. In Bulgaria the Communists had found it convenient to exploit the traditional name of the Agrarian union for their purposes. This once great and popular political party was a subordinate body whose personnel and slogans were chosen by the Communists. Communist agents operated in the villages not under the name of the Communist party but under that of the Agrarian union. The congress of the Agrarian union, held Dec. 28-30, 1951, revealed clearly its real role. The leading figure in the union, Georgi Traikov, emphasized the union's duty to "render help to the Communist party and the Bulgarian government."

The Fatherland front had a similar but more general purpose. It was used by the Communists to attract support from wherever it could be found. Its third congress met at the end of May. At this congress its complete subordination to the Communist party was made clear in the speech delivered by Chervenkov. He stressed the front's obligation to mobilize the "broad nonparty masses" behind the Communist party's leadership. The last fiction of its separate identity was abandoned when Chervenkov stated that the front no longer had any need of a program of its own, distinct from that of the Communist party.

There were some ministerial changes. On May 1 Vladimir Poptomov, a vice-premier, a veteran Muscovite Communist of Macedonian extraction, died. On Aug. 20 Anton Yugov ceased to be minister of heavy industry and was appointed vice-premier. On Sept. 3 the minister of foreign trade, Dimitar Ganev, and the minister of agriculture, Nikola Stoilov, were relieved of their posts. The second of these changes might be connected with difficulties in the collectivization policy. It will be recalled that the previous minister of agriculture, Titko Chernokolev, was dismissed in disgrace in June 1951.

The State Planning commission claimed in February that during 1951 industrial production had increased by 16% in comparison with 1950. Cotton fabrics had increased by 13%, coal by 8%, electric power by 27% and machinery by 32%.

On May 12 the government introduced a currency reform. Like the Rumanian reform of January and the Polish reform of Oct. 1950, it tied the revalued currency to the soviet rouble, "the most stable currency in the world." Together with the reform came price reductions, mainly between 15% and 30%. All rationing was abolished. One new lev was to be exchanged for 100 old in cash. Various types of savings accounts obtained privileged

rates varying from 2 to 4 new for 100 old.

Labour shortage and labour turnover continued to engage the attention of the government. A central administration of labour reserves was created in March. It was to be responsible for two-year industrial schools, factory schools and a railway training school, to all of which boys aged 14-17 would be eligible. The whole organization was based on the institution of similar name that had existed since 1940 in the Soviet Union. Unlike its soviet prototype, however, the Bulgarian institution did not yet seem to have been given power to mobilize children.

The hate campaign against Bulgaria's neighbours continued throughout the year. Various notes of protest on alleged frontier violations were addressed to Yugoslavia, Greece and Turkey.

An investigation by the ministry of state control into state bakeries revealed in January that 90% of the bread samples examined were below the official standard. Todor Yurdanov, assistant minister of internal trade, was severely reprimanded and several officials of the ministry were dismissed.

An article of Jan. 31 in the Communist party daily *Rabotnichesko Delo* expressed official dissatisfaction with the content of Bulgarian children's books, which did not pay sufficient attention to contemporary subjects. "The brotherly friendship with the Soviet Union, vigilance and the unmasking of the repulsive Titoite traitors are themes still waiting to be incorporated in our children's literature."

(H. S-W.)

Education.—Schools (1949-50): kindergarten 1,403, pupils 57,487, teachers 2,124; elementary 6,112, pupils 755,628, teachers 18,801; higher elementary 2,960, pupils 308,160, teachers 12,636; secondary 218, pupils 112,633, teachers 4,624; technical 101, pupils 26,800, teachers 943; institutions of higher education (1951-52) 13, students approx. 40,000, professors and lecturers 2,084. Illiteracy (1952): 6%.

Finance.—Monetary unit: lev (pl. leva) revalued on May 12, 1952, with an exchange rate of 1.70 leva=1.00 rouble compared with the previous exchange rate of 71.42 leva=1.00 rouble. The old lev was valued in Nov. 1951 at 290 leva to the U.S. dollar. Budget (1951 est.) revenue 271,794,000,000 old leva, expenditure 267,922,000,000 old leva; (1952 est.) revenue 370,146,000,000 old leva, expenditure 343,946,000,000 old leva.

Foreign Trade.—(1950) Imports U.S. \$178,000,000; exports U.S. \$133,000,000. Main sources of imports (1950): U.S.S.R. 67.4%; Czechoslovakia, Hungary, Poland and Rumania 24.1%. Main destinations of exports: U.S.S.R. 45.1%; four other eastern European countries 30.8%.

Transport and Communications.—Roads (1949): 13,870 mi. Licensed motor vehicles (Dec. 1950): cars 6,000, commercial 5,000. Railways (1952 est.): 2,231 mi. Telephones (1950 est.): 57,000. Radio receiving sets (1949): 205,000.

Agriculture.—Main crops (metric tons, 1948): wheat 1,503,000; maize 890,000; barley 249,000; rye 170,000; oats 105,000; potatoes (1934-38 average) 109,000; tobacco 20,000. Sugar production, raw value: 46,000. Wine production: (1938) 2,373,000 hl., (1949) 426,000 hl. Livestock: sheep (1948) 8,784,000; cattle (1950) 2,140,000; pigs (1950) approx. 1,500,000; horses (1948) 549,000; asses (1948) 157,000. Wool production, greasy basis (1951) 12,000 metric tons.

Industry.—Fuel and power: coal (1952 est.) 400,000 metric tons; lignite (1951 est.) 4,500,000 metric tons; electricity (1950) 900,000,000 kw.hr. In Nov. 1951 the Stalin Chemical combine began production with a planned yearly output of 70,000 metric tons of nitrogen fertilizers. Textile production (1952 est.): woollen fabrics 8,100,000 m.; cotton fabrics 95,000,000 m.

Burma.

An independent federal republic, Burma lies on the eastern side of the Bay of Bengal, between Pakistan and India on the northwest, Tibet on the north and China, Indochina and Thailand (Siam) on the east. Area: 261,749 sq.mi. Pop.: (1941 census) 16,823,798; (1951 est.) 18,674,000. Racially, the peoples of Burma are Mongoloid. About 90% are Buddhist by religion, and about 70% use the Burmese language. Largest indigenous minorities (1931): Karens 1,367,673, of whom 218,790 were Christians; Shans 1,057,406; Chin-Kachin group c. 750,000. Largest immigrant minorities: Indian (1931) 1,017,825 divided equally between Moslems and Hindus; Chinese (1941) c. 380,000. Chief towns (pop., 1941 census): Rangoon (capital and main port, 500,800); Mandalay (163,537); Moulmein (71,181); Bassein (c. 50,000); Akyab (pop. 1931, 38,094). Presidents of the republic in 1952: Sao Shwe Thaik and (from March

12) Ba U; prime minister, U Nu.

History.—The first parliament elected under the constitution adopted in March 1947 met in March 1952, in place of the original constituent assembly which, because of the disturbed condition of the country, had carried on as a provisional legislature for nearly five years. It was significant of the situation that the new chamber of deputies was short of members from 24 constituencies where voting was still not possible. The chamber's first task was the election of a president of the Union of Burma, and on March 12 in joint session they chose Ba U, formerly chief justice; the outgoing president, Sao Shwe Thaik, was elected speaker of the upper house. On March 14 a reshuffle of the ministry was approved by the chamber of deputies, U Nu remaining premier, and the cabinet in general was still dominated by the Socialist party. The position of the ministry in the chamber of deputies was assured, as they could count on the support of about 180 members out of 233.

The budget was presented on Aug. 18. The revenue estimates for the year 1952-53, commencing on Oct. 1, showed estimated receipts of 699,434,000 kyats (about \$147,000,000) and estimated expenditure of 654,897,000 kyats (about \$137,760,000), but the capital account estimates provided for receipts of 135,522,000 kyats (\$28,560,000) and expenditure of 476,396,000 kyats (\$98,560,000). Other nonrevenue transactions were estimated to give a surplus of 52,600,000 kyats (\$10,920,000), so that the over-all situation showed a prospective deficit of 243,800,000 kyats (\$51,240,000). The budget speech stressed the importance attached by the government to welfare and capital expenditure, but necessarily defense remained by far the largest item of expenditure, absorbing about \$84,000,000. No important changes in taxation were proposed, and, as in previous years, no provision was made for repayment of the debts due to Great Britain and India.

A number of development plans were announced during the year. A U.S. firm which had been employed to examine and report on possible developments of natural resources reported early in the year, making recommendations in respect of fiscal and monetary policy, mining, industry, transportation, water resources, power supply, agriculture and forestry, and the government appointed a committee to study the report. The receipt of U.S. aid continued; in the two years after June 1950 aid to the extent of about \$10,000,000 reached Burma in the form of goods and services. The acceptance of such aid was criticized by the opposition as liable to prejudice Burma's neutral position in world affairs, but speaking in July the premier affirmed that the policy of neutrality would continue and that his government was prepared to accept aid from any quarter that would give it, provided that no political conditions were attached.

The Communist and other rebellions continued throughout the year, but the government's forces made steady, if slow, progress against the insurgents. In central Burma the Communists were subjected to steady pressure and in May their main headquarters were overrun. The effect of these operations was seen in an effort by the Communists to seek an accord with the government, but the latter would accept nothing less than complete surrender. In Lower Burma the area of the Irrawaddy delta held by the Karen National Defense organization was reduced, though because of the difficulties of the terrain the Karen rebels in the hills of eastern Burma remained almost unmolested; the Karens were able also to carry out a good deal of sabotage of communications, including the severance on several occasions of the pipe line supplying Rangoon with water. In northern Arakan the Moslem rebels, seeking a separate Moslem state or, perhaps, accession to Pakistan, also remained in the field; this Moslem rebellion was small in dimensions, but more important military opera-

tions elsewhere prevented any major action against it.

An effort to conciliate the Karen rebels was made in the establishment by law of a Karen state, autonomous for purposes of local government, in the eastern hills of Lower Burma. The territory allotted to the state comprised the Salween district, and the adjoining townships of Thandaung, Hlaingbwe, Pa-an, Kawkaik and Kya-in Seikkyi. A conciliatory disposition was also indicated by the government in the appointment to the cabinet, as minister for the Karen state, of Mrs. Ba Maung Chain, daughter of the well-known Karen leader, Sir San C. Po. Mrs. Ba Maung Chain toured the Irrawaddy delta, trying to persuade the Karens to lay down their arms, but with little success. The defect of the new Karen state was that the territory granted to it consisted mainly of unproductive hills, while the great majority of Karens lived in the fertile lowlands around Moulmein and in the Irrawaddy delta; and the value of the formation of the state as a conciliatory gesture was further reduced by the fact that the area allotted it was already in the hands of the rebels.

A further cause of disorder was the continued presence in the Shan states of a body of Chinese nationalist troops which sought to use Burma as a base for attacks on Yunnan. This force remained quiescent throughout the year and made no advance against Communist China, but its presence was a clear breach of Burmese sovereignty and was a considerable nuisance to the local inhabitants who were forced to supply food. Efforts by Burmese government forces to dislodge the Chinese were not successful, but, as with the Moslem rebellion in Arakan, the problem was a minor one, affecting only the fringe of the country, and therefore took a secondary place in comparison with the Karen and Communist rebellions.

Among minor developments during the year were the adoption, as from April 1, of the use of Burmese instead of English as the official language of courts and offices, and the adoption of a decimal system of coinage in which the rupee was replaced by the kyat, of the same value, and the kyat was divided into 100 pya instead of 16 annas.

(B. R. P.)

Education.—Schools (1948): primary 4,795, pupils 431,684, teachers 11,315; postprimary 142, pupils 11,648, teachers 722. Teachers' training college 1, with over 200 trainees. Universities (1950) 2, students 3,350 (incl. 780 women).

Finance.—The monetary unit is the kyat, with an exchange rate (1952) of 4.778 kyats to the U.S. dollar.

Foreign Trade.—(1951): Imports 681,000,000 kyats, exports 981,000,000 kyats. Main sources of imports (1951): India 37%; U.K. 16%; Japan 18%; Malaya 6%. Main destinations of exports: Ceylon 24%; India 23%; Japan 13%; Indonesia 13%. Main imports (1951): cotton piece goods 30%; bags and sacks 7%; machinery and vehicles 6%. Main exports: rice 77%; teakwood 5%; cotton, raw, 3%.

Transport and Communications.—Roads (1949) 12,472 mi. Licensed motor vehicles (Dec. 1950): cars 5,100; commercial 24,000. Railways (1950): 1,777 mi.; passenger-miles 80,000,000; net freight ton-miles 93,000,000.

Agriculture.—Main crops (metric tons, 1951): rice 5,900,000; peanuts 180,000; cottonseed 19,000; sesame seed 49,900; cotton, ginned (1950-51), 6,000; dry beans 109,000. Livestock (Jan. 1950): cattle 4,488,000; sheep 21,000; goats 172,000; pigs 402,000; buffaloes 721,000. Fisheries: total catch est. 500,000 tons annually.

Industry.—Factories (1947) 473; persons employed 46,480. Raw materials (metric tons, 1951): tin concentrates 960; natural rubber, net exports, 13,200; lead (1948) 7,500; silver (fine oz., 1948) 480,000; timber, teak (1948-49 rafting season) 68,938 logs.

Buses: see **AUTOMOBILE INDUSTRY; ELECTRIC TRANSPORTATION; MOTOR TRANSPORTATION.**

Business Review. The year 1952 was characterized in the United States by a gradual and orderly expansion of the economy from the record high levels reached in the last half of 1951, in a setting of general over-all stability. The basic economic forces underlying the high level of business activity in 1952 were continued large business outlays for plant and equipment, the stepping-up of government defense expenditures, the record high level of employment and the un-

precedented volume of spendable personal income.

The major readjustments incident to superimposing a defense economy upon an already high-level peacetime economy following the outbreak of war in Korea in mid-1950 were largely completed during the last half of 1951. Throughout the year 1952, except for the midsummer disruptions occasioned by the 53-day steel strike (June 2-July 25), there was a gradual build-up in the pace of economic activity on a wide economic front. The extent of the expanded activity is roughly measured by the increase in the gross national product which, as reported by the department of commerce, reached an annual rate of \$344,000,000,000 in the third quarter of the year, a gain of \$4,600,000,000 from the first quarter and of \$6,900,000,000 from the third quarter in 1951. The two major factors in the increase in the gross national product were the increase in government defense expenditures and increases in personal consumption expenditures.

The inflationary pressures which converged upon the economy in mid-1950 with the outbreak of war in Korea, though unspent and still present, were largely under control by mid-1951 so that the stepping-up of government purchases for national security throughout 1952 was accomplished without accentuating inflationary trends as measured by prices to any marked degree. A rising volume of production also acted as a brake on inflation.

The Defense Production Act of 1950 which was due to expire June 30, 1952, was amended and extended by act of congress approved June 30, 1952 (public law 429, 82nd congress), effective July 1, 1952. This act extended the major economic controls to the middle of 1953 with modifications mainly in the direction of liberalizing price and credit control provisions, reflecting the easing of inflationary pressures as indicated by wholesale and retail price trends and manufacturers' inventories. The amendments to the Defense Production act of 1952 discontinued authority for regulation of consumer instalment credit



PRE-CHRISTMAS shopping crowds in midtown Chicago, Ill., late in 1952. Christmas sales in department stores across the nation were generally higher than for 1951 except in New York city where sales dropped



OVERHEAD CONVEYORS for eliminating the handling of meat being transferred from refrigerator cars to storage in a warehouse opened by the Great Atlantic & Pacific Tea Co. at Toledo, O., in 1952

(regulation W), and for the volunteer credit restraint program. Authority to control real estate construction credit was continued, but residential credit was made contingent upon the rate at which new houses were started. The effect of these amendments was to withdraw two supplementary instruments of selective credit restraint and to limit the flexibility with which the third could be administered in the event of a resurgence of inflationary pressure.

National Product and Income.—The gross national product as reported by the department of commerce reached an annual rate of \$339,400,000,000 during the first quarter of 1952—an all-time high as of that date and an annual rate \$2,300,000,000 above the rate in the fourth quarter of 1951. During the second quarter the annual rate was stepped up by \$3,800,000,000 to \$343,200,000,000. The Council of Economic Advisers estimated the gross national product for the third quarter at an annual rate of \$344,000,000,000, or an annual rate \$13,100,000,000 above the third quarter of 1951 and \$4,600,000,000 above the first quarter of 1952. The third quarter increase from the first quarter of the year was caused by increases in government purchases of goods and services for national defense and in personal consumption expenditures, the former increasing during the period by \$3,600,000,000 and the latter by \$2,800,000,000. Net foreign investment declined by \$1,900,000,000 during the period, and there was no expansion in the rate of government expenditures other than for national security, nor in the rate of private domestic investment which was at an annual rate of \$50,000,000,000 in the third quarter, somewhat lower than the rate which prevailed throughout 1951.

National income or purchasing power distributed through the economy also reached a new all-time high in 1952. For the first quarter of the year the national income as reported by the department of commerce was at an annual rate of \$288,000,000,000 or \$2,400,000,000 above the fourth quarter of 1951. There was little change from the first quarter in the annual rate during the second and third quarters of the year—the rate was slightly down in the second quarter and slightly up the third quarter, but the third-quarter annual rate of \$288,200,000,000 was \$8,000,000,000 above the third quarter of 1951. The increase from the third quarter of 1951 was primarily the result of an increase in the compensation of employees which, at annual rates, was \$7,200,000,000 greater than in the third quarter of 1951.

Proprietors' income, rental income and interest income were also above the third quarter of 1951. Corporate profits before taxes and after inventory valuation adjustment were below the third quarter of 1951, but the average annual rate for the first three quarters of 1952 was \$41,700,000,000, substantially the same as in 1951 and \$6,900,000,000 above 1950. (See also INCOME AND PRODUCT, U.S.)

Prices.—Throughout 1951 retail prices were relatively stable at the new high level with a rising trend during the fourth quarter, while wholesale prices after March 1951 declined steadily. During the first half of 1952 wholesale prices continued to decline, and after a slight upturn in July and August resumed the downward trend in September. In June 1951 the department of labour's index of wholesale prices stood at 111.2% of the 1947-49 average, a decline of 1.6% from January and of 3.3% from June 1951. Retail prices, on the other hand, after a slight drop in Feb. 1952, primarily because of a fairly sharp drop in food prices, continued to rise slowly and by the middle of July had reached a new high peak slightly above the January level.

The increase in the all-items consumers' price index of the department of labour was largely the result of increases in the food and rent items in the index; apparel and house furnishings items trended slowly downward after the last quarter of 1951. The sustained high level of retail prices throughout the year suggests that expanding demand continued to press on the supply of commodities available to meet both civilian and defense requirements. (See also PRICES.)

Employment.—Employment in 1951 reached record high levels when the monthly average for the year, according to reports of the department of commerce, reached 61,005,000. During the first eight months of 1952 employment continued at the same high level with substantially the same pattern of seasonal fluctuations from month to month as in 1951. During the first quarter of 1952 employment was down seasonally from the fourth quarter of 1951, but was slightly above the corresponding quarter in 1951. During the second quarter employment increased steadily, reaching a peak for the first eight months of the year at 62,572,000 in June, which was 769,000 above the June 1951 peak. During the third quarter of the year employment declined from the June peak, but in each month of the July-September period the total number employed exceeded 62,000,000.

Nonagricultural employment was estimated at 54,712,000 in September, an increase of 658,000 over Sept. 1951. Agricultural

employment in September was 7,548,000, substantially the same as in Sept. 1951.

The number of persons in the civilian labour force increased during the year with the peak coming in the June-July period, when the number of persons available for work was slightly more than 64,000,000. In September the labour force dropped to 63,698,000, of which 62,260,000 were employed. The number unemployed in September represented only 2.3% of the civilian labour force, the lowest proportion at any time since 1944. (See also EMPLOYMENT.)

Wages and Hours.—During the first eight months of the year average hourly earnings of production and related workers in manufacturing were fairly constant, fluctuating between \$1.64 and \$1.66 as reported by the department of labour. The monthly average for 1950 was \$1.47, and for 1951, \$1.59. Retail price increases from 1951 somewhat reduced the purchasing power of wages. In terms of 1951 prices, average hourly earnings for the first eight months of the year fluctuated between \$1.61 and \$1.64. The highest hourly rates were paid in building construction, ranging from \$2.26 to \$2.29; the lowest, in retail trade, ranging from \$1.28 to \$1.32. Average hourly earnings in the durable goods industries were slightly higher than in the non-durable goods industries, the former ranging from \$1.72 to \$1.76 during the first eight months of the year; the latter, from \$1.52 to \$1.55.

Average hours worked per week in manufacturing industries remained fairly constant at about 40 hours, dropping slightly lower in April and July. Hours worked per week were slightly longer in the durable goods industries than in the nondurable goods industries, ranging in the former from 40.3 to 41.8 and in the latter from 38.4 to 39.8. In building construction average weekly hours ranged from 36.9 to 38.7.

Average weekly earnings of production and related workers in manufacturing during the first eight months of the year ranged from \$65.80 to \$66.91. For the same period, average weekly earnings in durable goods manufacturing ranged from \$69.88 to \$72.81; in nondurable goods manufacturing, from \$58.71 to \$61.45; in building construction, from \$84.57 to \$88.31; in retail trade, from \$50.90 to \$53.25. Average weekly earnings of production and related workers in manufacturing in Aug. 1952 at \$66.85 were \$2.53 above Aug. 1951, but in terms of 1951 prices the increase was reduced to 53 cents. (See also WAGES AND HOURS.)

Personal Income, Spending and Savings.—Total personal income in Jan. 1952 was at the annual rate of \$263,400,000,000 and by August had risen to a new high annual rate of \$267,100,000,000, a gain of \$3,700,000,000 from Jan. 1952 and of \$10,400,000,000 from Aug. 1951, according to reports of the department of commerce. Disposable personal income, that is, income after taxes, was at an annual rate of \$230,500,000,000 in the first quarter of the year, an annual rate \$12,500,000,000 above the first quarter of 1951. In the third quarter of 1952 disposable personal income rose to an annual rate of \$233,000,000,000, an increase of \$2,500,000,000 from the first quarter of the year.

Personal consumption expenditures during the first quarter of 1952, at an annual rate of \$213,200,000,000, were higher than for any quarter in 1951 when the second wave of scare buying was touched off by the entrance of the Chinese Communists into the Korean war, continued to increase during the second quarter and reached an annual rate of \$216,000,000,000 in the fourth quarter.

During the first three quarters of the year the rate of increase in personal consumption expenditures paralleled the rate of increase in disposable personal income, so that the annual rate of personal net savings remained fairly constant from quarter to quarter at around \$17,000,000,000, or a little more

than 7% of disposable personal income.

Production.—Industrial production for the year 1952 continued at the high level reached in 1951, although there were some shifts and temporary interruptions. During the first quarter of the year total industrial production, as measured by the federal reserve board's index, expanded from the final quarter of 1951. The index in February rose to 222% of the 1935-39 average, higher than for any month in the last half of 1951. Beginning with March there was a gradual decline through May followed by a sharp drop in June and July, because of the prolonged steel strike which affected production in the durable goods industries on a broad front. In August, with the steel strike ended, production expanded rapidly, and in September the index rose to 223% of the 1935-39 average, the previous postwar peak, and the highest point for the previous 18-month period.

The index of manufacturers' durable goods continued to rise during the first three months of the year, reaching the high point of 284% of the 1935-39 average in February and March. The index eased to 277% in April and May, and dropped precipitately in June and July, falling to the low point of 231% in July, a decline of 53 percentage points from the high point in March. The trend in the production of nondurable goods for this period paralleled that of durable goods, except that the downturn started a month earlier, in February, and the effect of the steel strike was less pronounced. The production of both durable and nondurable goods expanded rapidly in August and September, the index of durable goods rebounding to 283% in September, only slightly below the year's high in February and March, and the index of nondurable goods rising to 192%, the highest for the year.

New Plant and Equipment.—The increase in business expenditures for new plant and equipment which began in the second quarter of 1950 was accelerated after the outbreak of the Korean war in mid-1950. During the year 1951 the annual rate of such expenditures was stepped up quarter by quarter and in the fourth quarter, according to estimates of the department of commerce, reached an annual rate of \$27,300,000,000, an increase in the annual rate of \$6,700,000,000 from the annual rate in 1950.

Throughout the year 1952 business expenditures for plant and equipment were at an annual rate slightly above that reached in the last quarter of 1951, and were estimated for the fourth quarter of 1952 at an annual rate of \$27,900,000,000.

Expenditures for new plant and equipment in manufacturing constituted 43.8% of the total in the first quarter of 1952 and rose to 47.3% of the total in the fourth quarter. In the fourth quarter, manufacturers' expenditures for plant and equipment were estimated by the department of commerce to be at an annual rate of \$13,320,000,000, or a rate about \$1,280,000,000 above the rate in the first quarter of the year. Public utilities' expenditures for new plant and equipment, also, were at a higher level through 1952 than in 1951, and in the fourth quarter of the year were estimated at an annual rate of \$4,200,000,000. Expenditures for new plant and equipment by commercial and other types of businesses continued at a high level throughout 1952 but were slightly below the high level of 1951, with a slightly downward trend throughout the year. The annual rate of expenditures during the fourth quarter was estimated at \$6,790,000,000 by the department of commerce, a drop of \$48,000,000 from the annual rate of the first quarter.

Inventories and Sales.—Total business inventories declined slowly but constantly throughout the first eight months of the year, but remained near the high level of the last half of 1951. According to department of commerce estimates, total inventories at the beginning of the year stood at \$70,219,000,000 and

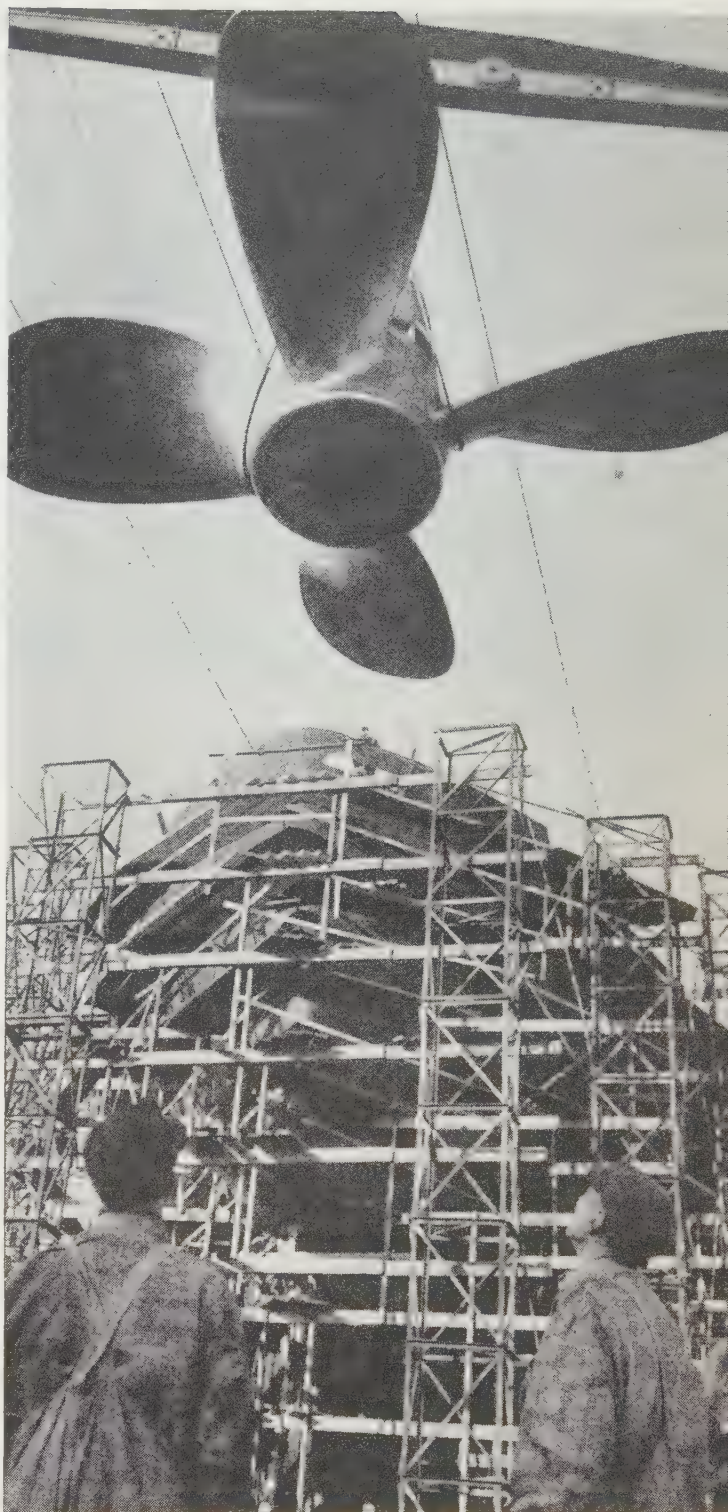
at the end of an eight-month downward trend stood at \$69,481,000,000 in August. Retail inventories for the January-August period trended slightly downward while manufacturers' inventories climbed slowly. In the over-all picture, the decline in retail inventories as personal consumption expenditures increased tended to offset the increase in manufacturing inventories. The high level of manufacturers' inventories and the gradual increase in volume after the middle of 1951, combined with a fairly constant trend in manufacturers' sales, was reflected in the easing of wholesale prices after mid-1951. In like manner, the gradual drop in retail inventories during the same period, combined with sustained and rising retail sales, was reflected in the upward trend in the retail price level. The spread between department store inventories and sales during the first eight months of the year, except for the two short-lived periods of scare buying incident to the Korean war, was less than at any period since the first quarter of 1950.

Construction and Real Estate Activity.—Construction and real estate activity continued at high levels in 1952, and the physical volume of new construction was at a record level according to reports of the board of governors of the federal reserve system. The dollar volume of new construction in each of the first nine months of 1952 was substantially above the 1951 monthly average of \$2,585,000,000 according to reports of the department of commerce.

The record high of \$2,854,000,000 was reached in March, and the monthly total for each of the months in the third quarter was well over \$2,600,000,000. Private construction—residential, nonfarm construction and business construction—accounted for roughly two-thirds of the total, and federal, state and local government construction for about one-third of the total. Of the \$2,676,000,000 total in Sept. 1952, \$1,802,000,000 was for private construction and \$873,000,000 was for federal, state and local government construction including public residential construction. From March 1952 through August, with the single exception of the month of June, the number of new houses started was well above the number for the corresponding month in 1951, although substantially below the corresponding months of 1950, the peak postwar year for residential building. (See also BUILDING AND CONSTRUCTION INDUSTRY; HOUSING.)

Consumer Credit.—Reflecting the waning inflationary pressures as goods became more abundant, the federal reserve board, on May 7, suspended the regulation on instalment credit (regulation W). A few days earlier, the board had suspended the voluntary credit restraint program. The Defense Production Act Amendments of 1952, passed June 30, 1952, and effective July 1, among other things, discontinued authority for the regulation of consumer credit and for the voluntary credit restraint program. During the period of credit restriction, consumer instalment credit remained fairly constant, around \$13,000,000,000. With the removal of restrictions, instalment credit increased rapidly and by August had reached \$14,907,000,000, an increase of \$1,851,000,000 from the low point for the year in March. The total amount of consumer credit outstanding in August was estimated by the federal reserve board at \$21,393,000,000, an increase of \$2,131,000,000 from August 1951 and of \$2,828,000,000 from the low point in March 1952. (See also CONSUMER CREDIT; FEDERAL RESERVE SYSTEM.)

Business Profits.—Corporate profits before taxes reached their all-time high at \$50,100,000,000 in the first quarter of 1951, declined during the second and third quarters and reversed the trend in the fourth quarter when they amounted to \$39,500,000,000. In 1952 profits before taxes expanded to \$42,700,000,000 in the first quarter and dropped to \$40,000,000,000 in the second and third quarters according to estimates of the department of commerce. Under the provisions of the 1950 tax



SHIPWAY at the Deutsche Werft, largest shipyard in Hamburg, Ger., where almost every month saw a new ocean-going ship completed in 1952. The revival of industry in Hamburg dated from the lifting of all Allied restrictions, in 1951, on building for Germany's own merchant marine

bill which became fully effective during the first quarter of 1951, the tax liability was raised to an over-all rate of around 55% of profits before taxes. During the first two quarters of 1952 corporate profits after taxes were lower than in the corresponding quarters of 1951, but in the third quarter, at an annual rate of \$17,000,000,000, they were substantially the same as in the third quarter of 1951. Although profits after taxes during the second and third quarters were at an annual rate \$1,100,000,000 below the first quarter of the year, dividend payments were slightly higher than in the corresponding

Per Cent Changes in Selected Business Indicators, United States

1952 from Selected Earlier Periods

Per cent change in selected business and economic indicators, 1952 from selected earlier periods																		Per cent change
Business or economic indicator	Per cent change 1952* from:			Per cent change from preceding year										Per cent change Aug.† from:				Per cent change
	1939	1944	1951	Jan. 1952 from Jan. 1951	Feb. 1952 from Feb. 1951	March 1952 from March 1951	April 1952 from April 1951	May 1952 from May 1951	June 1952 from June 1951	July 1952 from July 1951	Aug. 1952 from Aug. 1951	Sept. 1952 from Sept. 1951	Jan. 1952	May 1952	July 1952	July 1952 from May 1952		
General business:																		
Business activity ¹	+71.4	+19.7	-1.0	-1.6	+2.0	-0.1	-3.5	-4.0	-13.5	-14.0	+1.7	+5.5	+0.5	+3.9	+21.2	-14.3		
Bank debits ²	+404.1	+89.5	+3.4	-0.1	+5.7	+2.7	+0.6	+1.0	+8.0	+6.7	+0.3	+	-10.1	+6.2	+10.0	+4.2		
Commercial failures ³	-49.5	+502.4	-8.8	-2.9	-20.2	+4.9	+10.2	-6.5	-5.2	-11.2	-16.5	-20.9	-21.8	-24.5	-13.6	-12.6		
Personal income ⁴ :																		
Salaries and wages	+289.6	+52.9	+5.6	+9.5	+8.8	+7.1	+5.5	+5.6	+4.5	+3.9	+5.7	+	+2.5	+1.7	+2.1	-0.4		
Total	+266.5	+60.4	+4.7	+7.2	+7.3	+5.9	+5.0	+5.2	+4.9	+3.7	+4.1	+	+1.4	+1.0	+1.2	-0.2		
Civilian nonagricultural employment ¹	+50.6	+21.0	+0.9	+1.0	+1.3	-0.2	+0.6	+0.9	+1.2	§	+0.8	+	+3.5	+2.2	+1.4	+0.8		
Unemployment ¹	-81.3	+165.2	-5.4	-17.9	-13.3	-16.0	-7.6	-0.4	-8.2	+4.6	+1.6	+	-21.9	+0.1	-17.4	+21.2		
Employment and earnings (mfg.) ⁵ :																		
Number Employed	+55.7	-12.7	-2.1	-1.8	-2.9	-3.0	-3.0	-3.0	-5.1	-6.0	-1.7	+	+0.6	+2.0	+6.1	-3.9		
Pay rolls	+337.8	+27.3	+1.3	+3.2	+2.0	+0.9	-1.3	+0.1	-2.3	-3.7	+3.6	+	+1.6	+3.7	+9.3	-5.1		
Per production worker ⁵ :																		
Weekly earnings	+180.6	+45.3	+3.1	+4.9	+4.8	+4.4	+1.8	+3.3	+3.0	+2.4	+3.9	+	+0.1	+0.3	+1.6	-1.3		
Hourly earnings	+162.6	+63.1	+4.2	+5.5	+5.3	+5.4	+4.9	+4.5	+3.8	+3.2	+4.2	+	+1.4	+0.3	+0.8	-0.5		
Hours per week	+6.6	-11.1	-1.2	-0.5	-0.5	-1.0	-2.9	-1.2	-0.7	-0.7	-0.2	+	-1.5	§	+0.8	-0.7		
Industrial production ² :																		
Durable goods	+149.5	-22.9	-0.4	+5.2	+4.8	+2.9	-0.7	+0.4	-9.5	-12.8	+0.4	+	-5.0	-3.2	+16.0	-16.6		
Iron and steel	+107.0	+14.6	-8.9	+2.4	+3.6	-0.4	-7.2	-6.8	-45.6	-44.3	-5.5	+	-8.0	-2.0	+70.2	-42.4		
Non-durable goods	+71.6	+9.4	-3.6	-6.0	-5.5	-5.5	-7.6	-8.6	-5.6	-4.3	-1.6	+	+0.5	+5.0	+6.1	-1.1		
Total	+97.2	-8.5	-1.8	§	+0.5	-0.5	-3.1	-5.0	-7.7	-9.0	-0.9	+	-2.7	+1.9	+11.4	+8.5		
Value construction contracts awarded ⁶ :																		
Residential	+396.8	+1,802.2	+6.8	-19.8	-25.4	+3.2	+15.4	+18.6	+6.7	+10.9	+10.6	+8.1	+53.5	-33.8	-14.7	-22.4		
Nonresidential	+640.9	+695.4	+4.9	-22.4	-30.1	-1.3	+8.5	-71.7	-0.3	+4.9	+9.2	+214.6	+255.7	+174.9	+126.1	+21.6		
Public works and utilities	+155.5	+328.3	+17.3	+28.1	+5.1	+18.6	+32.9	+24.9	+14.5	+15.4	+32.8	+25.0	+20.2	-28.4	-27.1	-1.9		
Total	+378.2	+751.4	+7.8	-13.5	-22.4	+4.2	+16.2	-38.1	+5.7	+9.5	+13.9	+88.3	+126.1	+28.0	+34.9	-5.2		
Distribution ¹ :																		
Department store sales	+208.6	+74.2	-0.9	-13.6	-8.7	§	-1.0	+3.8	+5.7	§	+4.6	-0.9	-1.9	-1.9	+1.0	-2.8		
Chain store sales																		
Total retail sales	-67.8	-80.7	+2.8	-6.2	-3.3	-1.1	+3.6	+6.6	+8.4	+6.6	+2.4	+	+1.8	-3.2	-1.9	-1.4		
Consumer credit outstanding—total ²	+201.2	+325.6	+8.4	+0.9	+0.9	+0.9	+3.5	+5.7	+8.8	+10.8	+11.1	+	+6.3	+5.4	+0.9	+4.5		
Wholesale prices:																		
Other than farm and food ⁵	+94.8	+60.8	-2.3	-2.0	-2.6	-3.0	-3.2	-3.3	-3.1	-2.8	-1.7	+	-1.2	-0.1	+0.4	-0.4		
Prices received by farmers ⁷	+208.4	+49.5	-3.0	§	-7.7	-7.4	-6.1	-3.9	-3.0	+0.3	+1.0	+	-1.7	+0.7	§	+0.7		
Total ⁵	+123.2	+65.4	-2.6	-1.7	-3.4	-3.6	-3.9	-3.7	-3.4	-2.1	-1.4	-1.5	-1.2	+0.1	-0.1	+0.2		
Retail prices:																		
Food ⁵	+143.2	+70.1	+1.8	+4.7	+0.7	+0.6	+1.9	+1.5	+2.0	+3.2	+3.7	+	+1.3	+2.0	+0.3	+1.8		
Total cost of living ⁵	+91.0	+51.1	+2.3	+4.2	+2.2	+1.9	+2.2	+1.9	+2.4	+2.9	+3.0	+	+1.1	+1.1	+0.2	+1.0		
Prices paid by farmers ⁷	+127.3	+58.0	+1.5	+5.0	+3.4	+1.1	+1.1	+1.5	+0.4	+0.7	+1.1	+	-0.4	-0.7	+0.4	-1.1		
Banking items of member banks ² :																		
Loans	+327.1	+215.5	+7.6	+12.3	+8.6	+7.0	+7.1	+6.4	+7.9	+9.4	+8.1	+8.8	+3.9	+5.2	+2.1	+3.1		
Investments in U.S. government obligations	+204.4	-19.0	+2.8	-1.1	+3.5	+2.4	+1.6	+3.9	+3.9	+8.7	+4.5	+1.9	-1.1	+1.1	-4.4	+5.8		
Total investments	+183.5	-7.2	+3.8	-0.2	+4.1	+3.2	+2.8	+4.9	+5.3	+9.3	+6.3	+3.8	+1.1	+2.2	+3.4	+5.7		
Money in circulation	+310.4	+28.2	+3.3	+4.9	+4.5	+4.6	+4.7	+4.5	+4.8	+4.3	+4.1	+4.1	+2.7	+2.8	+1.0	+1.8		
Foreign trade (merchandise) ⁴ :																		
Exports	+392.9	+9.8	+4.3	+28.5	+24.1	+10.7	-2.6	+8.2	-9.9	-14.6	-15.7	+	-14.5	-27.0	+5.4	-30.8		
Imports	+342.5	+161.1	-6.4	-9.9	-1.9	-12.5	-9.7	-18.0	-7.4	-6.5	-7.3	+	-11.4	-2.2	-2.3	+0.1		
Corporate profits after taxes ⁴	+232.0	+53.7	-11.2	§	§	-16.6	§	§	-8.0	§	§	+	§	§	§	§		

*Data for November and December estimated on the basis of October levels taking into account the seasonal factor where significant.

†Data for October estimated on the basis of the September level taking into account the seasonal factor where significant.

‡Less than 0.05%. §Corporate profits reported quarterly. ¹New York Times. ²Federal Reserve Board. ³Dun and Bradstreet, Inc.⁴United States Department of Commerce. ⁵United States Department of Labor. ⁶F. W. Dodge Corporation. ⁷United States Department of Agriculture.

quarters of 1951 and undistributed profits were correspondingly lower. In the third quarter of 1952 dividend payments were at an annual rate of \$9,500,000,000 and undistributed profits at an annual rate of \$7,500,000,000.

Gross Private Domestic Investment.—Total gross private domestic investment during the first three quarters of the year was at an annual rate of about \$50,000,000,000, according to the department of commerce. Of the total, slightly more than \$23,000,000,000 was in new construction and about \$25,000,000,000 was in producers' durable equipment. Of the total investment in new construction about one-half, or \$11,000,000,000, was in residential nonfarm construction. The investment in business inventories declined drastically in the first three quarters of the year compared with the same period in 1951. During the first three quarters of 1951 investment in business inventories ranged from an annual rate of \$8,900,000,000 in the third quarter to \$16,300,000,000 in the second quarter. In 1952, the range during the first three quarters was from an annual rate of only \$100,000,000 in the second quarter to \$2,000,000,000 in the third quarter. (V. B. B.)

Other Countries.—Conditions in 1952 were governed largely by a return to a more normal state after the Korean disturbance and by a new stringency caused by rearmament. The year opened with the prices of raw materials generally falling, and this movement continued fairly widely up to midyear. By this time a number of materials—jute, manilla hemp, sisal, flax, wool, lead, rubber and zinc—had returned to about the pre-Korean level. It seemed doubtful whether prices would continue to fall, indi-

cating the approach of a slump, or whether they would become steady, suggesting that the disturbance caused by the Korean war was only an interruption in a long-term improvement. Wool steadied at its level of June 1950, but the other fibres continued weak. Lead and rubber steadied at the pre-Korean level, and tin rather higher, but zinc declined further. Copper had a divergent trend and tended steadily higher, a development probably connected equally with the claims of rearmament and with the uninterrupted progress of the electrical industries.

These trends reflected general uncertainties. On the one hand the panic buying of mid-1950 was being corrected. The world turnover in trade seemed to be diminishing. Tramp shipping freight rates (which had reached a peak in Oct. 1951) fell, by July had reached the level of Sept. 1950 and were still falling. For the third quarter of the year the International Materials conference increased its allocation of a substantial range of materials, including copper and nickel. On the other hand industry—in the United States, Great Britain, in western Germany and in France for instance—was at a very high or a rising level. Moreover, the fall in world prices was in a sense artificial; partly, at least, it was brought about by the dearer money policy adopted in such important industrial countries as the U.S., Great Britain, the German Federal Republic, France, Canada and Sweden. It was significant that capital development was increasing in a number of important countries while expenditure on consumption goods was falling, or at least lagging. This was an unstable position which would clearly end either in stagnation in the capital goods indus-



PART OF THE STRING section of the symphony orchestra made up of employees of the Bell Telephone system in the New York-New Jersey area. The orchestra gave its fourth annual concert at Carnegie hall, New York city, in 1952

tries or in greater activity in the consumption goods industries. The activity in the capital goods industries, coupled with import restrictions such as those imposed by Great Britain and Australia, suggested that a period of economic nationalism might be approaching. In the relative position of the capital and the consumption goods industries rearmament evidently played an important part. The growing development of the capital goods sector under the impact of rearmament became increasingly important.

Most governments were anxious to steer a course between inflation and deflation, between boom and unemployment. The effects of the post-Korean slump had been intensified by the dear money policies widely adopted to combat inflation and to attack the problems of rearmament, but during 1952 some countries had to revert to cheaper money. Even so consumption was relatively low.

Business conditions in the German Federal Republic were affected by factors peculiar to that country and by others associated with the working of a fairly liberal economy. Under the first head came the absence of expenditure on armaments and the receipts of large supplies of coal from the United States; under the latter the existence of a considerable reserve of unemployed. The result was a flourishing but austere economy. Business in the consumer goods industries continued moderate, though in the second half of the year consumer buying tended to improve. The capital goods industries, on the other hand, continued to expand rapidly though there was a shortage of coke and the improvement in the output of coal and steel was sluggish. A large export surplus made it possible to import the raw materials needed and to prevent a holdup in industry. The credit needed for the development of capital investment was created by the sale of foreign currencies accruing to the banks through the export surplus. A proportion of the resulting purchasing power was used to bring about a substantial increase in savings.

In Italy business conditions showed the working of economic liberalism and also deflationism in an economy much weaker than western Germany's. The chronic kernel of unemployment grew; the large proportion of those who had never been em-

ployed and of black-coated workers being particularly ominous. Demand for consumption goods (with the exception of food) was low, and the textile industry in particular continued to suffer from the previous year's depression. The capital goods industries did relatively well. The output of the steel mills and of electric power was satisfactory, business there being helped by the arrival of the first armaments orders from the North Atlantic Treaty organization. Exports suffered from foreign import restrictions, notably those imposed by Great Britain, France and Australia. The dubious view taken of business prospects generally was reflected in the high yield—about 10%—of leading equities.

Conditions in Australia resembled in an exaggerated and therefore specially clear form world conditions generally. The slump in the price of wool led to a severe reduction in the national wool cheque; this had a strong deflationary effect, which was supported by government action. During the first half of the year imports were drastically restricted. Thus some stagnation in business was inevitable, but it was noted that people did not find it necessary to draw heavily on their savings. At Easter time conditions were uneven. In Victoria demand tended to improve, though at the wholesale rather than at the retail level. In New South Wales and in South Australia and Western Australia business was fairly satisfactory; in Queensland on the other hand trade was dull, but the recession was not sufficiently severe to affect food sales. In New Zealand business followed a similar but less strongly deflationary line.

In Sweden, which resembled Australia in being a large producer of raw materials with a considerable industry and a high standard of living, conditions were similar. The difficulties caused by heavy buying of consumer goods after the Korean crisis were reinforced by a heavy fall in the value of Swedish exports. During the first four months of 1952 the production of consumer goods fell by 6% on a seasonal basis, the fall being particularly pronounced for textiles and shoes and imperceptible for food. Exports suffered particularly from the drop in the price of timber and of wood pulp. These difficulties were partly offset by a boom (connected with overseas rearmament) in the production of pig iron. The engineering industry also did well and employment remained full. On the whole, therefore, the economies of Australia and Sweden, both primarily producers

of raw materials though with important industries, achieved reasonable stability.

The growing interest of western Germany in South America made itself felt, and it was reported that a large metallurgical plant was to be established by a German group in Minas Gerais, Braz. (See also BANKING; INTERNATIONAL TRADE; LAW; STOCKS AND BONDS; TARIFFS; TAXATION.) (W. H. JN.)

Butter: see DAIRY PRODUCTS; VEGETABLE OILS AND ANIMAL FATS.

Byrd, Harry Flood (1887—), U.S. senator, was born on June 10 at Martinsburg, W.Va., an elder brother of Adm. Richard E. Byrd. Educated at the Shenandoah Valley academy, Winchester, Va., he began his career as a journalist on the *Winchester Star* (owned by his father), also becoming engaged in farming and fruit-growing. He was a member of the Virginia state senate (1915-25), chairman of the Democratic state committee (1922-25) and governor of Virginia (1926-30). On March 4, 1933, he was appointed U.S. senator to fill the unexpired term of Claude A. Swanson, who had been named Pres. Franklin D. Roosevelt's secretary of the navy. Byrd was elected for the full term 1935-41 and re-elected for the terms 1941-47, 1947-53 and 1953-59. From the first days of the New Deal he opposed almost all its proposed legislation except defense and war measures. He became one of the senate's most persistent advocates of economy in government.

Although Pres. Harry S. Truman in 1950 had complained of "too many Byrds" in congress, Byrd revealed on Jan. 9, 1951, that he had received a cordial letter from the president which was interpreted as a move to reconcile the southern Democrats. Throughout the rest of the year and in 1952, however, Byrd continued his attacks on the administration's domestic and foreign policy.

Byrd won re-election to the senate for his fifth term of office in the national elections of Nov. 4, 1952.

Cabinet Members. The following members of President Harry S. Truman's cabinet held office on Oct. 1, 1952:

Post	Name	State
Secretary of State	Dean G. Acheson	Maryland
Secretary of the Treasury	John W. Snyder	Missouri
Attorney General	James P. McGranery	Pennsylvania
Postmaster General	Jesse M. Donaldson	Illinois
Secretary of the Interior	Oscar L. Chapman	Colorado
Secretary of Agriculture	Charles F. Brannan	Colorado
Secretary of Commerce	Charles Sawyer	Ohio
Secretary of Labor	Maurice J. Tobin	Massachusetts
Secretary of Defense	Robert A. Lovett	New York

Great Britain.—The following is a list of cabinet members of Great Britain on Sept. 30, 1952:

Post	Name
Prime Minister and First Lord of the Treasury	Winston Leonard Spencer Churchill
Secretary of State for Foreign Affairs	Robert Anthony Eden
Lord President of the Council	Lord Woolton
Secretary of State for Commonwealth Relations	The Marquess of Salisbury
Lord Chancellor	Lord Simonds
Secretary of State for the Home Department and Minister for Welsh Affairs	Sir David Patrick Maxwell Fyfe
Chancellor of the Exchequer	Richard Austen Butler
Lord Privy Seal	Harry Frederick Comfort Crookshank
Minister of Defence	Earl Alexander of Tunis
Secretary of State for the Colonies	Oliver Lyttelton
Secretary of State for Scotland	James Gray Stuart
Secretary of State for the Co-ordination of Transport, Fuel and Power	Lord Leathers
Minister of Health	Iain A. Macleod
Minister of Labour and National Service	Sir Walter Turner Monckton
Minister of Housing and Local Government	Harold Macmillan

Post	Name
President of the Board of Trade	George Edward Peter Thorneycroft
Paymaster General	Lord Cherwell

(See also GOVERNMENT DEPARTMENTS AND BUREAUS.)

Cacao: see COCOA.

Cadmium: see MINERAL AND METAL PRODUCTION AND PRICES.

Calendar of Events, 1952: see pages 1-16.

California. Known as the "Golden state" because of the importance of gold production in its history, California acquired statehood on Sept. 9, 1850. The most southerly Pacific coast state of the United States, California is ranked second nationally in both area and population. A total area of 158,693 sq.mi. includes a water area of 1,953 sq.mi. As of July 1, 1951, the U.S. bureau of the census estimated California's population at 11,024,000 (1950 census, 10,586,223). Chief cities (with 1951 population estimates and 1950 populations in parentheses) were: Los Angeles 2,000,171 (1,970,358); San Francisco 785,357 (775,357); Oakland 384,575 (384,575); San Diego 375,000 (334,387); Long Beach 250,767 (250,767); Fresno 147,094 (91,669); Sacramento (the state capital) 137,784 (137,572); Berkeley 113,000 (113,805); Pasadena 104,087 (104,577); Richmond 101,000 (99,545); Glendale 100,000 (95,702); San Jose 98,300 (95,280).

History.—During 1952 the state officers remained Earl Warren, governor; Goodwin J. Knight, lieutenant governor; Frank M. Jordan, secretary of state; Charles G. Johnson, treasurer; Thomas H. Kuchel, controller; Edmund G. ("Pat") Brown, attorney general; Roy E. Simpson, superintendent of public instruction.

Earthquakes punctuated the year, with two serious quakes and many minor disturbances reawakening California's realization of the unusual geologic nature of the state. Property destruction and loss of life accompanied quakes whose damage centres were at Tehachapi and Bakersfield.

Continued urban and suburban development was evident from the great volume of tract houses built and purchased in 1952.

California's critical water problem was alleviated by abundant rain and heavy snowfall during the winter of 1951-52, while artificial solution was implemented by the U.S. navy plan for construction of a second aqueduct for the water-deficient San Diego area. Elsewhere in the state excessive spring runoff of water, resulting from the incompleteness of two of the Central valley project's major storage reservoirs, caused early crop damage.

Education.—Average daily attendance for budgetary purposes for 1950-51 in elementary school districts was calculated at 1,271,200, in high school districts at 422,321 and in junior college districts at 90,106.

Social Insurance and Assistance, Public Welfare and Related Programs.

As of July 1952 there were 272,904 recipients of old-age security payments with average monthly aid being \$66.18 per person (July 1951, 274,271 at \$66.93 per recipient). The aid to the needy blind program made average payments of \$81.24 to 11,090 persons. An average of \$50.05 per child was given to 136,866 needy children, while general home relief was provided for 25,475 cases. For the month of Aug. 1952 the three state-administered social insurance programs compensated 82,817 unemployed or disabled claimants per week in the total amount of slightly less than \$8,000,000 for the month. Total expenditures for the state department of corrections for the year 1951-52 were estimated at \$13,652,528. The total population of California's correctional institutions for adults as of July 31, 1952, was 12,771, including 410 women. Inmates of youth authority institutions numbered 2,487 (as of Aug. 1952), of which 313 were in its two schools for girls, 296 in its three forestry camps for boys and 1,104 in its four schools for boys; the remainder were in other institutions or prisons.

Communications.—Final automobile registrations for 1950 were 4,076,484, while the total number of vehicles aggregated 5,043,368. Estimated total expenditures by the state division of highways for reconditioning, resurfacing and construction of highways for 1951-52 were estimated at \$133,888,594 including \$21,754,971 in federal-aid contributions (1950-51, \$131,978,471 including \$16,828,919 federal assistance). Figures for 1950 indicated 7,518 mi. of steam railways and 702 mi. of electric railroads within California. As of Jan. 1, 1951, the state had 530 airfields, including 169 commercial, 162 municipal, 43 military and 156 other airports. At the same time there were 3,984 mi. of federal airways. Telephone stations within the state numbered 3,820,000.



PASSENGERS leaving the westbound streamliner "City of San Francisco" which hit a snowdrift and stalled during a severe blizzard in Jan. 1952. Stranded passengers were reached by snow plows after being trapped for three days and nights less than 200 mi. from San Francisco, Calif.

Banking and Finance.—Total assets of the 117 state-licensed savings and loan associations operating in California (as of Dec. 31, 1951) were \$760,706,588. As of March 31, 1952, California had 119 banks, with total assets of \$14,864,975,000, which were members of the federal reserve system.

Estimated total state revenues for 1951-52 were \$1,058,200,960 (1950-51, \$994,042,745), while estimated total expenditures were \$1,103,333,000 (1950-51, \$1,006,339,000). The state's net bonded debt (outstanding Nov. 30, 1951) was \$389,986,609. Per capita income for 1951-52 was estimated at \$1,878, while state tax collections amounted to \$1,007,599,000 (1950-51, \$943,534,000).

Agriculture.—For the sixth successive year California's estimated gross cash farm income for 1951 exceeded \$2,000,000,000, being \$2,724,743,000 (1950, \$2,284,701,000). Returns from livestock and poultry products aggregated \$1,073,933,000 (1950, \$830,908,000), while crop returns yielded \$1,637,320,000 (1950, \$1,440,152,000). Government payments added \$13,490,000 (1950, \$13,641,000) to the state's farm income. Total value of truck crops for 1951 was \$368,267,000, of field crops \$884,688,000 and of fruit and nut crops \$492,335,000.

Manufacturing.—Employment in manufacturing industries rose to a total of 1,038,000 wage and salary workers as of Aug. 1952, thereby exceeding the 1,000,000-mark for the first time since World War II. At the midway point total civilian employment in California was 4,879,000, while unemployment figures indicated 171,000 not working. Preliminary estimates of 1951 retail sales indicated \$13,200,000,000 or an increase of 5% in value over the previous year's volume. Public and private construction figures were estimated at 13% above the 1950 figure, or \$3,370,000,000.

Table I.—Leading Agricultural Products of California

Crop	Indicated 1952	1951	Average, 1941-50
Cotton, bales	1,900,000	1,765,000	627,000
Hay, tons	5,954,000	5,426,000	5,728,000
Potatoes, bu.	38,700,000	34,605,000	36,388,000
Oranges, boxes . . . . .	...	38,500,000	47,640,000
Lemons, boxes . . . . .	...	12,600,000	12,614,000
Barley, bu.	53,892,000	42,360,000	44,236,000
Wheat, bu.	14,630,000	9,741,000	10,990,000
Beans, dry, bags (100 lb.)	4,651,000	5,232,000	4,565,000
Rice, bags (100 lb.)	11,550,000	10,362,000	7,030,000
Sugar beets, tons	2,793,000	2,645,000	2,242,000
Flaxseed, bu.	1,260,000	1,738,000	3,086,000
Peaches, bu.	30,003,000	35,878,000	30,698,000
Pears, bu.	16,001,000	15,001,000	12,468,000
Apples, bu.	8,715,000	7,832,000	7,989,000
Grapes, tons	2,912,000	3,224,000	2,627,100
Apricots, tons	155,000	172,000	203,700
Prunes, tons	135,000	177,000	183,700
Plums, tons	56,000	97,000	79,000
Walnuts, tons	72,000	68,300	63,030
Almonds, tons	35,300	42,700	31,140

Source: U.S. Department of Agriculture.

During the 1951 year an average of 870,400 wage and salary workers were employed in California manufacturing industries. Approximately 341,-

**Table II.—Annual Average Employment in California
Manufacturing Industries**

Industry	No. employed Aug. 1952	Average weekly earnings	Average no. employed 1951
Aircraft and parts	200,200	\$77.65	147,600
Food and kindred products	186,700	67.80	139,900
Machinery (except electrical)	76,300	82.34	65,500
Fabricated metal products (except machinery and transportation equipment)	66,900	77.64	61,100
Lumber and wood products (except furniture)	64,600	86.46	52,300
Electrical machinery	52,800	78.09	34,000
Apparel	50,300	52.86	50,000
Printing and publishing	49,600	95.41	49,000
Primary metals	47,000	82.68	45,900
Stone, glass and clay products	36,300	74.87	36,200
Petroleum products	35,200	77.50	30,100

Table III.—Mineral Production of California

(In short tons, except as noted)

Mineral	Quantity 1950	Value 1950	Quantity 1949	Value 1949
Boron minerals	648,000	\$ 15,890,000	468,000	\$ 11,512,000
Calcium-magnesium chloride . . . . .	...	†	11,000	204,000
Cement (bbl.)	26,685,000	65,259,000	23,202,000	57,464,000
Clays	1,455,000	2,905,000	1,391,000	2,744,000
Coke	513,000	?	347,000	?
Copper	646	269,000	649	256,000
Gold (oz.)	412,000	14,424,000	417,000	14,603,000
Gypsum	962,000	2,463,000	754,000	1,853,000
Iron ore	951,000	†	654,000	†
Iron, pig	667,000	?	494,000	?
Lead	16,000	4,274,000	10,000	3,261,000
Lime	171,000	2,723,000	153,000	2,516,000
Magnesium compounds	?	†	28,000	1,770,000
Mercury (flasks, 76 lb.)	4,000	313,000	4,000	357,000
Natural gas (thousand cu. ft.)	558,398,000	66,449,000	550,903,000	64,731,000
Natural gasoline (bbl.)	21,247,000	65,527,000	20,568,000	67,407,000
Petroleum (bbl.)	327,607,000	707,630,000	332,942,000	752,450,000
Petroleum gases (bbl.)	7,081,000	14,497,000	6,585,000	19,553,000
Pumice and pumicite	157,000	971,000	150,000	800,000
Salt	868,000	3,817,000	965,000	4,110,000
Sand and gravel	41,894,000	35,548,000	36,280,000	30,199,000
Silver (oz.)	1,072,000	970,000	784,000	709,000
Sodium carbonate	?	†	200,000	4,164,000
Stone	11,765,000	13,998,000	11,374,000	12,594,000
Talc	110,000	2,069,000	83,000	1,434,000
Tungsten concentrate . . . . .	...	...	...	...
60% WO ₃	2,000	3,000	1,000	†
Zinc	8,000	2,144,000	7,000	1,788,000
Other minerals . . . . .	...	30,515,000	...	19,133,000
Total		\$1,056,047,000		\$1,075,612,000

*Values for processed materials are not included in the totals.
†Value included with other minerals.

750 were engaged in production of nondurable goods while 528,650 were employed in manufacture of durable goods. (D. C. Cr.)

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in California in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. California ranks first among the states in the production of borates, diatomite, sand and gravel and tungsten; second in cement, petroleum and potash; and third in gold and natural gas. The state stands third in the value of output, with 8.91% of the U.S. total.

Cambodia: see FRENCH UNION; INDOCHINA.

Cameroons: see BRITISH WEST AFRICA; TRUST TERRITORIES.

Cameroon: see FRENCH EQUATORIAL AFRICA; FRENCH UNION.

Camp Fire Girls: see SOCIETIES AND ASSOCIATIONS, U.S.

Canada. A member of the Commonwealth of Nations, Canada is a federal union covering all of North America north of the United States except Alaska. Provinces: Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, British Columbia, Prince Edward Island, Alberta, Saskatchewan, Newfoundland. Outside the provincial boundaries are the Yukon and the Northwest Territories, under federal jurisdiction.

Area: 3,843,144 sq.mi.; capital: Ottawa (*q.v.*); largest English city: Toronto (*q.v.*); largest French city: Montreal (*q.v.*); governor general: Vincent Massey (*q.v.*); prime minister: Louis Stephen St. Laurent (*q.v.*); pop.: (1951 census) 14,009,429, (June 1, 1952) 14,430,000.

History.—As a result of by-elections during 1952, federal parliamentary representation was modified. The new representation was as follows (1949 election results in parentheses): Liberals, 184 (190); Conservatives 49 (41); Co-operative Commonwealth Federation, 13 (13); Social Credit, 10 (10); Independents, 6 (8). In the 1949-52 period, 30 vacancies had occurred in the house of commons and 30 by-elections had been held. The mild Conservative revival indicated by the returns was thought to be public reaction to high taxes and the high cost of living. By the end of 1952, with a federal election discussed for the autumn of 1953, the Liberals hinted at lower taxes, which would automatically reduce living costs.

Legislation.—In a session that lasted from February 28 to



THE DIONNE QUINTUPLETS of Callander, Ont., who reached their 18th birthday and were graduated from high school on May 28, 1952

July 4, parliament put some significant legislation upon the statute books. It authorized establishment of a national library, took more effective power to curtail and prevent restrictive trade practices, extended the unemployment insurance coverage, increased financial assistance to gold miners, increased the amount of money available for loans to farmers and enacted various financial measures.

A major piece of legislation was an amendment to the Canadian constitution, the British North America act, to readjust the membership of the house of commons and to increase it from 262 to 265. Saskatchewan lost three seats, Manitoba two and Nova Scotia one, while British Columbia gained four, Ontario two and Quebec two, because of population shifts. It was the first time in history that Canada's constitution was changed by Canada without consultation and approval of the British parliament. One law passed by parliament in 1952 was an act to authorize the federal government to enter into agreements with the provincial governments pursuant to which, in return for compensation, the provinces would agree to refrain from levying personal income, corporation income and inheritance taxes for five years. The similar 1947 agreement had been signed by seven provinces, Quebec and Ontario refraining; the 1952 agreement was signed by nine provinces, Quebec alone refraining.

External Relations.—During the year Canada signed various agreements with the United States, including a supplementary extradition convention, an arrangement to promote safety on the Great Lakes (see CANALS AND INLAND WATERWAYS) and an agreement to restrict northwest Atlantic haddock fishing. Planning and co-operation between the two countries for the defense of North America continued, including broader exchange of atomic information, joint manning of arctic weather stations and integration of military forces for various training exercises.

Canada was equally active in other international relationships. Parliament ratified the Japanese peace treaty, as well as the North Atlantic Treaty organization protocol extending the guarantees of article 5 to the European Defense Community. Canada's gifts to other nations, besides the military and industrial aid under NATO, included 500,000 lb. of flour to Greece, grants and loans to Ceylon and \$150,000,000 worth of arms to the United Kingdom.

Defense.—The government announced that the nation's defense bill for the year ending March 31, 1953, would total not less than \$1,400,000,000, the highest peacetime military expenditure in Canada's history. A new 600-sq.mi. army camp was started in New Brunswick, planned in size and contour to provide an effective training ground for an armoured division. The Royal Canadian air force created a belt of northern stations equipped to give warning of an approach of enemy aircraft. An expansion of the Canadian navy included the building of 14 antisubmarine vessels with special underwater warfare equipment; all Canadian coastal and deep-sea freighters were scheduled to be equipped with degaussing gear and gun platforms, in order to be prepared against sneak magnetic mine attacks.

Several major military exercises were carried out during the year, including "Sun Dog Three" in Labrador-Ungava, "Eager Beaver" in the Yukon and "Signpost" in Quebec. The defense research board announced experiments with air-to-air guided missiles, new types of antiatomic-radiation clothing, special anti-tank guns and cold-weather military problems. Casualties mounted among the Canadians serving in Korea, and larger numbers of Canadian airmen and soldiers went to Europe for NATO service, but by and large the nation was not too conscious either of the government's defense preparations or of its active participation in war-curbing measures. Civil defense measures were correspondingly half-hearted, but the government planned caches across the country of medical supplies worth \$2,250,000, and

contributed some money to provinces for the stimulation of civil defense steps. (See INDUSTRIAL HEALTH.)

Veterans' Affairs.—Parliament improved the position of war veterans by extending the provisions of the Veterans' Benefits act until mid-1953, by increasing amputees' clothing allowances, by increasing general allowances, by raising the ceiling on permissible income and by assisting employable veterans. By early 1952 the government had, since the end of World War II, paid \$335,964,953 to 714,425 veterans to help them get re-established in civilian life.

Economic Conditions and Controls.—There was evidence of a quickening consumer demand in April 1952, and in May Canadians spent \$1,053,000,000 on consumer goods, a figure that topped the previous all-time high of \$1,005,000,000 in Dec. 1951. Since personal expenditures in Canada were about equal to two-thirds of the value of all goods and services produced by the nation, it was obvious that the 1952 increase in consumer spending had a notably stimulating effect upon employment, over-all production and general business activity. In 1951 consumer spending totalled \$10,400,000,000. Late in Oct. 1952 the government announced a new and more accurate cost-of-living index, which indicated that, using 1949 prices as a base of 100, the index in October was 116.1. The gross national product for 1951 was \$21,241,000,000.

Improved economic conditions during 1952, resulting not only from a greater rate of consumer retail spending but also from the stepped-up defense production activities, led to a relaxation of a number of economic controls, including those on semifabricated copper and aluminum, steel for most types of buildings, chemicals, explosives and pulp and paper materials. After two years of effort, supplies had practically caught up with demand.

Budget and Taxation.—Parliament approved the government's 1952-53 estimates totalling \$4,335,796,800, compared with \$3,370,587,800 for 1951-52. The most significant 1952-53 expenditures (1951-52 in parentheses) were: national defense \$2,001,725,000 (\$1,609,314,371); health and welfare \$727,309,400 (\$474,925,523); veterans' affairs \$228,338,584 (\$213,487,794). For 1952-53 the government expected revenues totalling \$4,514,000,000 (1951-52 actual income, \$4,003,000,000), largely made up of personal income taxes of \$1,260,000,000 and corporation income taxes of \$1,270,000,000 (1951-52: \$980,000,000 and \$1,136,000,000). The 1952-53 customs duties were estimated at \$370,000,000, excise duties at \$240,000,000 and sales tax at \$539,000,000, making a total of \$1,149,000,000, compared with the 1951-52 total of \$1,177,000,000. Taxation for 1952-53 continued high; there was a 6% cut in personal income taxes, but new old-age security taxes cancelled the cut; however, there were excise tax cuts on tobacco, automobiles, appliances and jewellery which would save Canadians \$146,000,000 per year.

Arctic Developments.—The federal government replaced the former Northwest Territories act with a new one that gave greater self-government to the people of the area "so as to make it easier for them to raise their standards of living and add to their well-being and happiness." Territorial courts were re-established, educational facilities were improved, hospitals were aided and roads were planned. During the latter part of July and most of August the federal Pacific naval laboratory at Esquimaux, B.C., sponsored the first official study of the western Arctic ocean when eight oceanographers sailed aboard the "Canolm II," and brought back much scientific data and many samples of arctic water. The Aug. and Sept. 1952 issues of



VINCENT MASSEY, first native-born governor general of Canada, was sworn in at Ottawa, Ont., Feb. 28, 1952. He is seated on the throne from which he opened parliament that evening; to his right is Prime Minister Louis St. Laurent



RECORDERS in the boom town tents of Uranium City, Sask., after the first day of a uranium rush. Prospectors flocked there to register 50-ac. claims when the field was thrown open to the public on Aug. 4, 1952

the federal government monthly, *External Affairs*, published two authoritative articles on the arctic which contained the latest available information about much of the area.

Finance and Banking.—In July 1952 (July 1951 in parentheses) the total of securities held by the Bank of Canada was \$2,160,100,000 (\$2,276,300,000); total current public loans of commercial banks, \$2,928,000,000 (\$2,890,000,000); demand deposits at commercial banks, \$2,885,000,000 (\$2,675,000,000); currency and active bank deposits, \$4,872,000,000 (\$4,750,000,000); cheques cashed at clearing centres, \$10,945,000,000 (\$9,032,000,000) (1951 monthly average, \$9,349,000,000). The net debt of Canada on March 31, 1951, was \$11,433,314,948.

National Accounts.—Net national income at factor cost: salaries, wages and supplementary labour income, (1949) \$7,761,000,000, (1951) \$9,640,000,000; military pay and allowances, (1949) \$115,000,000, (1951) \$201,000,000; investment income, (1949) \$2,445,000,000, (1951) \$3,655,000,000; net income of farm operators, (1949) \$1,504,000,000, (1951) \$2,138,000,000; net income of other unincorporated business, (1949) \$1,369,000,000, (1951) \$1,595,000,000. Gross national expenditure at market prices: personal expenditure on consumer goods and services, (1949) \$10,963,000,000, (1951) \$13,062,000,000; government expenditure on goods and services, (1949) \$2,128,000,000, (1951) \$3,120,000,000; new construction, (1949) \$1,645,000,000, (1951) \$1,993,000,000; new machinery and equipment, (1949) \$1,323,000,000, (1951) \$1,814,000,000; change in inventories, (1949) \$231,000,000, (1951) \$1,650,000,000; exports of goods and services, (1949) \$4,011,000,000, (1951) \$5,099,000,000; less imports of goods and services, (1949) \$3,837,000,000, (1951) \$5,633,000,000; residual error of estimate, (1949) subtract \$2,000,000, (1951) add \$136,000,000.

Trade.—For the first eight months of 1952 exports totalled \$2,839,500,000, imports totalled \$2,596,400,000; during the same period of 1951 exports totalled \$2,495,700,000 and imports \$2,830,500,000.

Agriculture.—Total farm cash income: 1951, \$2,825,520,000; first half of 1951, \$1,251,910,000; first half of 1952, \$1,226,720,000. Quarterly average farm cash income by products—grains, seeds and hay, (1951) \$229,060,000, (second quarter 1952) \$225,410,000; vegetables and other field crops, (1951) \$40,800,000, (second quarter 1952) \$21,220,000;

livestock, (1951) \$257,340,000, (second quarter 1952) \$202,950,000. The official government estimate of the 1952 wheat crop in the west was 651,000,000 bu., an all-time record; in all of Canada the crop was estimated at 675,000,000 bu.

Industry and Manufacturing.—With the 1947 average equalling 100, the July 1952 index of manufacturing inventories and shipments by economic-use groupings (compared with 1951 monthly average in parentheses): consumers' goods—inventories 175.6 (191.4), shipments 159.2 (162.3); capital goods—inventories 188.8 (178.6), shipments 234.8 (198.7); producers' goods—inventories 198.1 (198.7), shipments 173.1 (174.0). Inventories of all industries by components in June 1952 (with 1951 monthly average in parentheses): raw materials, \$1,745,500,000 (\$1,859,800,000); goods in process, \$654,200,000 (\$588,100,000); finished products, \$1,065,600,000 (\$1,015,200,000).

Employment.—Labour force (survey averages): 1950, 5,157,000; May 31, 1952, 5,329,000. Without jobs and seeking work (survey averages): 1950, 169,000; May 31, 1952, 107,000. Labour income: 1951 monthly average, \$803,000,000; May 1952, \$876,000,000. Industrial composite weekly earnings: 1951 monthly average, \$49.61; July 1952, \$53.90. During the first seven months of 1952 there were 143 strikes and lockouts involving 97,324 workers and a time loss of 2,204,363 man-working days, compared with the first seven months of 1951, when there were 165 strikes and lockouts involving 49,126 workers and a time loss of 347,525 man-working days.

Minerals and Natural Resources.—Production of various minerals in July 1952 (with July 1951 in parentheses): copper, 39,400,000 lb. (45,100,000); nickel, 20,700,000 lb. (23,700,000); lead, 22,500,000 lb. (22,100,000); zinc, 68,400,000 lb. (57,600,000); iron ore, 902,900 tons (717,900); gold, 375,000 fine oz. (344,000); silver, 1,771,000 fine oz. (1,794,000); asbestos, 69,400 tons (71,000); gypsum, 67,700 tons (73,500); cement, 1,607,000 bbl. (1,538,000).

See also articles on individual Canadian provinces and territories; also ACCIDENT PREVENTION; AGRICULTURE; CANALS AND INLAND WATERWAYS; CONSUMER CREDIT; EDUCATION; ELECTRICAL INDUSTRIES; ELECTRICAL TRANSPORTATION; FISHERIES; FORESTS; HORSE RACING; HOUSING; INDUSTRIAL HEALTH; LABOUR UNIONS; MUNICIPAL GOVERNMENT; NEWSPAPERS AND MAGAZINES; POST OFFICE; PUBLIC UTILITIES; RIVERS AND HARBOURS; RURAL ELECTRIFICATION; SOCIAL SECURITY; THEATRE; VETERANS' ORGANIZATIONS; WILDLIFE CONSERVATION.

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Canadian Literature. Fiction.—No mountains—indeed, no hills—rose above the modest plain of Canadian literature in 1952. This was an embarrassment for critics who had been anticipating an upsurge of creative effort to match Canada's economic boom; and it was a disappointment for readers who had been expecting increased and improved production from Canada's growing body of literary talent. Nor were the embarrassment and the disappointment assuaged by the appearance of four new novelists, even though they showed more than usual talent. Their talent was so overburdened by faults that in the end the faults hid the talents. The best work of the four was Ernest Buckler's *The Mountain and the Valley*, a nostalgic account of Nova Scotian farm life; next best was Basil Partridge's *The Penningtons*, a saccharine account of Canadian family life during the early years of the 20th century. But in both cases the melancholia and the sweetness were laid on with slightly heavy hands. The deft touch was also lacking in Doris Hedges' *Dumb Spirit*, a fantasy in which a dead man returned to life in the body of a cocker spaniel, and in Charles L'Ami's *The Green Madonna*, an historical novel in which blood and balderdash obscured the tapestry of 15th-century events in England. Established novelists who returned with new works included: Mazo de la Roche, *A Boy in the House*; Isabelle Hughes, *Lorena Telforth*; Ethel Wilson, *The Equations of Love*; Marian Keith, *Lilacs in the Dooryard*; and Arthur Mayse, *The Desperate Search*. All were workmanlike in their separate fields; none was distinguished by strokes of genius.

Poetry and Drama.—Low public interest in poetic and dramatic writing was reflected in the meagre 1952 crop of poetry and printed plays. Veteran E. J. Pratt presented *Towards the Last Spike*, a 1,500-line narrative poem which captured the essence of the drama of building the Canadian Pacific railway back in the 1880s; satiric Earle Birney presented *Trial of a City and Other Poems*, a collection of strong verse through which ran an obvious thread of criticism of man and his works. The rest of the 1952 poetic output was confined to ephemeral chapbooks. Plays appearing in print included Maurice Corbett's *The Woman Called X* and Robertson Davies' *A Masque of Aesop*. Munro MacLennan

published a curious poetic poem in three acts, *Seven Caesars' Ransoms*.

Nonfiction.—There was no clear explanation of why Canadian literature leaned so heavily away from imaginative writing. For one novel or one book of poems that saw print, there were a dozen sober treatises on personages, travel, nature lore, politics, economics and the like. Canadian writers had a remarkable knack of taking themselves seriously. The most significant biography of the year was Donald Creighton's *Sir John A. Macdonald: The Young Politician*, which covered with lively humanity the preconfederation career of Canada's first prime minister. The most significant autobiography of the year was C. L. Burton's *A Sense of Urgency*, the memoirs of a major Canadian merchant which contained many first-time-told tales of Canadian commercial practices. Another personal narrative of interest as well as challenge was Farley Mowat's controversial *People of the Deer*, the Eskimo of the Keewatin district of the arctic. There was a subjective approach, also, in J. Harry Smith's *Newfoundland Holiday*, which was freighted with folklore and history in addition to personal experiences. Other Canadian areas were subjects of books during 1952. Ken E. Liddell's *This Is Alberta* was a racy volume designed to catch the tourist's eye; Jean Burnet's *Next-Year Country* was a serious study of rural social organization. O. M. McConkey wrote of *Conservation in Canada*, and his book was valuable because it was the first comprehensive survey of the matter. *Canada: The Golden Hinge* by Leslie Roberts was the best contemporary account of Canadian development and potentialities yet written. As usual, Canadian writers cast glances backward in 1952: A. R. M. Lower analyzed the background of *Canada: Nation and Neighbor*; Grant MacEwan reported the conquest by agriculture of that part of Canada lying *Between the Red and the Rockies*; D. A. MacGibbon usefully discussed *The Canadian Grain Trade, 1931-51*. Efforts to assess Canadian literature were made by A. L. Phelps in *Canadian Writers* and by Desmond Pacey in *Creative Writing in Canada*, but both appraisals were disappointingly short of being definitive.

Juvenile.—The slump from previous years in the production of juvenile books was discouraging to both parents and educationists. Juvenile novels included Jack Hambleton's *Charter Pilot*, Janet Carruthers' *The Forest Is My Kingdom* and G. E. Tait's *Wake of the West Wind*, all with settings in Canadian forests. Marianne Macdonald used Lake Ontario cruising as a background for her stirring *Black Bass Rock*; June Dennis dipped into the radio world in *A Mike for Marion*; Earl C. Merrick went to Bolivia for the adventures of *Paco of the High Country*; Scott Young used his hockey reporting experiences for *Scrubs on Skates*. The best juvenile nonfiction of the year was Mary Q. Innis' *Changing Canada: New France and the Loyalists*, closely followed by Marie McPhedran's *Cargoes of the Great Lakes*. (C. Cy.)

French.—*Les Enfances de Fanny*, an autobiographical novel by Louis Dantin, threw much light on the tragic life of this well-known poet and essayist, while *L'Ampoule d'or* by Léo-Paul Desrosiers was a lyrical narrative inspired by the quest for happiness in the picturesque Gaspé setting. These were the only two novels by established authors to appear in 1952.

Three young poets showed early promise. They were Fernand Dumont whose *L'Ange du matin* was made of short pieces, barren in style but rich in spiritual experience; Pierre Trottier, a young Romantic who took up the cudgels in *Le Combat contre Tristan*; and Sylvain Garneau, who blended irony and emotion in picturesque narratives in *Les Trouble-fête*.

In the field of history the most important work was *Le Grand marquis* by Guy Frégault, a biography of Vaudreuil; *Réalités françaises de Cartier à Montcalm* by Gustave Lanctôt, dealing mainly with civil administration and militia in New

France; the second volume of *Histoire du Canada français* by Lionel Groulx, a bird's-eye view of the years 1713-63; *Le Régime militaire dans la gouvernement des Trois-Rivières* by Marcel Trudel; and *L'Histoire du Canada par les textes*, a repository of the most significant documents on Canadian history, compiled by Guy Frégault, Michel Brunet and Marcel Trudel.

The only play of distinction published in 1952 was *Brutus* by Paul Toupin, a drama in three acts about the friendship of Brutus and Caesar.

(See also LITERARY PRIZES.)

(G. SR.)

Canals and Inland Waterways. Of the estimated 65,000 mi. of potential inland waterways in the United States, approximately 28,600 mi. had been improved by the end of 1952 for navigation by commercial and pleasure craft. All operations and maintenance of the system, which included 417 commercial ports, 312 locks and 219 navigation dams, is the responsibility of the corps of engineers, department of the army, under the direction of congress.

The principal components of the over-all interrelated system of rivers, lakes, bays and canals include the Great Lakes, the Mississippi river system, the Illinois waterway, the New York state canal system, the Cape Cod canal, the Chesapeake and Delaware canal, the Atlantic intracoastal waterway, the Gulf intracoastal waterway, the Sacramento river system and the Columbia river system.

The Rivers and Harbors act approved July 11, 1952, provided for \$158,435,800 for the construction of 26 projects in 23 states. An additional \$73,458,900 was appropriated for maintenance, operation and care of the nation's vast network of ports and inland waterways; \$405,000 was allotted to advance planning; \$825,000 to examination, survey and other study programs; \$3,664,100 for transfer to other federal and state agencies. A special \$100,000 was allotted for Niagara river investigations in New York state. Also, in addition, the lower Mississippi river and the Sacramento river in California received separate appropriations of \$60,020,000 and \$1,000,000, respectively, for construction, maintenance and operations.

Among the principal projects on which construction was begun or continued during the year were the Dalles lock and dam, McNary lock and dam and Chief Joseph dam on the Columbia river in the interest of navigation, power development, flood control and irrigation; the New York and New Jersey channels; Demopolis lock and dam on the Tombigbee-Warrior system, Alabama; the Gulf intracoastal waterway, Texas; Cleveland harbour, Ohio; the Arkansas river and tributaries, Arkansas and Oklahoma; the lateral canal and lock project at Chain of Rocks on the Mississippi river near St. Louis, Mo.; Morgantown dam and lock no. 2 on the Monongahela river, Pennsylvania; the Missouri river between its mouth and Sioux City, Ia.; Buford dam on the Chattahoochee river, Georgia; Cheatham lock and dam and Old Hickory lock and dam on the Cumberland river, Tennessee; and Jim Woodruff lock and dam, Apalachicola river, Florida.

According to preliminary estimates, the total net water-borne commerce of the United States, eliminating all known duplications of traffic between rivers and ports, was 923,931,053 short tons in the calendar year 1951. Ocean traffic, foreign and coastwise, aggregated 418,617,598 tons.

United States water-borne commerce on the Great Lakes totalled 178,463,212 tons. Inland waterway commerce, excluding the Great Lakes, totalled 213,407,633 tons, including deep-sea traffic on the Mississippi river below Baton Rouge, La. Intraport tonnage totalled 50,952,725; local hauls amounted to 61,243,109 tons; and intraterritory hauls totalled 1,246,776 tons.

(G. HB.)

Canada.—Although Canadian plans for the deepening of the St. Lawrence seaway remained largely in the discussion stage during 1952, some definite steps were taken. The federal government set up a special projects branch within the department of transport to prepare detailed plans and designs for the project, which was expected to give jobs to 9,500 men. The government of Ontario passed a bill at a special autumn session of the legislature to give river residents between Cornwall and Iroquois on the St. Lawrence the choice of compensation or rehabilitation for their properties to be lost by flooding and "to make up for loss of their old environment, traditions and sentimental attachments." The International Joint commission held hearings throughout the year; by September the commission had heard 13 major briefs concerning the project, of which only 3 were against it.

To increase the safety factor of shipping on both Canadian and United States inland waterways, Canada and the United States signed a treaty providing for a uniform system of marine radiotelephony on the Great Lakes and related watercourses. Tonnages taken up and down through the three major lock systems of the St. Lawrence river-Great Lakes system, for the April-Sept. 1952 period, showed a general falling-off when compared with the similar 1951 period (in parentheses): St. Lawrence, 7,264,357 (7,381,271); Welland, 13,136,408 (11,781,008); Sault Ste. Marie (Canadian-U.S.), 74,928,489 (90,273,598); Sault Ste. Marie (Canadian only), 2,387,259 (1,898,862). (See also ELECTRICAL INDUSTRIES.) (C. Cy.)

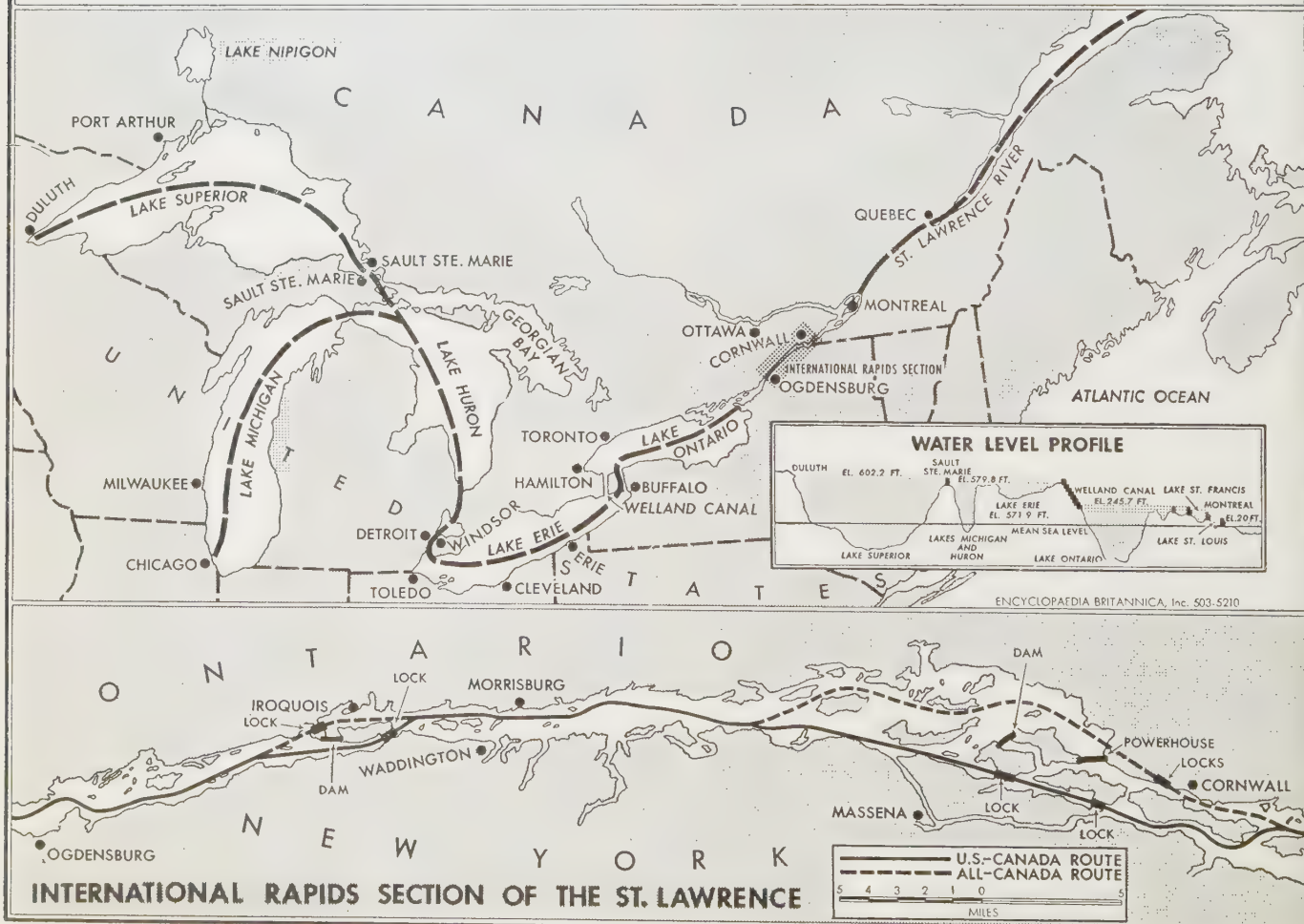
Great Britain.—The fourth annual report of the British Transport commission was published in July 1952. It recorded

that during 1951 the Docks and Inland Waterways executive acquired the Monkland canal, Lanarkshire, the Bridgwater and Taunton canal, the Tone river navigation, Somerset, and the Grand Western canal. Development of the main waterways was advanced, particularly on the Severn river at Worcester and at Newark Town lock on the Trent river. Total traffic carried on the waterways in 1951 was 12,236,000 tons, as against 11,802,000 tons in 1950, consisting of 5,844,000 tons of coal and coke, 2,036,000 tons of liquids in bulk and 4,356,000 tons of general merchandise. The British Transport commission's own fleet represented about one-fifth of the total carrying capacity engaged on the waterways. In 1951 gross receipts from state-owned waterways amounted to £1,761,035 and working expenses to £1,947,487, showing a deficit of £186,452. In carrying operations, gross receipts amounted to £806,934 and working expenses to £895,214, making a deficit of £88,280.

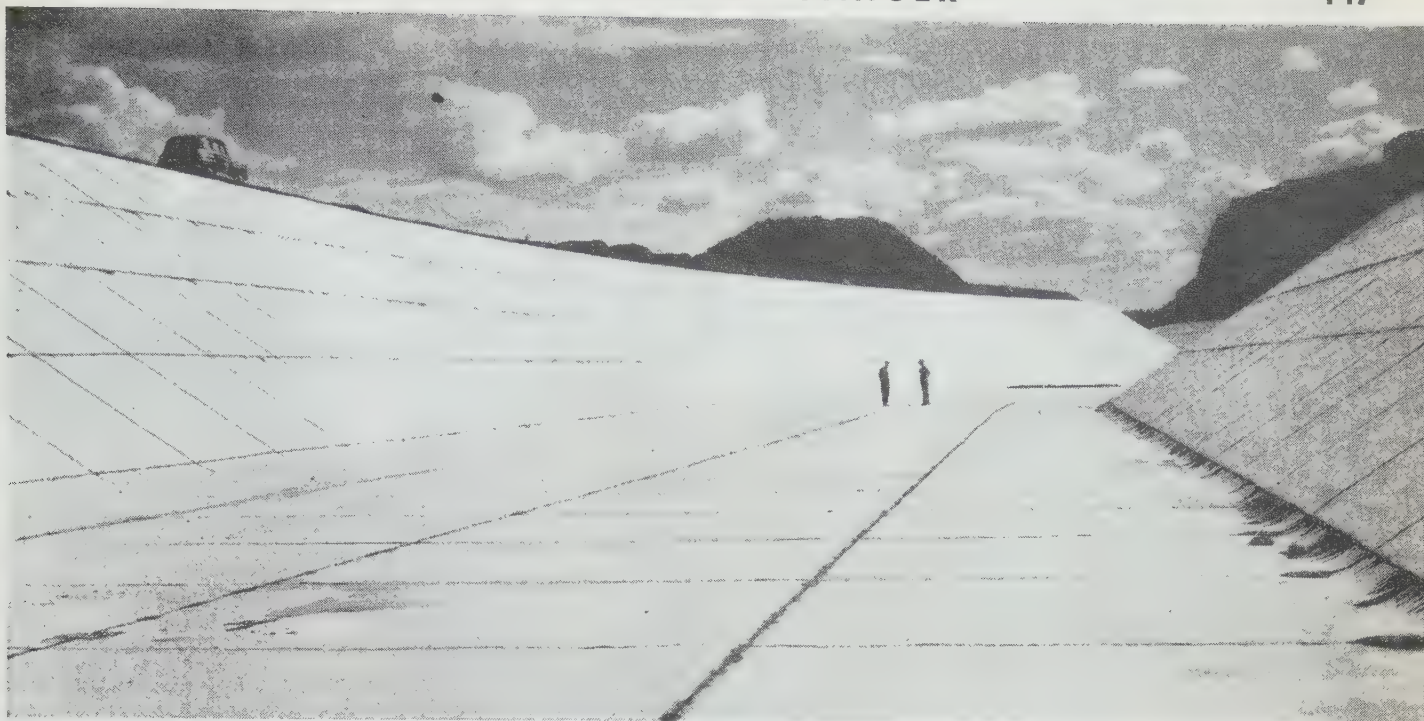
Belgium.—Progress was made with extensive modernization of the network of Belgian waterways and especially those ports connecting industrial districts with the ports of Antwerp, Ghent, Ostend and Zeebrugge. The widening and deepening of the whole length of the canal joining Charleroi with Brussels would make it accessible to vessels up to 1,350 tons. It would then be possible to dispense with the one-kilometre tunnel used by boats at Godarville.

Netherlands.—The great Tiel lock was opened, inaugurating the new Amsterdam-Rhine canal and marking the conclusion of a project first authorized in 1931. Amsterdam thus became the nearest seaport to the Swiss, German and French industrial districts bordering on the Rhine river. The lock at Tiel, more

PROPOSED ST. LAWRENCE SEAWAY



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COLUMBIA BASIN CANAL, part of a chain of canals, reservoirs and laterals carrying water sent by gravity from Franklin D. Roosevelt lake behind Grand Coulee dam to arid farmland in east central Washington. Irrigation water was first turned on in May 1952

than 1,180 ft. long and the largest inland lock in the world, was constructed in monolithic form and founded on piles.

U.S.S.R.—A canal was opened joining the Volga river to the Don river, thereby completing a water transport route from the Baltic to the Black sea. Work had been begun before World War II and was resumed in 1947. More than 60 mi. of canal were cut across the steppes from Stalingrad to Kalach and construction works included 13 sluices, 3 dams and a large number of pumping stations, bridges and wharves. (See also **AQUEDUCTS; FLOODS AND FLOOD CONTROL; IRRIGATION; RIVERS AND HARBOURS.**)

(A. H. J. B.)

Canary Islands: see SPAIN.

Cancer. An estimated 220,000 persons died in the U.S. from cancer during 1952, a moderate and anticipated increase over 1951. Such increase was considered to be largely the result of the increasing life span (there were 44,500,000 living persons 45 years and older), and to a lesser extent of generally more accurate diagnosis. However, a few types of cancer, notably cancer of the lung, appeared to be increasing more rapidly than could be explained solely on these bases. At the same time, reports from numerous sources indicated that more cancer was being cured than ever before.

Nation-wide programs of cancer control, conducted by the American Cancer society and the federal government's National Cancer institute, sought to increase the awareness of the public to the early signs of cancer; to inform practising doctors of new developments in the field; to improve cancer education and training in medical schools and hospitals; to raise the standards of diagnosis and treatment; and to assist needy cancer patients. The same agencies supported broad programs of research into the causes of cancer and better methods of diagnosis and treatment.

The general public contributed \$16,500,000 to the American Cancer Society, Inc., for its combined program of research and control, and an additional \$1,500,000 to the Damon Runyon Cancer Research fund. The federal government's appropriation

for similar purposes was \$19,700,000. The year saw 16 new cancer research buildings (aided by grants from the United States public health service) completed and put into operation, making a total of 42 such facilities constructed since 1948. The number of approved cancer diagnostic clinics decreased by 3 to a total of 116, and approved cancer clinics (for treatment and diagnosis) numbered 497, or 55 more than in the previous year.

More widespread and intensive efforts were made to find cancer in presumably healthy persons, before symptoms appeared. Mass chest X-rays were offered in many communities, and the results of these demonstrated that a patient with lung cancer has a sevenfold greater chance of being cured if treated before symptoms appear than after. The smear method of diagnosis found wider acceptance and its value in detecting cancer of the womb, prostate, bladder, kidney, lung and large intestine was further established. The method was extended to the stomach, by means of a small net-covered balloon swallowed by the patient, inflated, and later withdrawn; cells clinging to the net could be washed off and examined under the microscope, indicating with high accuracy the presence or absence of cancer.

A trend toward more radical surgical operations was noted, especially in cancer of the pelvic organs (uterus, bladder, prostate) and cancer of the breast. In selected cases of breast cancer, the chest wall was opened and deep-lying lymph glands, hitherto regarded as inaccessible, were excised.

Further evidence of the relationship of hormones to cancer was brought forth by C. Huggins and D. M. Bergenstahl, who noted substantial improvement in about half of the patients with advanced cancer of the breast or prostate following removal of the adrenal glands.

Attempts were made to control advanced prostate cancer in two patients by removing the pituitary gland, situated at the base of the brain; both patients improved.

Advances in the irradiation treatment of cancer were highlighted by the installation in several institutions of large bombs of radioactive cobalt, having energy equivalents of X-rays generated at 2,000,000 v., and by the use of radioactive metal wires threaded into tumour areas.

Interest in basic research tended to focus on the chemistry of the nucleus of the cancer cell, whose synthesis of amino acids appeared to differ from that of normal cells, although the sig-



CANCER PATIENT being treated in 1952 with the largest radium unit used in the U.S. to that date. He is shown under a beam from the giant container in a special radiation-proof room at the Roosevelt hospital, New York city, as a nurse attended outside a glass port

nificance of this observation was not clear. The search for chemical compounds having specific destructive effects on cancer cells developed several substances which destroyed cancer in experimental animals without killing the animal hosts, a unique accomplishment. Certain viruses causing noncancerous diseases in man and animals were found to have affinity for some animal cancers which they partially destroyed and efforts were made to train such viruses for attacking cancer in humans. Clinical and research developments of 1950-52 were summarized and discussed at the second National Cancer conference, held in Cincinnati, O., March 3-5, 1952. (See also BIOCHEMISTRY; CHEMOTHERAPY; EAR, NOSE AND THROAT, DISEASES OF; MEDICINE; STOMACH AND INTESTINES, DISEASES OF THE; SURGERY; X-RAY AND RADIOLOGY.)

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Candy. As 1952 drew to a close, estimates indicated that the dollar volume sales of candy in the United States for the year would be approximately \$1,000,000,000, compared with \$965,000,000 in 1951 and the record of \$1,001,000,000 in 1948. The bureau of the census reported that for the first seven months of 1952, 1,365 candy manufacturers, employing 75,000 persons, recorded sales of \$484,854,000, or an increase of 1% over the first seven months of 1951. The heaviest production and sales are recorded in the second half of the year, especially from October to December.

Tonnagewise, the latest available figures toward the end of the year pointed to an estimated volume of 2,700,000,000 lb., a slight increase over the 2,668,800,000 lb. reported for 1951.

The most significant development in the candy industry during 1952 was the move by candy manufacturers to develop and open new outlets for their products. As a result, increased sales of candy were reported by vending-machine operators in indus-

trial plants and institutions, supermarkets gave more space and bigger displays to candy, and drug and variety chains increased their activity in candy merchandising.

Other major developments of the year were: (1) emphasis on the manufacture and marketing of dime bars and other ten-cent candies; (2) greater interest in research on product development; (3) continued stress on the mechanization of candy production; (4) the creating of new merchandising methods of selling candy, especially the designing of a ten-cent rack; (5) increased activity by importers of candy from abroad; and (6) heavier expenditures by candy manufacturers on advertising and promotional efforts.

The greatest gain in the industry was made by manufacturers of popular-priced packages, especially those ranging in the 29- to 59-cent class. Other advances were shown in packages ranging in price from 49 to 99 cents a pound. Packages retailing at from 50 to 59 cents per pound accounted for approximately 10% of the dollar volume, while packages designed to sell for less than 50 cents per pound represented 12% of sales.

Bulk goods amounted to 13% of the dollar volume, while sales of penny goods were insignificant. Bar type candies accounted for 45% to 48% of the industry's tonnage.

Chocolate-coated and chocolate-containing candies continued to lead the field in consumer popularity, despite the fact that cocoa bean prices remained high.

The average price of candy at the wholesale level was 34½ cents per pound, or about the same as reported in 1951. Ten years earlier the average wholesale price for candy per pound was a little more than 16 cents.

As in previous years, the United States continued to be the greatest candy-producing country in the world. Per capita consumption in 1952 was estimated at 17½ lb., a slight decline from the 18 lb. recorded for 1951 and the 18.1 lb. for 1950. The all-time record of 20.5 lb. per capita consumption was established in 1944. The low of 13 lb. per capita was reached in 1932 and 1933.

Imports of candy into the United States showed an increase

over 1951, while exports declined. It was estimated that more than 12,000,000 lb. of candy were imported in 1952, compared with 7,000,000 lb. in 1951.

The United Kingdom, France, the Netherlands, Switzerland, Sweden, Finland and Denmark were the principal candy importing countries in 1951.

(H. D. G.)

Cane Sugar: see SUGAR.

Canning Industry. The United States and territorial pack of canned fruits, fruit juices, fruit and vegetable specialties, vegetables, milk, fish and meat in 1951 totalled approximately 648,000,000 standard cases (final statistics) compared with 588,000,000 cases in 1950, an increase of about 10%. With the exception of canned fish, which showed a substantial decrease, all packs were significantly larger than in 1950. The total pack was the highest on record.

In Table I is shown the production of various canned foods in the United States for the years 1938 to 1951, and in Table II the civilian annual per capita consumption for the same period.

From 1923 to 1952 the prices of canned fruits and vegetables showed a maximum variation of only 78.3 index points compared with 147.5 points for the all food index, and 171.4 points for fresh fruits and vegetables. The high point of canned fruit and vegetable prices was reached in 1947, while the index for all foods was still rising and reaching record highs throughout most of 1952. By the end of the third quarter of 1952 canned fruit and vegetable prices stood at about one and two-thirds the 1935-39 average while the average for all foods was about two and one-third times this pre-World War II average, and for fresh fruits and vegetables two and two-thirds times as high.

In 1952 the extended steel strike threatened serious container shortages in the canned food industry. However, prompt action by the National Production authority in allocating existing supplies to canners of perishable fruits and vegetables averted seri-

ous consequences to the industry. Consumption of steel for food cans in 1951 amounted to about 1,900,000 tons.

The canning industry in the United States comprised in 1952 more than 3,500 canneries in 47 states and the territories. These plants were producing annually all the basic canned foods totaling more than 400 items, utilizing more than 20,000,000,000 cans and jars, and adding up to about \$4,000,000,000 in value at retail.

In the field of fundamental research further progress was made in studies relating to sterilization by means of ionizing radiations. Research was continued in the laboratories of the National Canners association, other industry laboratories and in various universities. The United States Atomic Energy commission expanded its support of work designed to demonstrate the possible use of "gross fission products" which are produced as waste products by the operation of nuclear chain reactors. It was recognized that several years of fundamental research in this field would be necessary before industrial utilization could be made.

(E. J. C.)

Other Countries.—An important event in 1952 was the bringing into operation during September of the first of two electrolytic tinning lines in the largest and most modern tinplate plant in the world, at Trostre, South Wales, with a capacity of about 350,000 tons a year and with provision for expansion. An innovation in Great Britain was the use of cans labelled by printing on the tinplate before fabrication with special inks resistant to steam and high temperatures. Such cans had been available in the United States for several years, but the synthetic materials used in their formulation had not been available elsewhere.

Statistics published during the year by the ministry of food showed that United Kingdom production of canned vegetables decreased from 322,600 long tons in 1950 to 299,800 long tons in 1951, including 119,800 tons of processed dried peas, 94,200 tons of baked beans, 33,500 tons of fresh peas, 20,500 tons of macaroni and spaghetti and 12,900 tons of carrots. Canned fruits fell from 75,100 tons in 1950 to 74,600 tons in 1951, including 36,600 tons of plums, damsons and greengages, 8,400 tons of apples, 6,900 tons of gooseberries, 5,600 tons of cherries, 5,100 tons of strawberries, 4,800 tons of other berries and currants, 3,700 tons of rhubarb and 3,500 tons of other fruits. Other canned foods included 72,000 tons of soups, 7,900 tons of baby foods, 9,600 tons of meats and 72,800 tons of milk. The largest items in production were processed peas and baked beans, which kept the canneries in operation throughout the year, outside the short seasons for fresh fruits and vegetables.

The relative importance of the canning industries of different countries was roughly proportional to their consumption of tinplate. Statistics published by the International Tin Study group showed that, out of the world consumption of nearly 6,000,000 tons, the United States used (in round figures) 4,000,000 tons, the U.K. 500,000 tons, Canada 210,000 tons, Germany 150,000 tons, France 120,000 tons, Australia 110,000 tons, India 100,000 tons, Japan 80,000 tons, Italy 75,000 tons, the Netherlands 75,000 tons and South Africa 60,000 tons.

(G. H. M. F.)

Capehart, Homer Earl (1897—), U.S. senator, was born on June 6 at Algiers, Ind. Not continuing his education beyond high school, he began work as a salesman in Chicago in 1919 after serving two years in the U.S. army. In 1927 he established his own company, the Capehart corporation, manufacturers of phonographs, at Ft. Wayne, Ind. The company was later merged with another and Capehart went on to organize other enterprises. He became interested in politics about 1938 and in 1940 supervised the Elwood, Ind., ceremonies at which Wendell L. Willkie accepted the Republican

Table I.—Production of Various Canned Foods in the U.S.

(In millions of standard cases)

Year	Canned fruits	Canned juices	Canned vegetables	Canned specialties	Canned milk	Canned fish	Canned meat	Total
1938	40	39	122	60	49	17	11	338
1939	52	43	108	67	51	19	14	354
1940	49	55	133	71	58	19	17	402
1941	62	59	163	83	77	23	26	493
1942	59	73	194	46	83	18	48	521
1943	47	79	179	46	73	17	50	491
1944	57	96	175	66	82	18	50	544
1945	52	112	166	84	90	19	50	573
1946	83	109	208	96	74	21	39	630
1947	68	100	200	100	77	22	34	601
1948	66	98	157	93	81	24	24	543
1949	71	91	155	100	66	26	23	532
1950	77	113	147	115	69	30	37	588
1951	83	110	197	120	72	24	42	648

Table II.—Apparent Annual Civilian per Capita Consumption of Various Canned Foods in the U.S.*

(Pounds)

Year	Canned fruits	Canned juices	Canned vegetables	Canned soups	Baby foods†	Canned fish	Canned meat‡
1938	15.3	7.4	28.0	5.4	.3	4.8	2.8
1939	15.9	8.5	29.0	6.3	.6	4.6	3.6
1940	18.8	10.2	31.2	6.8	.7	4.2	4.3
1941	17.8	12.2	33.4	6.9	.7	4.7	5.3
1942	17.6	12.9	35.2	7.3	1.2	2.2	1.5
1943	12.8	11.5	32.6	5.3	1.6	1.9	3.5
1944	9.3	13.2	31.3	6.7	2.1	2.6	3.3
1945	14.3	17.8	36.0	7.5	2.7	2.6	5.0
1946	21.8	22.8	41.4	8.7	2.8	3.8	8.0
1947	18.2	19.4	36.1	7.2§	2.8	3.8	7.2
1948	17.7	21.5	32.3	7.2§	3.5	3.8	7.8
1949	18.2	19.8	33.9	7.8§	3.3	4.1	7.2
1950	20.9	18.6	36.9	8.4§	3.4	4.3	8.5
1951	18.8	19.5	36.8	9.2§	3.5	4.2	8.8
1952||	19.7	18.4	37.0	9.3	3.5	4.2	9.0

*Derived by U.S. department of agriculture from data on production and utilization. From the annual supply of each food (production plus carry-over stocks plus imports) are deducted exports, government purchases, and carry-over stocks. The residual is considered to be civilian consumption. This is divided by estimated population to determine per capita consumption.

†Estimated on the basis of total population, rather than on the population of babies. On the basis of the number of children under the age of 3 years, consumption of baby foods in 1951 amounted to about 60 lb. per child a year.

‡Calculated by statistics division, National Canners association.

§Estimated. ||Preliminary.

nomination for president. Capehart subsequently was elected U.S. senator from Indiana on the Republican ticket for the term 1945-51 and was re-elected for the term 1951-57. An early critic of the New Deal, he opposed the bulk of legislation proposed by Presidents Franklin D. Roosevelt and Harry S. Truman, although he occasionally voted for administration-sponsored measures, such as U.S. participation in the United Nations and military and economic aid to Greece and Turkey. Later, however, he became one of the senate's strongest opponents of President Truman's foreign policy, calling for dismissal of Secretary of State Dean Acheson and scoring the removal of Gen. Douglas MacArthur in 1951. Capehart sponsored the price-control amendment bearing his name, which authorized passing on to consumers all increases in prices occurring during the first year of the Korean war.

Cape Verde Islands: see PORTUGUESE OVERSEAS TERRITORIES.

Carnegie Trusts: see SOCIETIES AND ASSOCIATIONS, U.S.

Carnivals: see SHOWS.

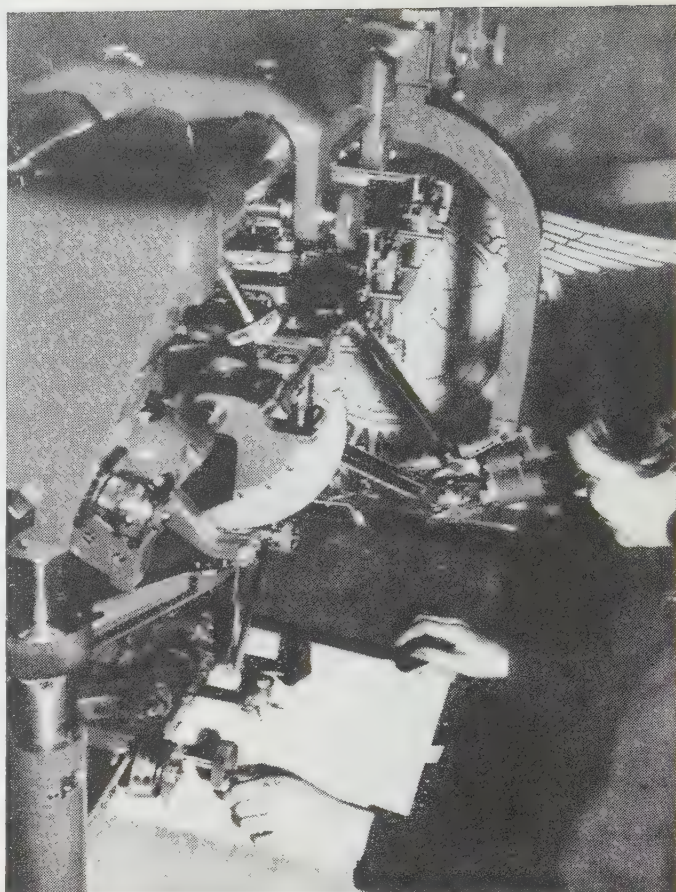
Caroline Islands: see MARSHALL, CAROLINE AND MARIANA ISLANDS; TRUST TERRITORIES.

Cartography. International.—The centre of international cartography in 1952 was the United States, where two major meetings pertaining to mapping were held. The 17th International Geographical congress of the International Geographical union met in Washington, D.C., Aug. 8-15. The congress was held in the United States in connection with the centennial of the American Geographical society. Three sectional meetings were devoted to cartography and the 30 papers presented by representatives of American, European and African nations covered a wide range of topics from mathematical to historical cartography.

The International Map of the World (*Carte du Monde au 1:1,000,000*), which before World War II was an important and progressive international effort, was a major item of discussion at the congress. Various map series and aeronautical charts developed during that war for military purposes had eclipsed the international map and little progress had been made on it since 1946. At the 17th International Geographical congress it was brought out that the military maps or aeronautical series did not satisfy the needs for a detailed map of the world, and steps were taken for the rejuvenation of the International Map of the World at a scale of 1:1,000,000.

In addition to the regular cartographic meetings of the congress there was a convening of the Commission on Bibliography of Ancient Maps. The work of this committee was expected eventually to prove of greatest interest to students of historical cartography. An elaborate display of maps from European, African and American countries was a part of the congress and included a number of new maps and map series.

The Seventh International Congress of Photogrammetry closely followed the Geographical congress. About 1,200 persons from 37 countries in Europe, America and other parts of the world attended the meetings in Washington, D.C., Sept. 4-16. The congress was held in the United States as a part of the Centennial of Engineering. Numerous papers on maps, mapping techniques and allied photogrammetric fields were presented. A display of maps and surveying instruments was a part of the meetings. The display included methods of aerial photo interpretation, mapping techniques and many published maps seldom seen by the public. Included in the last named were the new 2½-, 6- and 25-inch maps and plans of Great Britain; new 1:25,000, 1:50,000 and 1:100,000 maps of Switzerland; and 1:25,000 and 1:50,000 scale maps of Portugal. Similar large-



THE STEREOSIMPLEX, an Italian-made instrument for plotting maps from aerial photographs, first shown in the U.S. in 1952. It permitted use of aerial photographs taken at altitudes of 10,000 ft., compared with 2,500 ft. with U.S. equipment

scale products of the Netherlands, France, Italy and Austria were exhibited. Information concerning the new 1:20,000 scale topographic map of Luxembourg being prepared by the Institut Geographique National (France) was released at the congress. Similar data concerning the basic topographic mapping of Turkey at 1:25,000 scale were presented. Both the Luxembourg and Turkish series were based entirely on aerial photography.

Two other conferences concerning international cartography in the Americas were held in 1952. The Third Pan-American Consultation on Geography held in Washington, D.C., July 25 to August 4 devoted some attention to mapping. The Sixth International Consultation on Cartography was held at Ciudad Trujillo, Dominican Republic, Oct. 11-24.

America.—The centennial year of the American Geographical society of New York city was celebrated in 1952. This institution had long been a recognized leader in the field of American cartography. In its hundred years of existence it had issued a wealth of mapping data as a part of its publications covering the sciences of geography and exploration. However, its greatest cartographic contribution was the preparation of the 1:1,000,000 scale map of Central and South America. This set of 107 sheets, covering all the Americas south of the United States, was begun shortly after World War I and was completed at the end of World War II. It had been accepted as a part of the International Map of the World and represented the acme of pre-World War II cartography in America. During World War II the society contributed considerable information as well as technical aid to the war effort. From 1945 and into its second century the society had given continued emphasis to cartography and by 1952 was well on its way toward producing another notable series of maps, the *Atlas of Disease*. Two additional sheets (no. 4 and 5) of this atlas were issued as supplements to

the *Geographical Review* in 1952. The maps, in colour, were compiled by Jacques May and one covered the world distribution of helminthiasis while the other depicted the distribution of dengue and yellow fever. Each map was accompanied by tables and text that fully explained the cartographic data.

A notable atlas was published in 1952 by Prentice-Hall for the University of Maryland. This atlas, the *Mineral Resources of the World*, was compiled by William van Royen and Oliver Bowles of the university's department of geography in collaboration with Elmer W. Pehrson of the U.S. bureau of mines. It was volume 2 of the *Atlas of World Resources*. The atlas had maps showing the world distribution of 29 mineral commodities. Each map was accompanied by text and tables compiled for the atlas by American authorities. The atlas filled a gap in American cartography and replaced a similar but obsolete 1921 publication of the U.S. geological survey.

The first two sheets of the *Hedin Atlas of Central Asia* were issued by the U.S. army map service in 1952. These maps at a scale of 1:1,000,000 were designed along the lines of the international map and would eventually cover much of Tibet and western China. They were based on original field surveys by the Swedish scientist Sven Hedin and other explorers. A previous start on the atlas was made by the Germans in 1938 but the war caused cancellation of the work after three maps were published.

In the field of cartographic bibliography an important contribution was made by the U.S. national archives. Its preliminary inventory, no. 45, *Cartographic Records of the Federal Housing Administration*, compiled by Charlotte Munchmeyer, contained many data of value to the cartographer interested in urban areas.

The Canadian Board on Geographical Names (formerly the Geographic Board of Canada) published the first volume of a detailed *Gazetteer of Canada*. This volume, covering southwestern Ontario, gave a complete list of place names keyed to the topographic maps of Canada by latitude and longitude.

Europe.—In Germany, private cartography began the production of detailed topographic maps. The first of a series of maps of the antarctic at a scale of 1:1,000,000 to conform to the style of the international map was published in volume 6 (1952) of the geographical periodical *Erdkunde*. The compiler H. P. Kosack was a student of the antarctic and indications were that a series of standard maps at a scale of 1:1,000,000 was planned that would eventually map the entire antarctic. From Germany there were also received two new and important texts on cartography: *Kartentechnik*, by Heinz Bosse, in two volumes, was published as *Ergänzungsheft 243* and *245* of Petermann's *Geographische Mitteilungen*, and Ulrich Graf's *Mathematik für Kartographen* was no. 244 of the same publication.

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Catastrophes: see DISASTERS.

Catholic Church: see ROMAN CATHOLIC CHURCH.

Catholic Community Service, National: see SOCIETIES AND ASSOCIATIONS, U.S.

Catholic Library Association: see SOCIETIES AND ASSOCIATIONS, U.S.

Catholic Organizations for Youth: see SOCIETIES AND ASSOCIATIONS, U.S.

Catholic Rural Life Conference, National: see SOCIETIES AND ASSOCIATIONS, U.S.

Catholic Welfare Conference, National: see SOCIETIES AND ASSOCIATIONS, U.S.

Cattle: see LIVESTOCK.

Cellulose Products: see RAYON AND OTHER SYNTHETIC FIBRES.

Cement. World production of cement had been expanding rapidly since the low of 1945, having nearly trebled output in six years. The production was widely distributed, with more than 70 countries contributing, but of the 145,000,000 short tons reported in 1950 the United States supplied 30%, Germany, the U.S.S.R. and the United Kingdom 8% each, France 5%, Italy 4% and Japan 3%—two-thirds of the total in seven countries.

United States.—The salient features of the cement industry in the United States were reported by the U.S. bureau of mines as follows:

Cement Industry in the U.S.

(Millions of barrels)

	1944	1945	1946	1947	1948	1949	1950	1951
Production	92.2	104.3	166.5	189.5	208.9	212.9	230.3	249.6
Portland cement . . .	90.9	102.8	164.1	186.5	205.4	209.9	226.0	246.1
Other varieties	1.2	1.5	2.5	3.0	3.4	3.2	4.2	3.5
Shipments	95.6	107.8	172.1	190.4	207.7	209.3	232.0	244.7
Portland cement . . .	94.3	106.4	169.6	187.5	204.3	206.2	227.8	241.2
Other varieties	1.3	1.5	2.5	2.9	3.4	3.2	4.2	3.5
Stocks								
Portland cement . . .	20.0	16.4	11.0	10.0	11.2	14.7	13.0	18.0
Clinker	5.3	4.5	3.9	3.6	3.8	4.6	3.9	4.7
Other varieties	0.2	0.2	0.1	0.1	0.2	0.2	0.2	?
Exports	4.0	6.5	5.2	6.8	5.9	4.6	2.4	2.4
Available supply	91.6	101.4	166.9	183.5	202.0	204.9	231.0	246.2

Production and shipments made new record highs in both 1950 and 1951. In the first eight months of 1952 production dropped slightly from the 1951 level, with 158,988,000 bbl., compared with 160,388,000 bbl. in the same period of 1951. On the other hand, shipments ran ahead of 1951, with 164,163,000 bbl., compared with 162,012,000 bbl. With production down and shipments up, stocks declined.

(G. A. Ro.)

Censorship: see LAW.

Census Data, U. S. The census of 1950 was the 17th in a series of decennial censuses which extends back to 1790. A simple count of the people, classified as slave and free, would have been sufficient to comply with the constitutional requirement of a census to serve as a basis for the apportionment of members of congress among the states, but even the first census provided in addition some information about the make-up of the families recorded; and the extent of the additional information collected has increased decade by decade, until in 1940 the published results of the census of population and housing occupied about 45,000 pages, mainly quarto tables set in six-point type.

Some data on housing were collected in the censuses of 1890, 1900, 1910 and 1920, primarily information on home tenure, in some cases including mortgage status of owned homes. The tenure questions were continued in 1930, with the important addition of a new question on value of owned homes and monthly rental of rented homes.

The returns from this question served, incidentally, as an index of family income; in fact, the use of this classification as a general index of potential buying power, etc., may have been more important than its use as an element in the description of housing as such.

The interest in housing data was increasing, however, and in 1940, after extended work on the part of a special committee in formulating an adequate and reasonable set of questions, there was set up a formal census of housing, with its own separate schedule, taken at the same time as the population schedule and for some purposes correlated with the population schedule in tabulation. The reports of this housing census occupied a substantial part (perhaps 40%) of the published reports of the 1940 census; and in 1950, with a census program substantially similar, the name of the administrative subdivision in the

bureau of the census which handled these two features of the decennial census was changed to population and housing division.

Significant figures from the 1950 housing schedule are presented in Tables X, XI and XII.

Landmarks in the development of census methods were the adoption, in 1850, of a schedule requiring the collection of information about each individual in the family in place of a summarized statement for the family, as in prior censuses; the introduction of machine tabulation through the use of punched cards in 1890; and possibly the use of sampling in 1940, in the form of a list of additional questions on the schedule to be asked only of 1 person in 20, which provided material for a series of important supplementary reports.

Population Growth.—The population of the United States in 1790, when the first census was taken, was only 3,929,214, and even a 35.1% increase brought it up to only 5,308,483 in 1800. The rapid increase continued, however, at around 35% per decade up to 1860, when the total amounted to 31,443,321. Then there was a gradual slowing down in the decennial rate of increase, to a minimum of 7.2% in the depression decade, 1930-40, followed by an unexpectedly rapid growth between 1940 and 1950, amounting to 14.5%.

Table I.—Population and Land Area of the United States

Year	Total number	Increase over preceding date	Land area (sq. mi.)	Population per sq. mi.
		Amount	Per cent	
By 50-year periods:				
1800	5,308,483	—	867,980	6.1
1850	23,191,876	17,883,393	2,944,337	7.9
1900	75,994,575	52,802,699	2,974,159	25.6
1950	150,697,361	74,702,786	2,974,726	50.7
By decades:				
1900	75,994,575	—	2,974,159	25.6
1910	91,972,266	15,977,691	2,973,890	30.9
1920	105,710,620	13,738,354	2,973,776	35.5
1930	122,775,046	17,064,426	2,977,128	41.2
1940	131,669,275	8,894,229	2,977,128	44.2
1950	150,697,361	19,028,086	2,974,726	50.7

Taking the growth over the last century and a half in 50-year periods, as presented in Table I, it would appear that the population in 1850 was about 4½ times that of 1800 (increase in the 50 years, 336.9%); in 1900 the population was about 3¼ times that of 1850 (increase 227.7%); but in the final period of this series, from 1900 to 1950, the population did not quite double (increase, 98.3%). Table I presents also the population change decade by decade from 1900 to 1950, together with the population density expressed in terms of number of persons per square mile of territory. This figure increased only from 6.1 in 1800 to 7.9 in 1850, by reason of extensive acquisitions of unsettled territory; then, with little further change in area, to

25.6 in 1900 and 50.7 in 1950.

Current Estimates.—Monthly estimates of the population of the United States have been made since the 1940 census by adding each month the number of births, subtracting the number of deaths (with allowances for underregistration of births and deaths) and then adding the net civilian immigration into continental United States. The annual increase in the estimates for July 1 of each year between 1940 and 1945 ranged from 0.97% (in 1940-41) to 1.38% (in 1942-43) with slightly lower figures for the remaining years in the period.

For the period between 1945 and 1950 the annual increases averaged 1.63%, with a maximum of 1.94% in the year ending July 1, 1947.

The estimates for 1945, 1950, 1951 and 1952 are presented in Table II, with the births, deaths and net immigration on which the estimates are based. The table gives also the three types of estimates which are currently available, namely, total population, including armed forces overseas, civilian population and population residing in continental United States (the census population). The first of these is the most fundamental, reflecting as it does the complete results of the changes listed, but each of the other two estimates has its advantage for some special purpose.

Table II.—Estimated Total Population of the United States, Including Armed Forces Overseas

Item	July 1, 1952	July 1, 1951	July 1, 1950	July 1, 1945
Population	156,981,000	154,360,000	151,677,000	139,934,000
Increase during preceding year:				
Amount	2,621,000	2,683,000	2,528,000	1,538,000
Per cent	1.70	1.77	1.69	1.10
Factors in increase:				
Births*	3,835,000	3,761,000	3,686,000	2,955,000
Deaths*	1,503,000	1,484,000	1,467,000	1,636,000
Excess of births over deaths	2,332,000	2,277,000	2,219,000	1,319,000
Net civilian immigration	289,000	406,000	309,000	219,000
Civilian population	152,661,000†	151,082,000	150,196,000	127,571,000
Population residing in continental U.S.	155,152,000†	153,383,000	151,228,000	132,137,000

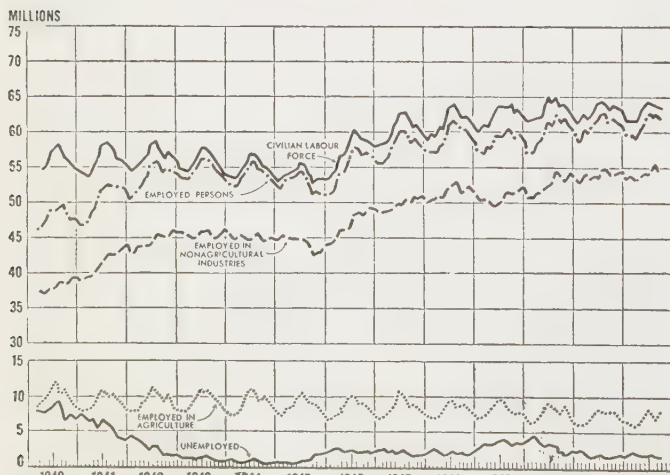
*Adjusted for underregistration.

†Estimate for April 1, 1952.

There is always wide interest in the prospects for the future, especially the near future, but population experts have been so much disturbed by the unexpected recent increase in population (notably the unexpectedly large numbers of births) that, after having insisted for 10 or 15 years that a stable population with no further increase was "just around the corner," they are reluctant to venture further forecasts. An official series does venture figures for dates up to 1960, under the conservative title "projections," which include the following (taking from the series of three sets of figures the one designated "medium"): for 1955, 163,186,000; for 1958, 168,132,000; and for 1960, 171,176,000. All of these projections represent the total population of the country including military overseas.

Births have contributed the major part of the increase in recent years, though net immigration amounted to 406,000 in 1951 and 289,000 in the year ending June 30, 1952.

Colour and Nativity.—In 1900 the foreign-born white population of the United States numbered more than 10,200,000 and formed 13.4% of the total. By 1910, following especially heavy immigration, the number had increased to 13,346,000, or 14.5% of the total, and there were further increases, in spite of the emigration of hundreds of thousands of foreign-born prior to World War I and the later restrictions on immigration, to 13,983,000 in 1930. During the decade 1930-40, however, there was little or no net immigration, and with a heavy mortality among the rapidly aging foreign-born the number had fallen in 1940 to 11,419,000, or 8.7% of the total population; and in 1950



TRENDS in the labour force, 1940 to 1952 (Source: U.S. Bureau of the Census)

Table III.—Population by Colour and Nativity, 1900 to 1950, with Urban and Rural for 1950

	Number	Total	White	Native	Foreign-born	Negro	Other races
1900	75,994,575	66,809,196	56,595,379	10,213,817	8,833,994	351,385	
1910	91,972,266	81,731,957	68,386,412	13,345,545	9,827,763	412,546	
1920	105,710,620	94,820,915	81,108,161	13,712,754	10,463,131	426,574	
1930	122,775,046	110,286,740	96,303,335	13,983,405	11,891,143	597,163	
1940	131,669,275	118,214,870	106,795,732	11,419,138	12,865,518	588,887	
1950	150,697,361	134,941,622	124,780,454	10,161,168	15,042,692	713,047	
Urban	96,467,686	86,756,435	78,267,570	8,488,865	9,392,608	318,643	
Rural-nonfarm	31,181,325	28,469,933	27,350,164	1,119,769	2,491,783	219,609	
Rural-farm	23,048,350	19,715,254	19,162,720	552,534	3,158,301	174,795	
Per cent							
1900	100.0	87.9	74.5	13.4	11.6	0.5	
1910	100.0	88.9	74.4	14.5	10.7	0.4	
1920	100.0	89.7	76.7	13.0	9.9	0.4	
1930	100.0	89.8	78.4	11.4	9.7	0.5	
1940	100.0	89.8	81.1	8.7	9.8	0.4	
1950	100.0	89.5	82.8	6.8	10.0	0.5	
Urban	100.0	90.0	81.3	8.8	9.7	0.3	
Rural-nonfarm	100.0	91.1	87.5	3.6	8.0	0.7	
Rural-farm	100.0	86.7	83.3	2.4	13.7	0.8	

there were only 10,161,000 foreign-born white, forming 6.7% of the otherwise rapidly increasing population.

The Negro population, on the other hand, has formed a relatively stable percentage of the total population over a long period, ranging, in the 50 years ending in 1950, from 11.6 in 1900 to a minimum of 9.7 in 1930 and 10.0 in 1950. The increase from 1930 to 1950 was in part a reflection of the decline in the percentage foreign-born white, since the percentage native white increased during this period only from 78.4% to 82.8%, or 4.4 percentage points, while the foreign-born white decreased 4.7 points.

The census data on colour and nativity are summarized for the period from 1900 to 1950 in Table III, which gives figures also for urban and rural areas in 1950. In general, it may be said that the foreign-born whites were very largely in urban areas (where they formed 8.8% of the total, as compared with 2.4% in rural-farm areas) and that the Negroes, even after the extensive northward migration of the 1940s, were more numerous in rural-farm areas, where they formed 13.7% of the total population compared with 9.7% in urban and 8.0% in rural-nonfarm areas.

Sex Distribution.—In 1900 there were 1,638,321 more males than females in the population of the United States or, on a relative basis, 104.4 males per 100 females. The excess of males increased by more than 1,000,000 between 1900 and 1910, to a maximum of 106 males per 100 females, mainly as a result of the heavy immigration of that decade. By 1930, however, the excess of males had declined to about 1,500,000 and by 1940 to 453,909, there being only 100.7 males per 100 females. In 1950, as result of the lessening immigration (and the fact that such immigration as there was was largely female) and the tendency of women to live longer than men, the situation was reversed, and there were 1,031,883 more females than males in the census population, making a sex ratio of 98.6. About 400,000 of this excess resulted, however, from the fact that the persons in military service overseas, who were omitted from the regular census count which was classified by age and sex, were practically all males. The excess that would be closely comparable with 1940, then, was only about 600,000.

The sex ratio of the urban population in 1950, however, was only 94.6, representing an excess of females amounting to 2,684,122, while there was a substantial excess of males in the rural-nonfarm areas (543,369, or a ratio of 103.6) and especially in the rural-farm areas (1,108,870, or 110.1 per

100 females).

The population data classified by sex are summarized for the censuses from 1900 to 1950 in Table IV, which gives urban-rural data also for 1950.

Age Distribution.—The figures representing the age distribution of the population of the United States in 1950, which are presented in Table V, show clearly the effect of the relatively large numbers of births that had taken place in the years just preceding the cen-

sus. There were 16,163,581 children under 5 years of age, forming 10.7% of the total population, these being the survivors of approximately 17,750,000 births during the last 5 years of the census decade. In 1940, at the close of a period of very low birth rates, children under 5 numbered only 10,541,524 and formed only 8.0% of the total population; and higher quinquennial age groups, running up to 25-29 years, constituted larger percentages of the 1940 total, with a maximum of 9.4% in the group 15-19 years of age.

Table IV.—Population by Sex, 1900 to 1950, with Urban and Rural for 1950

Year	Total	Males	Females	Males per 100 females	Excess of males
1900	75,994,575	38,816,448	37,178,127	104.4	1,638,321
1910	91,972,266	47,332,277	44,639,989	106.0	2,692,288
1920	105,710,620	53,900,431	51,810,189	104.0	2,090,242
1930	122,775,046	62,137,080	60,637,966	102.5	1,499,114
1940	131,669,275	66,061,592	65,607,683	100.7	453,909
1950	150,697,361	74,833,239	75,864,122	98.6	1,031,883*
Urban	96,467,686	46,891,782	49,575,904	94.6	2,684,122*
Rural-nonfarm	31,181,325	15,862,847	15,318,478	103.6	543,369
Rural-farm	23,048,350	12,078,610	10,969,740	110.1	1,108,870

*Excess of females.

In 1950, however, the percentage of population under 5 years of age was decidedly higher than that representing any later group; the 5-9 year group formed a not-too-close second, with 8.8%; and the 25-29 year group (the survivors of the 15-19 year group of 1940) stood in third place with 8.1%. The proportion 65 years old and over of course showed some increase in 1950, in spite of the "pull" in the opposite direction by the young children, and registered 8.1%, compared with 6.9% in 1940.

The percentages of young children in the population were decidedly higher in the rural area than in the urban, especially in the rural-farm areas—except that the percentage of children under 5 years old was higher in the nonfarm rural areas than in the farm areas. The rural-nonfarm areas likewise registered a larger percentage of persons 65 years old and over (8.6) than either the urban (8.1) or the rural-farm (7.6). In most cases up to age 45, however, the rural-nonfarm percentage stood be-

Table V.—Population by Age, Urban and Rural: 1950

	Number				Per cent			
Age	Total	Urban	Rural-nonfarm	Rural-farm	Total	Urban	Rural-nonfarm	Rural-farm
All ages	150,697,361	96,467,686	31,181,325	23,048,350	100.0	100.0	100.0	100.0
0-4 years	16,163,581	9,772,729	3,771,182	2,619,670	10.7	10.1	12.1	11.4
5-9 years	13,199,686	7,534,474	3,103,973	2,561,239	8.8	7.8	10.0	11.1
10-14 years	11,119,266	6,072,440	2,571,868	2,474,958	7.4	6.3	8.2	10.7
15-19 years	10,616,589	6,175,671	2,327,944	2,112,974	7.0	6.4	7.5	9.1
20-24 years	11,481,828	7,713,937	2,355,576	1,412,315	7.6	8.0	7.6	6.1
25-29 years	12,242,260	8,411,772	2,475,106	1,355,382	8.1	8.7	7.9	5.9
30-34 years	11,517,007	7,822,116	2,308,178	1,386,713	7.6	8.1	7.4	6.0
35-39 years	11,246,386	7,563,892	2,182,523	1,499,971	7.5	7.8	7.0	6.5
40-44 years	10,203,973	6,891,449	1,905,278	1,407,246	6.8	7.1	6.1	6.1
45-49 years	9,070,465	6,152,192	1,626,733	1,291,540	6.0	6.4	5.2	5.6
50-54 years	8,272,188	5,636,546	1,440,295	1,195,347	5.5	5.8	4.6	5.2
55-59 years	7,235,120	4,865,541	1,287,763	1,081,816	4.8	5.0	4.1	4.7
60-64 years	6,059,475	4,028,648	1,132,164	898,663	4.0	4.2	3.6	3.9
65 and over	12,269,537	7,826,279	2,692,742	1,750,516	8.1	8.1	8.6	7.6

tween the urban and the rural-farm, but from age 45 to age 64 the rural-nonfarm percentage in specific 5-year age groups was decidedly smaller than even the rural-farm.

School Enrolment.—More than three-fourths (76.1%) of the population 5 to 19 years of age were attending or enrolled in school (not including kindergarten) in 1950, compared with 74.8% in 1940. The 1950 figures are presented, in significant age groups and for urban and rural areas, in Table VI.

Table VI.—School Enrolment for the Population 5 to 19 Years Old, by Age: 1950*

Age	Population	Enrolled in school	Population	Enrolled in school
Total	Total population	Number	Urban	Number
Total, 5 to 19 years old . . .	35,079,350	26,705,970	19,872,975	15,330,920
5 and 6 years . .	5,490,200	2,160,160	3,156,225	1,297,670
7 to 13 years . .	16,801,950	16,077,270	9,363,045	9,002,225
14 and 15 years .	4,267,680	3,963,575	2,332,850	2,211,225
16 and 17 years .	4,175,195	3,104,265	2,334,415	1,839,365
18 and 19 years .	4,344,325	1,400,700	2,686,440	980,435
Rural-nonfarm				
Total, 5 to 19 years old . .	8,044,200	5,999,625	7,162,175	5,375,425
5 and 6 years . .	1,301,890	480,065	1,032,085	382,425
7 to 13 years . .	3,921,845	3,744,725	3,517,060	3,330,320
14 and 15 years .	963,525	887,380	971,305	864,970
16 and 17 years .	924,350	649,040	916,430	615,860
18 and 19 years .	932,590	238,415	725,295	181,850
Rural-farm				
Total, 5 to 19 years old . .	8,044,200	5,999,625	7,162,175	5,375,425
5 and 6 years . .	1,301,890	480,065	1,032,085	382,425
7 to 13 years . .	3,921,845	3,744,725	3,517,060	3,330,320
14 and 15 years .	963,525	887,380	971,305	864,970
16 and 17 years .	924,350	649,040	916,430	615,860
18 and 19 years .	932,590	238,415	725,295	181,850

*Figures based on a 20% sample; enrolment in kindergarten excluded.

The percentages in school in 1950 ranged from 39.3 for children 5 and 6 years old to 95.7 for those 7 to 13 and 92.9 for ages 14 and 15, these groups including the major part of the elementary school enrolment. In the high school range, 74.4% of the boys and girls 16 and 17 years old were in school, and 32.2% of those 18 and 19 years old. The 1940 figures for single years of age indicate roughly the distribution within the marginal groups. The 43.0% of children 5–6 years old attending school in 1940 (including some kindergarten) was made up of 18.0% of the 5-year-olds and 69.1% of the 6-year-olds; all of the single years of age from 7 to 14, inclusive, carried percentages above 92 in 1940; for boys and girls above 14 the percentages were: for age 15, 87.6; for age 16, 76.2; for age 17, 60.9; for age 18, 36.4; and for age 19, 20.9. These percentages indicate more clearly than the broader age groups the gradual tapering off in school attendance with increasing age and the increasing tendency to seek full-time employment or to marry (26.4% of the females 19 years old in 1940 were married, and 17.3% of those 18 years old).

The urban-rural differentials in school attendance (or enrolment) were less marked than in many other classifications—and less marked in 1950 than in earlier census years. Throughout the age range covered by the table, the percentage of school attendance recorded for urban areas was higher than that in rural areas, especially for ages above 15. As between rural-nonfarm and rural-farm the differences were rather small—smaller than in 1940 or 1930.

Educational Attainment.—From 1870 to 1930 the population census schedule carried a question on literacy, defined as ability to read and write, though the emphasis was placed on illiteracy, the lack of this ability. During this period the percentage of the population 10 years old and over classified as illiterate declined from 20.0 to 4.3, with the figure falling below 1.2% for the entire population in several states and below 0.5% for the native white population in those states. A comparable figure for 1940 for the United

States was estimated at 2.9%. Since illiteracy, as then defined, had so nearly disappeared, it seemed wise in 1940 to adopt a new question which would provide some gradation in the degrees of literacy, as measured by the not altogether perfect index provided by the number of years the individual had spent in school. The question on extent of schooling was repeated in 1950, and the returns, for the population classified by colour, are summarized in Table VII.

The simplest figure which can be derived from this material is the median number of years of school completed, that is a (theoretical) number of years which would divide the whole series into two parts, one with more schooling and one with less than the median. This median was 8.4 years in 1940, 9.0 in accordance with a sample survey made in 1947 and 9.3 as computed from the 1950 census returns. The colour classification gives a median of 9.7 for the white population and 6.9 for the nonwhite.

Table VII shows not only the percentages reporting the various specific amounts of schooling, but also a column of cumulative percentages indicating the proportions of the population who had had "at least" the specified number of years in school. Thus the third figure in the total column indicates that 13.5% of the population had had at least one year of college; and the fifth figure indicates that 51.7% had completed at least one year of high school.

Foreign-Born White by Country of Birth.—The foreign-born white population, mainly of European origin, has for 100 years formed a considerable fraction of the population of the United States, increasing from 9.7% of the total in 1850 to a maximum of 14.5% in 1890, which was almost equalled by the 14.3% in 1910. While the absolute number of the foreign-born white increased a little, from 13,345,545 in 1910 to 13,983,405 in 1930, their percentage of the total decreased rather rapidly from the former date, being only 11.4 in 1930, 8.7 in 1940 and 6.7 in 1950. The foreign-born white population has formed at all times more than 98% of the total foreign-born.

Table VIII distributes the foreign-born white population of the United States by country of birth for the years 1910, 1930 and 1950. The nine countries which contributed (each) more than 4% of the total in 1950 were as follows: Italy, 14.0%; Canada, 9.7%; Germany, 9.7%; U.S.S.R., 8.8%; Poland, 8.5%; England and Wales, 5.8%; Republic of Ireland, 5.0%; Mexico, 4.4%; and Austria, 4.0%. These countries together contributed nearly 70% of the total. Canada, with 994,562, or 9.7%, and Mexico, with 450,562, or 4.4%, represented nearly all of the population from non-European countries.

Considerable changes have taken place in the distribution of the foreign-born white population by country of birth, the countries of the so-called older immigration showing smaller percentages in 1950 than in 1910, for example, and the countries

Table VII.—Years of School Completed by Persons 25 Years Old and Over, by Colour: 1950

Years of school completed	Number			Per cent in each group			Cumulative percentage*		
	Total	White	Nonwhite	Total	White	Non-white	Total	White	Non-white
Reporting years of school completed	87,570,565	79,396,825	8,173,740	—	—	—	—	—	—
College:	85,240,900	77,368,015	7,872,885	100.0	100.0	100.0	—	—	—
4 years or more	5,284,535	5,108,290	176,245	6.2	6.6	2.2	6.2	6.6	2.2
1–3 years	6,261,950	6,023,990	237,960	7.3	7.8	3.0	13.5	14.4	5.3
High school:	17,690,855	17,030,370	660,485	20.8	22.0	8.4	34.3	36.4	13.7
4 years	14,856,545	13,791,420	1,065,125	17.4	17.8	13.5	51.7	54.2	27.2
Elementary school:	17,731,375	16,794,340	937,035	20.8	21.7	11.9	72.5	75.9	39.1
8 years	5,985,185	5,226,980	758,205	7.0	6.8	9.6	79.6	82.7	48.7
7 years	7,976,530	6,507,055	1,469,475	9.4	8.4	18.7	88.9	91.1	67.4
5 or 6 years	7,269,570	5,236,490	2,033,080	8.5	6.8	25.8	97.4	97.9	93.2
1–4 years	2,184,355	1,649,080	535,275	2.6	2.1	6.8	—	—	—
None	—	—	—	—	—	—	—	—	—
Median years	9.3	9.7	6.9	—	—	—	—	—	—

*Percentage having completed at least the number of years indicated; thus the number of persons having completed at least eight years of elementary school includes all those who have completed more than this.

of southern and eastern Europe, representing the "new" immigration, showing larger percentages of the total foreign-born white, though not always larger numbers, since the grand total was much smaller in 1950. The percentage from England and Wales, for example, declined from 7.2 in 1910 to 5.8 in 1950; the percentage from Norway and Sweden (combined) from 8.0 in 1910 to 5.2 in 1950; the percentage from Ireland (including Northern Ireland) from 10.1 in 1910 to 5.2 in 1950; and the percentage from Germany from 17.3 in 1910 to 9.7 in 1950 (partly as a result of repatriation of Germans prior to World War I). On the other hand the percentage of Italian-born in the foreign-born white population of the United States increased from 10.1 in 1910 to 14.0 in 1950, and the percentage of Greeks from 0.8 to 1.7.

Table VIII.—Country of Birth of the Foreign-born White

Country	1950	Number 1930	1910	1950	Per cent 1930	1910
All countries . . .	10,161,168	13,983,405	13,345,545	100.0	100.0	100.0
England and Wales . . .	584,615	868,889	958,934	5.8	6.2	7.2
Scotland	244,200	354,323	261,034	2.4	2.5	2.0
Northern Ireland . . .	15,398	178,832	—	0.2	1.3	—
Republic of Ireland . .	504,961	744,810	1,352,155	5.0	5.3	10.1
Norway	202,294	347,852	403,858	2.0	2.5	3.0
Sweden	324,944	595,250	665,183	3.2	4.3	5.0
Denmark	107,897	179,474	181,621	1.1	1.3	1.4
Netherlands	102,133	133,133	120,053	1.0	1.0	0.9
Belgium	52,891	64,194	49,397	0.5	0.5	0.4
Switzerland	71,515	113,010	124,834	0.7	0.8	0.9
France	107,924	135,265	117,236	1.1	1.0	0.9
Germany	984,331	1,608,814	2,311,085	9.7	11.5	17.3
Poland	861,184	1,268,583	937,884	8.5	9.1	7.0
Czechoslovakia	278,268	491,638	—	2.7	3.5	—
Austria	408,785	370,914	845,506	4.0	2.7	6.3
Hungary	268,022	274,450	495,600	2.6	2.0	3.7
Yugoslavia	143,956	211,416	—	1.4	1.5	—
U.S.S.R.	894,844	1,153,624	1,184,382	8.8	8.2	8.9
Lithuania	147,765	193,606	—	1.5	1.4	—
Finland	95,506	142,478	129,669	0.9	1.0	1.1
Rumania	84,952	146,393	65,920	0.8	1.0	0.5
Greece	169,083	174,526	101,264	1.7	1.2	0.8
Italy	1,427,145	1,790,424	1,343,070	14.0	12.8	10.1
Spain	45,565	59,033	21,977	0.4	0.4	0.2
Portugal	54,337	69,993	57,623	0.5	0.5	0.4
Other Europe	86,375	70,499	27,372	0.9	0.5	0.2
Asia*	180,024	159,837	96,535	1.8	1.1	0.7
Canada—French	238,409	370,852	385,083	2.3	2.7	2.9
Canada—other	756,153	931,631	816,063	7.4	6.7	6.1
Mexico	450,562	639,017	219,802	4.4	4.6	1.6
Other America	120,297	69,724	32,238	1.2	0.5	0.2
All other	69,658	70,921	40,167	0.7	0.5	0.3
Not reported	77,175	—	—	0.8	—	—

*Includes European Turkey.

Employment and Unemployment.—Estimates of the number of persons in the civilian labour force, the number unemployed, etc., have been published each month since 1940 on the basis of a sample survey covering about 25,000 representative households. For the purpose of these estimates a person who did any work for pay or profit during the week preceding the inquiry or who had a job from which he was only temporarily absent was counted as employed; and a person who was seeking work, using the term in a rather broad sense, was counted as unemployed. The employed and the unemployed, taken together, constituted the labour force. These figures are summarized for the months of Sept. 1951 and 1952, in Table IX, with the employed classified also by sex and as working in agriculture and in nonagricultural industries.

The civilian labour force increased by more than 500,000, from 63,186,000 in Sept. 1951 to 63,698,000 in Sept. 1952, the increase being only a little more than half the increase in the population 14 years old and over. The number of persons employed increased by 680,000, or 1.1%, while the number unemployed decreased by 168,000, or 10.5%. The number of unemployed in 1952 was only 1,438,000, or 2.3% of the labour force, which is close to an all-time minimum (except for some of the war years), representing largely persons in process of moving from one job to another. The most significant point brought out in the classification by sex and broad industry group was the increase of 942,000, or 5.5%, in female workers in non-agricultural industries, coupled perhaps with a decrease of 284,000 in the number of male workers in these industries, which

latter may be traceable to increases in the military services.

Table IX.—Employment Status of the Civilian Noninstitutional Population of the U.S.*

Employment status	Sept. 7-13, 1952	Sept. 2-8, 1951	Increase or decrease Amount	Per cent
Total 14 years old and over . . .	109,906,000	108,956,000	+950,000	+0.9
In civilian labour force	63,698,000	63,186,000	+512,000	+0.8
Employed	62,260,000	61,580,000	+680,000	+1.1
In agriculture	7,548,000	7,526,000	+22,000	+0.3
In nonagricultural industries . .	54,712,000	54,054,000	+658,000	+1.2
Unemployed	1,438,000	1,606,000	-168,000	-10.5
Not in labour force	46,208,000	45,770,000	+438,000	+1.0
Employed workers, by sex:				
Male	52,040,000	51,780,000	+260,000	+0.5
Female	57,866,000	57,176,000	+690,000	+1.2
In agriculture:				
Male	5,838,000	5,780,000	+58,000	+1.0
Female	1,710,000	1,746,000	-36,000	-2.1
In nonagricultural industries:				
Male	36,766,000	37,050,000	-284,000	-0.8
Female	17,946,000	17,004,000	+942,000	+5.5

*Figures based on a small sample.

The changes in the several elements of the labour force for the entire period from 1940 to Sept. 1952 are presented in graphic form in the chart on page 152.

Vacant Dwelling Units.—Of the 46,012,917 dwelling units returned in the 1950 census, 3,156,932 were vacant, though only 731,282 of these were available for occupancy by families seeking to purchase or rent living quarters for permanent residence. An "available" unit is, by definition, one that is being offered for sale or rent—excluding those in such bad physical condition as to be classified as "dilapidated." Many of the remaining vacant units were seasonal dwellings, not suitable for year-round occupancy and in many cases held by the owners for summer occupancy, these being especially numerous in northern New England and other vacation areas.

The migration of families from farms and small towns into larger cities during recent years left many nonseasonal houses vacant in rural areas and accentuated the demand for housing in the large centres of population, though Table X, which summarizes the vacancy data for metropolitan areas and the remainder of the country, indicates that the percentage of vacant dwellings available for sale or rent was practically the same in these areas and outside.

Table X.—Vacant Dwelling Units Inside and Outside Metropolitan Areas: 1950

Subject	Total		In metropolitan areas		Outside metropolitan areas	
	Number	Per cent	Number	Per cent	Number	Per cent
All dwelling units	46,012,917	100.0	25,635,424	100.0	20,377,493	100.0
Vacant	3,156,932	6.9	1,110,361	4.3	2,046,571	10.0
Available	731,282	1.6	414,103	1.6	317,179	1.6
For rent	516,205	1.1	276,146	1.1	240,059	1.2
For sale only	215,077	0.5	137,957	0.5	77,120	0.4

Home Facilities.—One of the most significant of the tabulations of the housing census is that showing the number of home facilities, toilet, bathing, etc., in the dwelling units which house the population of the United States—especially as the second detailed census of housing, taken in 1950, makes possible comparisons with conditions ten years earlier. Figures are presented in Table XI for selected items from the list of home facilities covered by the questions on the housing census schedule.

In 1950, 30,614,000 homes, or 72.6% of the total, reported flush toilets inside the structure and for the exclusive use of the household, compared with 20,755,000, or 60.3%, in 1940. In addition 1,686,000 families in 1950 and 1,703,000 in 1940 (mainly in urban areas, where multifamily structures are common) reported flush toilets shared with other households. The percentage having flush toilets for exclusive use in urban areas in 1950 was 86.9, compared with 55.6 in rural-nonfarm areas and 28.8 in rural-farm areas.

The number of families having installed bathtub or shower for exclusive use in 1950 was 29,640,000, or 70.6% of the total, compared with 56.9% in 1940. Again the urban area showed a

Table XI.—*Toilet and Other Facilities in Occupied Dwelling Units in the U.S.**

Facility	1950 total Number	Pct.	1950 urban Number	Pct.	1950 rural-nonfarm Number	Pct.	1950 rural-farm Number	Pct.	1940 total Number	Pct.
All occupied dwelling units	42,520,000	—	28,108,000	—	8,518,000	—	5,894,000	—	34,854,532	—
Toilet facilities										
Number reporting	42,169,000	100.0	27,882,000	100.0	8,448,000	100.0	5,838,000	100.0	34,391,126	100.0
Flush toilet inside structure, exclusive use	30,614,000	72.6	24,241,000	86.9	4,693,000	55.6	1,680,000	28.8	20,755,043	60.3
Flush toilet inside, shared	1,686,000	4.0	1,521,000	5.5	142,000	1.7	23,000	0.4	1,703,051	5.0
Other toilet facilities (including privy)	9,177,000	21.8	1,403,000	7.0	3,370,000	39.9	3,858,000	66.1	11,065,683	32.2
No toilet facilities	692,000	1.6	171,000	0.6	243,000	2.9	277,000	4.7	867,349	2.5
Bathing facilities										
Number reporting	42,007,000	100.0	27,793,000	100.0	8,402,000	100.0	5,812,000	100.0	34,288,827	100.0
Installed bathtub or shower, exclusive use	29,640,000	70.6	23,275,000	83.7	4,590,000	54.6	1,776,000	30.6	19,494,859	56.9
Installed bathtub or shower, shared	1,557,000	3.7	1,403,000	5.0	135,000	1.6	19,000	0.3	1,618,233	4.7
No bathtub or shower	10,810,000	25.7	3,115,000	11.2	2,678,000	43.8	4,017,000	69.1	13,175,735	38.4
Refrigeration equipment										
Number reporting	41,903,000	100.0	27,725,000	100.0	8,393,000	100.0	5,785,000	100.0	34,205,414	100.0
Mechanical	33,521,000	80.0	23,983,000	86.5	6,015,000	71.7	3,524,000	60.9	15,093,346	44.1
Ice	4,495,000	10.7	2,536,000	9.1	1,097,000	13.1	862,000	14.9	9,253,063	27.1
Other	234,000	0.6	67,000	0.2	31,000	0.4	136,000	2.4	494,421	1.4
None	3,653,000	8.7	1,139,000	4.1	1,250,000	14.9	1,263,000	21.8	9,364,584	27.4
Radio										
Number reporting	41,932,000	100.0	27,810,000	100.0	8,362,000	100.0	5,761,000	100.0	33,890,506	100.0
With radio	40,093,000	95.6	26,941,000	96.9	7,790,000	93.2	5,362,000	93.1	28,048,219	82.8
No radio	1,839,000	4.4	868,000	3.1	572,000	6.8	399,000	6.9	5,842,287	17.2
Television										
Number reporting	41,704,000	100.0	27,644,000	100.0	8,382,000	100.0	5,717,000	100.0	—	—
With television	5,120,000	12.3	4,376,000	15.8	571,000	6.8	174,000	3.0	—	—
No television	36,584,000	87.7	23,268,000	84.2	7,772,000	93.2	5,543,000	97.0	—	—
All dwelling units	45,875,000	—	29,256,000	—	10,134,000	—	6,485,000	—	37,325,470	—
Electric lighting										
Number reporting	44,942,000	100.0	28,763,000	100.0	9,824,000	100.0	6,355,000	100.0	36,746,761	100.0
With electric lighting	42,264,000	94.0	28,445,000	98.9	8,883,000	90.4	4,936,000	77.7	28,915,486	78.7
No electric lighting	2,678,000	6.0	319,000	1.1	941,000	9.6	1,418,000	22.3	7,831,275	21.3

*Figures based on a sample tabulation.

considerably higher percentage, namely, 83.7, with 54.6% for the rural-nonfarm area and 30.6% for the rural-farm. And likewise there were considerable numbers of installations, especially in urban places, which were shared by two or more households.

The percentage of families (occupied dwelling units) which reported mechanical refrigeration increased from 44.1 in 1940 to 80.0 in 1950, with an urban-rural differential somewhat less marked than that noted with respect to flush toilet and bathtub, the percentages being 86.5 for urban, 71.7 for rural-nonfarm and 60.9 for rural-farm. Ice refrigerators, the only other item of importance on this list, were most common in the farm areas, where they were reported by 14.9% of the families, and least important in urban areas, though even there they were reported by 9.1% of the families.

Radio distribution had reached the point, even in 1940, where 82.8% of the families had a radio set. This figure was increased to 95.6% in 1950, leaving only 4.4% of the families without a radio.

Television, on the other hand, came onto the market in quantity after 1940, so that the figure of 5,120,000 families (12.3% of the total) with television may be considered to measure the growth during the decade. The urban-rural distribution of the total percentage was as follows: urban, 15.8; rural-nonfarm, 6.8; and rural-farm, 3.0.

Electric lighting is perhaps the most significant of all the "facilities" listed in the census, especially since the current supplied for lighting is practically always available also for the operation of various items of household and farm equipment. The reports on electric lighting were tabulated for all dwelling units, including those vacant, rather than for occupied units alone. The numbers shown in Table XI are therefore a little too large to represent actual families or households having electric current available, but the percentages may be compared roughly with those shown for the other facilities. The percentage of all dwelling units having electric lighting increased from 78.7 in 1940 (already higher than the percentage for any other listed facility except radio) to 94.0 in 1950, again with relatively favourable showing for the rural-farm areas, which reported 77.7% with electricity, compared with 98.9% for urban areas.

Dwelling Units by Monthly Rental.—In Table XII the renter-occupied dwelling units in urban and rural-farm areas of the United States are classified according to monthly rent paid in 1950 and 1940. (Farm dwelling units are excluded from this table by reason of difficulty in separating either value or rental value of farm homes from the remainder of the farm property.) The median rental of nonfarm homes increased from \$21 in 1940 to \$35 in 1950, or by more than 66%, which is not far different from the increase in the cost of living—though one would have expected, as a result of the widespread rent control, that increase in rents would have fallen far short of the general increase.

Table XII.—*Monthly Rent of Urban and Rural-Nonfarm Renter-Occupied Dwelling Units in the United States*

	1950		1940	
Contract monthly rent	Number	Per cent	Number	Per cent
All renter-occupied dwelling units	17,098,000	—	16,334,937	—
Number reporting*	15,422,000	100.0	16,177,770	100.0
Under \$10	680,000	4.4	2,822,402	17.4
\$10 to \$14	580,000	3.8	2,279,797	14.1
\$15 to \$19	1,598,000	10.4	2,217,466	13.7
\$20 to \$29	3,070,000	19.9	3,852,730	23.8
\$30 to \$39	3,090,000	20.0	2,526,102	15.6
\$40 to \$49	2,540,000	16.5	1,300,080	8.0
\$50 to \$59	1,611,000	10.4	570,410	3.5
\$60 to \$74	1,122,000	7.3	326,662	2.0
\$75 to \$99	787,000	5.1	164,301	1.0
\$100 or more	343,000	2.2	117,820	0.7
Average rent	\$39	—	\$24	—
Median rent	\$35	—	\$21	—

*Excludes units occupied rent-free.

The figures for some of the specific rental classes are more significant, perhaps, than the median. Dwelling units renting for less than \$10 per month, for example, formed 17.4% of the total in 1940 but only 4.4% in 1950, while those with rent from \$10 to \$14 declined from 14.1% in 1940 to 3.8% in 1950. Conversely, units with rent between \$40 and \$49 formed 16.5% of the total in 1950, compared with 8.0% in 1940; and those with rent between \$50 and \$59 formed 10.4% in 1950 as against 3.5% in 1940.

There were corresponding increases in the reported value of owner-occupied homes (following a notable decrease between 1930 and 1940), but the 1950 tabulations are limited to single-family houses, whereas the earlier tables include estimated value of the owner-occupied part of larger structures, so that close comparison is not possible. (See also ALIENS; BIRTH

STATISTICS; EMPLOYMENT; HOUSING; MARRIAGE AND DIVORCE;
WAGES AND HOURS; WEALTH AND INCOME, DISTRIBUTION OF.)

(L. E. T.)

Centennials: see CALENDAR, 1953, page xxii.

Ceramic Products. The volume of manufacturing in the ceramic field continued on a high plane throughout 1952, despite some curtailment of production in the pottery and dinnerware fields. Peak markets were again the experience of the structural clay products, sanitary ware, structural glass, window glass, refractories and enamelled kitchenware and structural porcelain panels.

Shortages of strategic minerals continued to plague the industry. Copper and cobalt were virtually unobtainable. Substitutes were developed for them, but by the latter part of 1952 some manufacturers were beginning to obtain limited quantities of these metals.

New Developments, 1951-52.—A high-voltage bushing was developed for use at radio frequency. This bushing was designed to operate at 300,000 v. and 18 to 25 kc. Its over-all length was about 26 ft. and its weight was more than 6,000 lb. In order to keep capacitance and electrical losses at a low value, conventional type construction could not be used. Instead, the bushings were filled with gas under pressure.

Glass container production continued on a high plane. Flat glass stayed at a high volume, because of continued heavy building construction. (See also GLASS.)

The dinnerware and pottery industry was facing increased competition from foreign producers in addition to some competition from the plastics industry. Some manufacturers were concentrating on innovations in design and multiple unit replacement sets. One of the world's largest producers of dinnerware announced an addition to its industrial capacity.

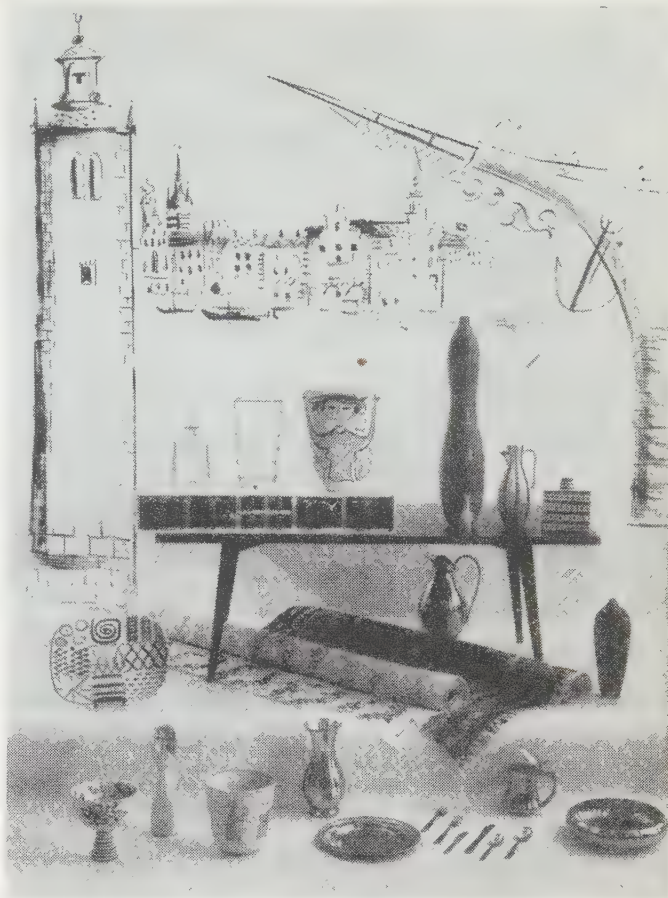
There was continued heavy demand for refractory raw materials, and action was being taken to improve quality and alleviate shortages. The heavy media process had been applied to Austrian magnesite and Philippine chrome ore. The cyanite supply, especially that from India, was becoming shorter and prices were increasing. This stimulated the use of synthetic products. Depletion of diaspore deposits in Missouri was continuing at a rapid rate. Steps were taken to increase the supply of calcined South American bauxite for high alumina refractories. New sources of raw material were investigated and proven for silica brick. Higher quality refractories were in demand by the principal consumers in order to insure uninterrupted services of furnaces. A number of different refractories were used so that uniform life could be secured in all parts of the furnace, which also guarded against shutdowns and lower production rates. There was an increase in the use of castable and plastic refractories.

The magnesite industry set a record by producing more than 400,000 tons of dead-burned magnesite. The treatment of crude magnesite by flotation prior to dead-burning was resumed by Basic Refractories, who put a heavy media plant into service in order to separate brucite from gangue. In the synthetic field, there were no major changes. All producers improved the control of impurities in their products.

The Structural Clay Products institute announced a new brick, SCR Brick, which was said to possess design advantages making it competitive with frame construction.

The Porcelain Enamel institute was actively developing its curtain wall project. The use of colours in these wall panels promised to give them a favourable competitive position with glass and tile.

Enamelling on aluminum was rapidly assuming manufacturing importance in the porcelain enamel field. Extensive in-



SWEDISH CERAMICS (on table) and Dutch pewter ware (beneath table), popular with U.S. tourists in Europe in 1952. Ceramics shown include a Gustavsberg bowl (centre), Orrefors glass bottle and vase (left)

stallations where porcelain enamel formerly could not be used now became open because of the lighter weight advantage.

The lightweight aggregates, including expanded clay and shale aggregates, cinders, perlite, pumice, slag and vermiculite, continued to increase in importance and to expand into new uses and markets. Studies of the clays and shales of various geographic areas indicated additional sources of raw materials for making lightweight aggregates, and a considerable enlargement occurred in the body of technical information relating to the properties of clays and shales which cause bloating and to the technology of expanding them by more or less conventional procedure. Departing from the latter was a plant at Salisbury, N.C., which produced lightweight aggregate from clay, using the Dwight-Lloyd sintering process. The waste slimes from the washing of land pebble phosphate were suggested as a raw material for making lightweight aggregate by firing. (C. S. Pe.)

Cereals: see BARLEY; CORN; OATS; RICE; RYE; WHEAT.

Ceylon. A self-governing member of the Commonwealth of Nations, Ceylon lies southeast of the most southerly point of India. Area: 25,332 sq.mi. Pop.: (1946 census) 6,657,339; (mid-1951 est.) 7,743,000. Language: mainly Sinhalese (69%) and Tamil (21%). Religion: Buddhist (61%), Hindu (22%), Moslem (9%) and Christian, mainly Roman Catholic (7%). Chief towns (pop., 1946 census): Colombo (cap., 362,000); Jaffna (63,000); Dehiwala-Mt. Lavinia (56,900); Kandy (51,200); Moratuwa (50,700). Governor general: Lord Soulbury; prime ministers (1952): Don Stephen Senanayake and (from March 26) Dudley Senanayake (q.v.).

History.—The death, following a riding accident, of Don Stephen Senanayake, independent Ceylon's first prime minister, occurred on March 22, 1952, and plunged the whole country into mourning. Three-quarters of a million people filed past the bier, and vast crowds attended the cremation in the centre of Colombo. After several days of uncertainty the premier's son, Dudley Senanayake, minister of agriculture in his father's government, was appointed prime minister. Parliament was dissolved in April and a general election was held in the following month. The omission from the voters' registers of large numbers of Indians, who had applied for Ceylonese citizenship but had not so far been accepted, drew a protest from the government of India; this was rejected and the controversy continued to smoulder throughout the year. The elections resulted in a decisive victory for the prime minister's United National party and in the weakening of Communist influence. A new government took office on June 2.

The International bank report, published in September, contained sharp criticism of government policy on the new state industries. Meanwhile Ceylon's financial position had worsened because of a contraction of revenue, and the severe pruning of voted expenditure was ordered. An adverse trade balance amounted to Rs. 67,000,000 for the first half of the year, compared with a favourable balance of Rs. 248,000,000 for the same period in 1951. To conserve dollars Ceylon imposed restrictions on certain classes of imports from the nonsterling area in September, two months before the prime minister went to London for the Commonwealth Economic conference.

The food situation caused acute anxiety during 1952. Because of Ceylon's inability to buy enough rice in Burma and Siam, the food minister, Sir Oliver Goonetilleke, was forced to ask help from the United Kingdom government in obtaining supplies from other sources. Following a visit to Washington, D.C., the food minister bought 40,000 tons of rice from the United States and the rice situation was thus made secure until early 1953. Great efforts were also made to increase domestic rice production.

Illicit immigration into Ceylon from India was an important police problem and the army was called in to assist in making arrests. In September a trade delegation led by R. G. Senanayake, minister of commerce, visited Peking to further Ceylon's policy, strongly criticized in the west, of trading with China. Imports from Japan increased substantially during the year. In February an Indo-Ceylonese trade agreement covering the year 1952 was signed in Colombo.

In March an event of great religious significance to Buddhists took place at Kandy: in the Temple of the Tooth, before a company that included 100 Burmese on a special pilgrimage from Rangoon, the sacred tooth relic was exposed. (Jo. Hn.)

Education.—Schools (1949): Sinhalese and Tamil government and assisted 5,610, pupils 1,010,184; central and English 631, pupils 237,678. Technical college (1949–50), students 1,969. Teacher's training colleges (1949) 20, students, primary 1,653, secondary 222, post graduate 68. University (1949–50), students 1,850.

Finance and Banking.—Budget: (1951–52 est.) revenue Rs. 896,000,000, expenditure Rs. 886,000,000; (1952–53 est.) revenue Rs. 904,000,000, expenditure Rs. 939,000,000. Gross national debt (Sept. 1950) Rs. 561,400,000. Currency circulation (Aug. 1952): Rs. 362,000,000. Bank deposits (July 1952) Rs. 554,000,000. *Monetary unit: rupee, with an exchange rate of Rs. 13.33 to the pound and Rs. 4.775 to the U.S. dollar.

Foreign Trade.—(1951) Imports Rs. 1,559,000,000, exports Rs. 1,904,000,000. Main sources of imports (1951): U.K. 22%; Burma 15%; India 12%; Australia 8%. Main destinations of domestic exports: U.K. 32%; U.S. 11%; Australia 7%; Canada 4%. Main imports: rice, cotton piece goods and sugar. Main exports: tea, rubber and coconut oil.

Transport and Communications.—Roads (1949): 6,535 mi. Licensed motor vehicles (Dec. 1950): cars 32,500; commercial 14,800. Railways (1949) 896 mi.; passengers (1949) 26,700,000; freight goods (1949–50) 1,350,000 metric tons. Air transport (1950): passenger-miles 6,152,000; cargo, ton-miles 73,000. Telephones (1951): 16,860. Radio receiving set licences (1950): 28,000.

Agriculture.—Main crops (metric tons): tea (1950) 138,900; rice, paddy (1951) 315,000; cassava (1950) 185,000; sweet potatoes and

yams (1950) 59,000; millet (1948) 10,000. Copra exports (1951) 36,900 metric tons. Livestock (Sept. 1951): cattle 1,072,000; sheep 51,000; pigs (1950) 104,000; buffaloes (1948) 658,000; goats (1950) 370,000. Coconut oil exports (1951) 111,500 metric tons.

Industry.—Fuel and power: manufactured gas (1951) 9,260,000 cu.m.; electricity (1951) 106,600,000 kw.hr. Raw materials (metric tons): rubber (1951) 108,000; graphite (exports, 1949) 12,434; salt (1949) 28,775.

Chad: see FRENCH EQUATORIAL AFRICA.

Chambers of Commerce: see SOCIETIES AND ASSOCIATIONS, U.S.

Chamoun, Camille: see SHAMUN (CHAMOUN), CAMILLE.

Channel Islands: see COMMONWEALTH OF NATIONS; GREAT BRITAIN & NORTHERN IRELAND, UNITED KINGDOM OF.

Chapman, Oscar Littleton (1896–), U.S. secretary of the interior, was born on Oct. 22 in Omega, Va., and graduated from Randolph-Macon academy in Bedford, Va. He served in the navy in World War I and studied at the University of Denver, Colo., the University of New Mexico, Albuquerque, and at Westminster law school in Denver, where he received a law degree in 1929. He was chairman of the Colorado Child Welfare committee and later president of the Colorado state board of control. In May 1933 he was appointed assistant secretary of the interior. He was a member of President Franklin D. Roosevelt's so-called "little cabinet," and for a dozen years supervised at one time or another virtually all the interior department activities. In Dec. 1949 he became secretary of the interior. In Feb. 1951 he announced the resignation of the director of the national park service, Newton B. Drury, who had four years until retirement. Drury said Chapman forced him out; he had opposed Chapman's plan to build hydroelectric and irrigation dams in Dinosaur National monument in Utah and Colorado.

Chapman, a long-time friend of Adlai E. Stevenson, was reported to have sought the vice-presidential nomination during the Democratic convention in July 1952, but Stevenson chose Sen. John Sparkman (*q.v.*) as his running mate.

Charge Account: see CONSUMER CREDIT.

Charles Hayden Foundation: see SOCIETIES AND ASSOCIATIONS, U.S.

Cheese: see DAIRY PRODUCTS.

Chemistry. **Bond Lengths.**—It had long been known that the carbon-carbon distance in ethane is 1.55 angstrom units and in ethylene 1.32 Å. Just as benzene had been shown to be a true hexagon with bond lengths of 1.39 Å, so it had been assumed that naphthalene and anthracene would be composed of true hexagons. J. M. Robertson (England), however, demonstrated that significant deviations exist. He made very accurate measurements of C—C distances in these two hydrocarbons from electron density maps and triple Fourier analyses, with these findings. For naphthalene the bond distance of C₁—C₂ (also C₂—C₃ and C_{4a}—C_{8a}) is 1.395 Å; C₁—C_{8a}, 1.420 Å; C₇—C₈, 1.363 Å. It is particularly significant to compare C₁—C₂ with C₇—C₈ since these are equivalent positions in the two fused hexagons. For anthracene he found these values: C₁—C₂, 1.368 Å; C₇—C₈, 1.359 Å; C₈—C_{8a}, 1.424 Å; C_{8a}—C₉, 1.383 Å; C₉—C_{9a}, 1.393 Å; C_{9a}—C₁, 1.414 Å; C₆—C₇, 1.389 Å; C_{8a}—C_{10a}, 1.439 Å.

Ion Exchange Separation of Rare Metals.—F. H. Spedding, E. I. Fulmer and co-workers (Iowa State college, Ames, Ia.) developed an efficient scheme for separation of some of the difficultly separable rare earths, namely, by use of the high-capacity resin Nalcite HCR and 0.1% citrate solutions. Gram quantities of the elements holmium, erbium and dysprosium were obtained in this way.

The ion exchange resin Dowex-50 was used by L. B. Werner

and I. Perlman (University of California, Berkeley, Calif.) for the similar separation of americium from curium in the first isolation of curium. The latter metal was obtained in microgram quantity by neutron irradiation of americium. W. E. Brown and William Rieman III (Rutgers university, New Brunswick, N.J.) also reported the use of ion-exchange methods for the separation of titanium, zirconium and thorium.

Metal Hydrides.—H. I. Schlesinger and collaborators at The University of Chicago prepared hydrides of zinc and cadmium by interaction of dialkylzinc or dialkylcadmium with lithium aluminum hydride, LiAlH_4 , in ether. Zinc hydride, ZnH_2 , was found to be a white, nonvolatile solid. It turned gray in a day or two, presumably because of slight dissociation into the elements. Freshly prepared material did not react with air and reacted only slowly with water. It absorbed diborane to yield zinc borohydride, $\text{Zn}(\text{BH}_4)_2$.

Cadmium hydride was unstable, but at -78°C . it could be maintained. On warming to 2°C . it suddenly decomposed. Attempts to prepare beryllium and magnesium hydrides in this way were partly successful. The compounds were formed but the investigators were unable to remove all the ether (solvent) from the preparations.

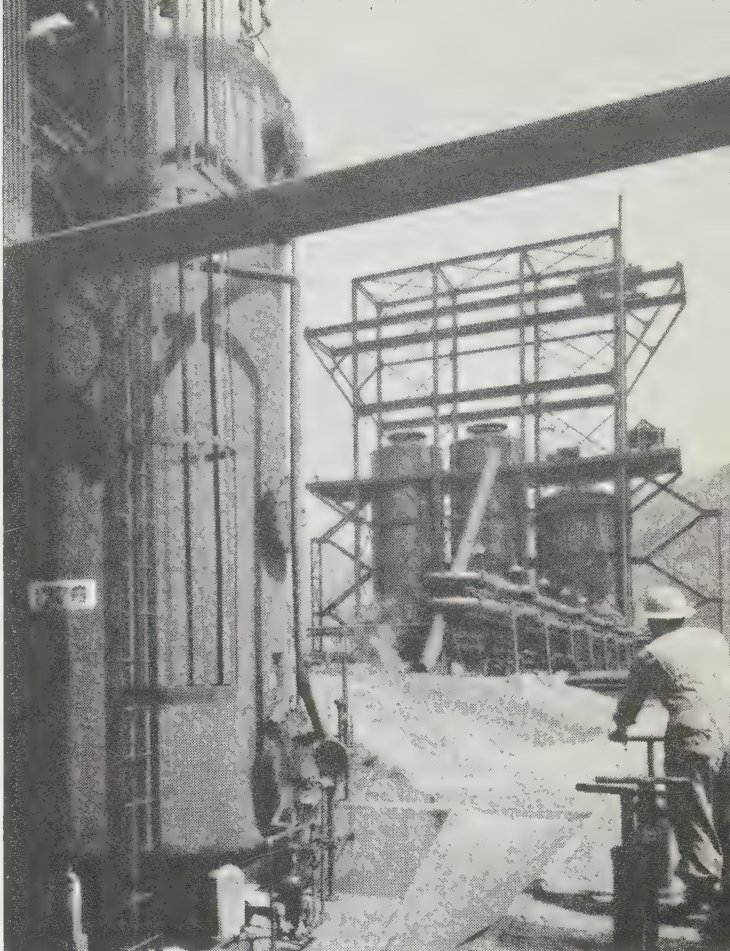
Borazole.—In 1926 the German chemists A. Stock and E. Pohland allowed diborane and ammonia to interact. An adduct, $\text{B}_2\text{H}_6(\text{NH}_3)_2$, was formed at low temperature and it lost hydrogen at 180°C . to yield borazole, $\text{B}_3\text{N}_3\text{H}_6$. This substance was a colourless liquid boiling at 53°C . and melting at -58°C . The structure assigned was a six-membered ring like benzene, with B and N atoms alternating. For this reason, and because the physical properties somewhat resemble benzene, it was nicknamed "inorganic benzene." Chemically, however, there is no resemblance since water decomposes it with formation of boric acid, ammonia and hydrogen.

D. L. Coursen and J. L. Hoard (Cornell university, Ithaca, N.Y.) made careful X-ray diffraction measurements in 1952 of the bond lengths in B-trichloroborazole. Results proved that the B and N atoms were planar and that its molecular configuration closely resembled that of the benzene analog, sym-trichlorobenzene. The bond distances found were $\text{B}-\text{N}$ 1.41 Å and $\text{B}-\text{Cl}$ 1.76 Å. The bond angles were about 120° . R. L. Pease of Atomic Energy Research establishment, Harwell, Eng., also was active in this field.

Aluminum Chloride.—Claims and counterclaims had appeared in the past regarding possible interaction of dry hydrogen chloride and dry aluminum chloride. To settle this question, H. C. Brown and H. W. Pearsall (Wayne university, Detroit, Mich.) demonstrated nonreaction. Hence, the acid HAlCl_4 is nonexistent as such, although derivatives of it seem to be well authenticated.

Brown and Pearsall's work also showed that nothing happened between toluene and pure aluminum chloride at either -80°C . or 0°C . unless a trace of water was present; but at -80°C . with water present the aluminum chloride dissolved to give a brilliant green solution. One part of hydrogen chloride was taken up for each part of aluminum chloride dissolved. The green complex possessed the structure $(\text{CH}_3\text{C}_6\text{H}_5)^+ \text{AlCl}_4^-$. In other words, it was a carbonium salt of the hypothetical HAlCl_4 .

At -45°C . a yellow complex was formed, $(\text{CH}_3\text{C}_6\text{H}_5)^+ (\text{Al}_2\text{Cl}_7)^-$, involving two parts of aluminum chloride. The complexes which form in the course of Friedel-Crafts reactions are regarded as related. The investigators proposed that the high solubility of aluminum chloride in these complexes is due to further complexing, yielding substances with this general formula: $(\text{ArH}_2)^+ (\text{AlCl}_4 \cdot n\text{AlCl}_3)^-$, wherein ArH is an aromatic hydrocarbon. Also, they suggested that these complexes play



HIGH-PRESSURE STRUCTURE at the coal-hydrogenation plant opened by the Union Carbide & Carbon Corp. at Institute, W.Va., in 1952. It was the first commercial plant to use coal as a raw material for producing chemicals

an important role in most Friedel-Crafts reactions by supplying a highly polar medium in which the ionic intermediates may form and react.

Paraffin Adducts.—The inertness of paraffins is well known. It was surprising, therefore, when it was learned that they formed crystalline adducts with urea and thiourea. One of the most recent of the many investigations on this topic was that of R. W. Schiessler and D. Flitter of Pennsylvania State college, State College, Pa. They found that pentane or hexane did nothing, but that unbranched alkanes, heptane and above, readily formed crystalline complexes with urea at 25°C . Branching and terminal phenyl groups interfered with this addition, since 2,2,4-trimethylpentane, 7-methyltridecane, 3-ethyltetracosane and 1-phenyloctane failed to react. If the unbranched chain of an alkylbenzene was sufficiently long (as in 1-phenyl-eicosane) then addition did occur.

Thiourea was found even to add to many branched paraffins and cycloalkanes: neopentane, 3-ethyltetracosane, cyclopentane, cyclohexane, but not to others: 5-butylnonane, 3-methylheptane, 1-phenyloctane. They found that complexes will form if the cross-sectional dimensions of two of the three axes of the hydrocarbon is about $5.8 \times 6.8 \text{ Å}$.

D. Swern and W. S. Port (Eastern Regional Research laboratory, Wyndmoor, Pa.) employed urea complexes to recover vinyl palmitate (monomer) from partly polymerized material, and to separate vinyl pelargonate from cross-linking contaminants. The ingredients were mixed in methanol solution and the complex precipitated directly. To remove urea from the complex one only needed to add water and the urea dissolved.

Acetylenic Compounds in Nature.—In 1950 N. A. Sörensen (Sweden) found that polyacetylenic compounds were isolable from several genera of Compositae. Extending this work, Mar-

jorie Anchel (the New York Botanical Garden, New York, N.Y.) found that acetylenic compounds were also obtainable from fungi, from culture liquids of different species of Basidiomycetes. The presence of groupings such as $-C\equiv C-C\equiv C-C\equiv C-CH=CH-$ or $-C\equiv C-C\equiv C-C\equiv C-$ were strongly supported by ultra-violet absorption spectra and other evidence.

Soil Conditioners.—Much industrial interest was aroused in 1952 in the field of soil conditioning in view of the announcement, notably by Monsanto Chemical company, St. Louis, Mo., that small amounts of certain polymeric substances when mixed with a clay soil were capable of imparting structural strength and workability to the moist soil. Trade names such as Krilium, Merloam, Acrylon and Fluffium appeared. One of these products is the sodium salt of hydrolyzed polyacrylonitrile. Another is a modified vinyl acetate and maleic compound. In powder form 1 lb. of material is recommended to treat about 200 sq.ft. of soil. It seemed that this might be a growing area of agricultural chemistry.

Ring Contraction During Reduction.—The Clemmenson reduction of ketones by zinc amalgam and hydrochloric acid is an established way to replace the keto oxygen by hydrogen. An example is the conversion of acetophenone into ethylbenzene. N. J. Leonard and co-workers (University of Illinois, Urbana, Ill.) found remarkable peculiarities in this reaction. In heterocyclic ketones wherein the keto group is attached to a carbon atom holding a ring nitrogen or sulphur atom, Leonard found many examples where ring contraction occurred during reduction of the ketone under Clemmenson conditions. Thus, a seven-membered ring changed to six, and a six-membered to five. An eight-membered ring did not change to seven, but instead became acyclic. This example was the change of 1,2-dimethyl-1,2,3,4,5,6,7,8-octanone into N-methyloctylamine.

Dihydropyran.—This compound had become an industrially important chemical a few years before, stemming from its synthesis from tetrahydrofurfuryl alcohol by catalytic dehydrogenation over hot alumina.

Alkoxy derivatives of dihydropyran were prepared in 1952 by chemists (C. W. Smith, D. G. Norton, S. A. Ballard) at Shell Development Co., Emeryville, Calif., but the method did not use either dihydropyran itself or its precursor. Instead, vinyl ethers were added to acrolein by heating the mixture in a nickel-lined bomb at 185° C. for 1 hr. Alcohols and carboxylic acids add to the double bond of these compounds in the same manner as to dihydropyran.

Acrolein was found to add not only to vinyl ethers but also to styrene (at 155° C.), acrylic esters (180° C.) and isobutylene (220° C.). Six-membered O-heterocyclic compounds were formed from each. These new classes of compounds opened the way to many new synthetic operations.

Isonicotinic Acid.—Until 1952 this compound had no important uses. The acid is made by oxidizing a methylpyridine (gamma picoline) which occurs in coal-tar bases. An important new use appeared when it was discovered that toward test animals certain of its derivatives displayed antitubercular activity in vivo far in excess of any other known substance. Isonicotinic hydrazide was particularly effective. The acid itself was not active.

Search for this compound started with the finding by V. Chorine (France) in 1945 that nicotinamide showed some tuberculostatic activity whereas nicotinic acid did not. Although both the amide and the acid are active as vitamins it was apparent that the tuberculostatic activity must be independent of vitamin activity. H. H. Fox of Hoffmann-LaRoche, Inc., Nutley, N.J., prepared several related compounds containing the pyridine nucleus and had them tested. 3-Aminoisonicotinic acid was one

of these. Although its in vivo antitubercular activity was only half that of nicotinamide it was the first compound encountered which displayed activity in the isonicotinic series. The hydrazide mentioned above was tested in a logical extension of this work. In mouse infections it was effective at $\frac{1}{13}$ the dose required for streptomycin. Also it protected mice against tuberculosis in an unusually low dosage range (10 mg. per kilogram per day). In view of the encouraging preliminary work with humans, many pharmaceutical houses were engaged actively on the tuberculosis problem. Search was largely empirical and many closely related compounds were found to be ineffective. For example, although hydrazine and hydroxylamine are closely related substances, T. S. Gardner of Hoffmann-LaRoche showed that isonicotinohydroxamic acid showed no antitubercular activity.

Cortisone.—Interest in production of this steroid continued unabated. Merck's production, starting with deoxycholic acid from ox bile, was such that its price was lowered in 1952 to \$9.60 per gram wholesale. The Upjohn company, Kalamazoo, Mich., became an important contender for part of the cortisone market by discovering biochemical methods of oxygenating the important C-11 carbon of steroids. A patent for this process was issued to H. C. Murray and D. H. Peterson. Thus, the bio-oxidation of progesterone to 11 α -hydroxyprogesterone was accomplished with *Rhizopus arrhizus*. Moulds of the Mucorales order were used to promote oxidations at C-11 on other steroids.

Carl Djerassi, H. J. Reingold and G. Rosenkranz of Syntex, Mexico City, Mex., found that hecogenin was a steroid containing a keto group at C-12 which occurred in many of the *Agave* indigenous to Mexico, southwestern U.S. and east Africa. To transfer the keto group from C-12 to C-11 these chemists brominated the compound, hydrolyzed the product (an acyloin), then oxidized it to the 11,12 diketo structure with bismuth oxide, and preferentially reduced the last to the 11-keto compound, from which cortisone was obtained by established procedures.

Terramycin.—This broad spectrum antibiotic, prepared in culture broths of *Streptomyces rimosus*, was isolated in 1951 in pure form by a group of chemists at Chas. Pfizer & Co., Inc., Brooklyn, N.Y. It is a pale yellow solid melting with decomposition at 184° C. but the anhydrous material retains four-fifths of its antibiotic activity after six days at 105° C. It gives salts with both acids and bases, hence it is amphoteric.

With the pure substance available, work on its structure progressed rapidly with the result that the complete structure was announced in 1952. F. A. Hochstein, C. R. Stephens, L. H. Conover, P. P. Regna, R. Pasternack, K. J. Brunings (all of Pfizer) and R. B. Woodward (Harvard university, Cambridge, Mass.) was the team making the announcement. The methods used were degradation processes in both acid and alkaline solutions, caustic fusion, reduction, and distillation with zinc dust.

The structure assigned carries a naphthacene skeleton. Just as anthracene is composed of three linear fused benzene rings, naphthacene is composed of four. Attached at various positions to this ring system are amide, amine, phenolic, alcoholic and keto groups. It may be named 2,4a,5,7,12-pentahydroxy-1-dimethylamino-11-methyl-4,6-diketo-1,4,4a,12a,6,11,11a,12-octahydro-3-naphthacenecarbonamide and this structure is supported by these facts. For convenience, the four rings will be referred to as A,B,C,D. Ring A carries the amine group, and ring D at the other end is phenolic. One double bond is in A, one in B and three (aromatic) in D.

If terramycin is first reduced by zinc and acetic acid (essentially removing the amine group and the hydroxyl at 4a) and then is dry-distilled with zinc dust, naphthacene is obtained thereby proving the nature of the skeleton. Acid treatment causes dehydration at 11,11a and induces opening of the B ring

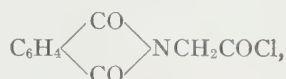
by breaking the 4a,5 bond (a β -diketone) to form "apoterramycin," containing a lactone structure which involves the enol at 5 and the 12-hydroxyl.

The structure is consistent also with the products of alkaline degradation. Only the D ring survives this treatment. The products formed (such as 5-hydroxy-4-carboxy-3-methylindanone-2-acetic acid [or "terracoic acid"] and 6-acetylsalicylic acid) contain a salicylic acid moiety which would be expected because of the 6-keto and 7-hydroxy groups in the structure of terramycin. To explain formation of these compounds it was assumed that salicylic acid carrying this substituent next to the acid group, $-\text{C}(\text{CH}_3)(\text{OH})-\text{CH}(\text{CHO})-\text{COOH}$, was an intermediate. The indanone ring of terracoic acid then resulted by an aldehyde condensation para to the phenolic group.

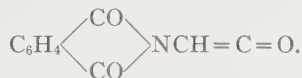
Complete proof of structure awaited synthesis but the essential accuracy seemed firmly entrenched with the existing evidence.

Model Penicillin Systems.—J. C. Sheehan and collaborators at Massachusetts Institute of Technology were active in synthesizing compounds containing the ring system found in penicillin. In the key step, phthalimidoacetyl chloride was made to interact under conditions of high dilution with 2-phenyl-2-thiazoline in the presence of triethylamine. Essentially, this was a means of fusing the β -lactam ring such as is present in penicillin to the thiazole nucleus.

Triethylamine was known to extract the elements of hydrogen chloride from substituted acetyl chlorides to give ketenes (as their dimers). Possibly phthalimidoacetyl chloride,



was thus converted into phthalimidoketene,



If so, it would then add directly to the $\text{C}=\text{N}$ double bond of the thiazoline.

Extending this plan, Sheehan found that succinimidoacetyl chloride could also be used. The product from this reaction, on treatment with dilute base, underwent hydrolysis to open the imide ring without disturbing the lactam ring. This gave rise to a side chain resembling those in natural penicillins. Next, the thiazoline nucleus was modified to hold dimethyl and carboxy groups. Except for the phenyl group which was necessarily present in this work the thiazoline nucleus now was identical to that in natural penicillin. This compound also condensed acceptably with succinimidoacetyl chloride.

Morphine.—In 1952 Marshall Gates of the University of Rochester, N. Y., announced the complete synthesis of morphine starting with naphthalene. From it, 2,6-naphthalenediol was prepared. One of the two hydroxy groups was protected by benzoylation, then attack at the other position by nitrous acid yielded 1-nitroso-6-benzoxo-2-naphthol from which yellow 6-benzoxo-1,2-naphthoquinone and eventually 6-benzoxo-1,2-dimethoxy-naphthalene were obtained. After removal of the benzoyl groups, repetition of the above steps yielded 1,2-dimethoxy-5,6-naphthoquinone. Ethyl cyanoacetate condensed at position 8 of this compound, thus inserting the 8-cyanomethyl group (after decarboxylation).

This compound was now heated with butadiene at 85° C. for two days to produce a phenanthraquinone from the naphthoquinone. Morphine had long been known to possess a hydrogenated tricyclic phenanthrene skeleton and this step of Diels-Alder addition created it. With phenanthrene numbering, the cyanomethyl group was at 4a and the two quinone groups at 9,10.

The next step involved hydrogenation of the quinone at 10, then ring closure of this group with the cyano group to form a cyclic amide. Reduction of the other quinone oxygen (at 9) was next achieved, following which the amide carbonyl was reduced to amine by lithium aluminum hydride and methylated on the nitrogen. The resulting base was the same as one obtained by hydrogenating β -dihydrothebaine (from thebaine), then methylating, tosylating and detosylating with hot collidine. This proved unequivocally that the attachment of the N-containing chain of morphine was at the 4a-phenanthrene position (the C-13 morphine position).

This racemic base was now separated into its optically active, dextrorotatory component. The double bond from the butadiene adduct was hydrogenated with aqueous sulphuric acid and partly demethylated (ether to phenol). The secondary alcohol group created by hydration of the double bond was now oxidized to ketone. The next step was bromination. This not only substituted at 4 because of the phenolic hydroxyl at position 1, but also formed a double bond (by substitution and elimination of HBr) next to the ketone group. Another change also happened which was welcome but most unexpected, namely, inversion of asymmetry at the C-14 position to align it stereochemically to morphine.

Three steps took this compound to codeine: hydrogenation, bromination with three parts of bromine (which step caused the ether-type ring closure between positions 1 and 12), and reduction with lithium aluminum hydride (keto to alcohol, and replacement of Br by H).

Hydrolysis of codeine to morphine would have been a stumbling block, since the usual means of cleavage of ethers such as by mineral acids tend to destroy the morphine molecule. In 1951, however, H. Rapoport (University of California, Berkeley) discovered that heating of codeine with pyridine hydrochloride at 220° C. gave rise to morphine, hence this completed the synthesis.

Amino Acids and Peptides.—Perhaps the most outstanding work in this field was that of F. Sanger (Cambridge university) who completed the problem of the structure of insulin. Two or three years earlier this problem would have been regarded as incapable of solution, but Sanger developed an approach which was simple, logical and convincing. As a result of this work, insulin appears to be composed of four long polypeptide chains, held together by the disulphide linkages of cystine. Two of these four chains are identical and have glycine end groups. The other two also are identical to each other and have a terminal phenylalanine residue. These end groups were protected and labelled by 2,4-dinitrophenyl groups, inserted by use of 2,4-dinitro-1-fluorobenzene and mild alkali. Then the disulphide linkages were broken and oxidized by performic acid (a peroxide) and the fragments were collected into acidic and basic fractions. The order of the amino acid constituents in the basic fraction was previously announced. The work during 1952 completed the task by studying the acidic fraction. It was broken up into dipeptides and tripeptides by controlled enzymatic hydrolysis, and in these the amino acid sequence was recognizable. Thus the entire arrangement of 21 amino acids in this fraction was established, the order of the last 10 units being valine, serine, alanine, cystine, cystine, glutamic acid (amide form), glutamic acid, valine, isoleucine and glycine.

Sanger's method was used by J. F. Carson (Western Regional Research laboratory, Albany, Calif.) in determining the nature of the free amino groups in the antibiotic "subtilin." These were lysine and two sulphur-containing acids, $\text{C}_4\text{H}_5\text{S}(\text{NH}_2)_2(\text{COOH})_2$ and $\text{C}_5\text{H}_8\text{S}(\text{NH}_2)_2(\text{COOH})_2$.

In the field of synthetic polypeptides, H. Leuchs discovered in 1906 a novel synthesis which had recently been used extensively. He converted the amino group of glycine to a urethan

by reaction with ethyl chloroformate, and then changed it into a cyclic acid anhydride, best called azasuccinic anhydride, by reaction with thionyl chloride. (The prefix aza tells that one of the CH_2 groups of succinic anhydride is replaced by NH .) Reaction with water converted the anhydride into the polypeptide related to glycine, as carbon dioxide was evolved. Occasional interest in this reaction was maintained between the years 1906 and 1939; then there was nothing for eight years until a brief communication by R. B. Woodward and C. H. Schram (Harvard university) appeared to rediscover this synthesis of polypeptides. The publicity which attended this communication served to precipitate a flood of papers on polypeptide syntheses, not only from universities but also from industrial laboratories. This interest may have stemmed from the possible film and fibre-forming properties of these synthetic polypeptides. The extent of this interest may be judged by listing some of the workers who reported on polypeptides from azasuccinic anhydrides in 1951-52: F. Wessely (Vienna), E. Katchalski (Rehovot, Israel), W. E. Hanby (Courtaulds Ltd., Maidenhead, Eng.), H. Tani (Japan), M. A. Stahmann (University of Wisconsin, Madison), A. C. Farthing (Imperial Chemical Industries, London), M. Frankel (Jerusalem), K. Hofmann (University of Pittsburgh, Pa.), H. W. Jones (Western Regional Research laboratory), W. W. Prichard (E. I. du Pont de Nemours & Co., Wilmington, Del.).

To produce polypeptides by the Leuchs method, amino acids themselves were necessary. C. D. Hurd, C. M. Buess and L. Bauer of Northwestern university, Evanston, Ill., discovered a new method, starting with malonic acid. This was converted to a derivative with hydroxylamine and rearranged. Polypeptides precipitated on heating aqueous solutions of the hydroxamic salts. Azasuccinic anhydrides were probably formed transiently. These polypeptides were insoluble in aqueous solutions but were partially or totally soluble in ethanol, formic acid, cresol, pyridine and dimethylformamide.

Protein studies were also numerous, and one of these will be mentioned. I. M. Klotz, R. K. Burkhard and J. M. Urquhart (Northwestern university) found that on the alkaline side (above pH of 7) human albumin reacts in a specific manner with para (but not ortho) dimethylaminoazobenzene-sulphonates, -carboxylates, -phosphonates or -arsonates. The method was spectrophotometric, involving a comparison of optical densities. The nitrogen of the dimethylamino group was involved in a linkage with the protein, and experiments with modified proteins suggested that the tyrosine residues in human albumin completed this link. A bond was formed also between the anionic (negative) end of the azo dye and the cationic sites of the protein. Since the para but not the ortho compounds were effective it was reasoned that the relative distances separating the dimethylamino and sulphonate groups could be regarded as a yardstick for measuring certain distances in the albumin molecule. Thus, some side chains from tyrosine residues must be 12 to 13 Å away from certain cationic locations. (See also BIO-CHEMISTRY; CHEMOTHERAPY; PHYSICS; VITAMINS AND NUTRITION.)

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Chemotherapy. Probably the most important and interesting drugs introduced during 1952 were isonicotinyl hydrazine (isoniazid) and its close relatives, 1-isonicotinyl 2-isopropyl hydrazine (iproniazid) and isonicotinyl-glucosyl-hydrazine. The development of these isonicotinic acid hydrazides was stimulated by the demonstration that the sulfone drugs and tibione possessed therapeutic value in the treatment of tuberculosis and leprosy. Search for more active related compounds led to the isonicotinic hydrazides. In the test tube, these isonicotinic acid derivatives showed themselves to be sev-

eral times more potent in antituberculosis activity than p-aminosalicylic acid (PAS) and slightly more active than the streptomycins. One of the great advantages of the isonicotinic derivatives is that they may be administered orally. Clinically, preliminary results were impressive. However, the exact position of these drugs in the long-term treatment of tuberculosis remained to be determined. It was suggested that they should be reserved for alternative or concomitant use with the approximately effective antibiotics, streptomycin or dihydrostreptomycin.

A new antibiotic, erythromycin, derived from *Streptomyces erythreus*, was investigated through the joint efforts of the large pharmaceutical manufacturers. It is a broad-spectrum antibiotic active against both gram-positive and gram-negative bacteria and mycobacteria as well as the viruses of the psittacosis-lymphogranuloma venereum group. It also showed activity against the rickettsial diseases and amoebic dysentery. Staphylococci which had developed resistance to the effects of penicillin and the broad-spectrum antibiotics, aureomycin, terramycin and chloromycetin, proved susceptible to erythromycin. However, these organisms then developed resistance to erythromycin. The drug may be administered orally and its toxicity is apparently low.

Pleocidin, another new antibiotic, was isolated from the organism *Streptomyces lavendulae*. It was shown to be highly toxic on injection but may be valuable for topical application since it was less irritant than streptothricin.

Mycobacillin, a newly introduced antibiotic, showed extreme activity against the acid-fast bacilli, the causative organisms of leprosy and tuberculosis. It had not been tested adequately in the laboratory or clinic.

Several new and interesting penicillin salts were developed during 1952. The hydriodide of the diethylaminoethyl ester of penicillin G, known as neopenil, when administered by injection caused a significantly higher concentration of penicillin in the bronchial secretions and saliva than ordinary types of penicillin. Its chief field of application appeared to be in the treatment of penicillin-sensitive infections of the respiratory tract.

The dibenzyl-ethylene-diamine salt of penicillin G, known as bicillin, produced protracted blood levels of penicillin. When the drug was given orally, these blood levels persisted for 48 hours but when given by injection, effective blood concentrations of penicillin persisted for three weeks following administration of 1,250,000 units. This effect was approximately five times longer temporally than any previously used penicillin preparation. The drug was expected to be of particular value in the prevention of recurrent attacks of rheumatic fever and in the treatment and prophylaxis of venereal disease.

Fumagillin, an antibiotic extracted from *Aspergillus fumigatus*, showed definite activity against *Endamoeba histolytica*, the organism responsible for amoebic dysentery. This drug was still in the investigational stage in 1952 but appeared to be a promising new weapon for the treatment of acute amoebic dysentery.

During the year it became apparent that chloramphenicol (chloromycetin) was responsible for the development of aplastic anaemia in a very small number of cases treated with this antibiotic agent.

X-ray diffraction studies of the molecular structure of aureomycin and terramycin, two of the wide-spectrum antibiotics, disclosed that they were strikingly similar in chemical content and the shape and orientation of their molecules.

For the treatment of malaria, three drugs seemed to have gained ascendancy; amodiaquin, camoquin and chloroquine (aralen) were shown to be valuable suppressants. A single massive dose of these drugs rapidly terminated the acute attack of vivax malaria and produced a clinical cure in a majority of

patients with falciparum malaria. However, they did not prevent relapse. Primaquine was shown to be curative for vivax malaria. It was advised that this drug be utilized only after the patient had been removed from an area where malaria was endemic. Since primaquine was curative, it completely eliminated the malarial parasites from the blood stream of the patient. As immunity is not conferred by an attack of malaria, the patient would succumb once more if bitten by an infected mosquito.

In the hormone field, a new process for the manufacture of cortisone made its manufacture simpler and more economical. The method ingeniously employed mould fermentation to convert progesterone to 11-ketoprogesterone and thus materially shortened the number of steps necessary in the synthesis of cortisone. Other factors which lowered the costs of production were successful synthesis from various plentiful vegetable sources and better yields from the bile acid method. (See also CORTISONE, HYDROCORTISONE and CORTICOTROPIN.)

Trianisyl-chloro-ethylene, better known as "TACE," a new estrogenic material, was introduced commercially during the year. This product demonstrated several unique properties. When administered orally, it was apparently changed in the liver to a more active estrogen than the original compound. It also had the property of being stored in the fat depots of the body. Therefore, although administered orally, it had a prolonged action since it was released slowly from the fat depots. The drug apparently showed usefulness in the treatment of the menopause and inoperable cancer of the prostate.

Corticotropin (ACTH, adrenocorticotrophic hormone) was further purified by oxycellulose absorption techniques. This more purified ACTH was found to be three or four times more active on intramuscular injection than the cruder preparations. Several firms made this more active material available commercially. In general, it was supplied in a mixture with 20% gelatin; the latter prolongs the absorption period of ACTH and therefore secures longer lasting effects, thus limiting the necessary injections to but one or two a day.

An interesting development was the report by University of Rochester, N.Y., chemists that they had successfully completed the first total synthesis of morphine beginning with Schaeffer's acid. This represented an outstanding triumph of synthesis.

An enzyme, hyaluronidase, was reported as successful in averting further formation of kidney stones in patients who had suffered repeated attacks. It acted by clearing certain colloidal materials from the urine of these patients.

In cancer research, the Sloan-Kettering institute reported that injections of Egypt virus for temporarily halted the progress of lymphosarcoma and carcinoma of the colon. On microscopic study of the cancer tissues, it was evident that the cancer cells were harmed materially. Unfortunately when the patient developed immunity to the virus, cancer growth accelerated markedly.

A new drug for the treatment of osteoarthritis was added during the year in the form of butazolidin or phenylbutazone. It proved to be an effective analgesic, antipyretic and anti-inflammatory agent.

A new development in the treatment of Parkinson's disease was announced during 1952. Working with the tropine portion of the atropine molecule, chemists succeeded in linking to it the benzohydril portion of the antihistamine, diphenhydramine hydrochloride (benadryl) molecule. The new drug, known as tropine benzohydril ether methanesulfonate or MK-02, had a cumulative effect which gradually controlled the rigidity, tremors, spasm, cramps and salivation in patients with parkinsonism in approximately two-thirds of the tests.

For the treatment of high blood pressure, 1-hydrazinophthalazine hydrochloride (apresoline) and the hexamethonium drugs showed definite value. Their combined use, however, increased

the incidence of dangerous side effects and was considered advisable only following careful, closely observed trial.

In experimental animals, the alkyl nitroindoles showed themselves to be potent, oral, blood pressure-reducing drugs. They counteracted the effects of serotonin, a substance found in considerable concentration in the circulation of hypertensive patients.

A new anticholinergic drug, prantal, was introduced during 1952 for the treatment of peptic ulcers. It demonstrated curative effect and relieved pain within a period of days following inauguration of use.

In the investigation of radioactive isotopes, it was discovered that the beta-rays from strontium 90 were effective in the treatment of ocular conditions such as corneal ulcers, vernal conjunctivitis and tuberculosis of the outer portions of the eye.

Waste fission products of the atomic energy program were suggested as a means of sterilization of heat-sensitive drugs. The gamma-ray radiation from these products presumably might be utilized for cold sterilization of antibiotics, hormones, vitamins, enzymes, antibodies, plasma, other blood fractions, essential oils and surgical dressings.

Radioactive cobalt was found an effective means of irradiation of tumour masses. Disks of radioactive cobalt are held within a huge barrel of lead weighing approximately a ton. The walls of the barrel are approximately a foot thick and the opening at the bottom of the tube is guarded by eight inches of mercury. The gamma-rays emitted from this machine follow an extremely narrow beamlike path permitting intensive bombardment of small areas of tissues. The approximate penetrating power of the cobalt gamma-rays is about the same as that generated by a 3,000,000-v. X-ray machine. Canadian experimenters reported extremely gratifying results in the treatment of radio-sensitive cancer. Several centres in the United States began experimentation with similar devices.

Drug Production.—Production of drugs both from synthetic and natural sources increased in the United States during 1952. Penicillin production increased 25%, streptomycin, 75%, and dihydrostreptomycin, 300%, over the same period in 1951. The output of wide-spectrum antibiotics also was materially increased but the adverse reports concerned with the incidence of aplastic anaemia following use of chloromycetin affected all members of this group. It was expected that production and demand would fall during the latter half of 1952. (See also ALLERGY; BACTERIOLOGY; MEDICINE; SURGERY; VETERINARY MEDICINE; VITAMINS AND NUTRITION.) (P. L. W.)

Chemurgy. New industrial uses for farm-grown raw materials and the development of new crops for agriculture, which are the primary objectives of chemurgy, advanced on many fronts in the United States during 1952. While no noteworthy new discoveries were announced, expansion of markets previously opened took place on an important scale.

The rising demand for corncobs presented a characteristic example. Formerly corncobs were regarded as a worthless waste by-product of corn production. They had little value even for fertilizer. They attracted little consideration as an industrial raw material because the supplies were widely scattered, mostly on the farms where the corn was grown. A few uses were discovered for them before World War II, and the one processor who purchased them handled about 5,000 tons in 1939. The 1952 consumption was expected to reach 600,000 tons, with more than 25 processors collecting and grinding them over the north central states where corn production is heaviest.

About two-thirds of the cobs used industrially during the year went into the manufacture of furfural. Furfural, an amber-coloured liquid chemical, contributes to the manufacture of

nylon. Furfural also enters into the production of synthetic rubber, synthetic resins and medicinals, and is used in refining vegetable and petroleum oils.

The next largest industrial use for corncobs was provided by the electroplating and metal-stamping industries. There ground cobs remove rough spots and dirt, absorb residual plating solutions and polish finished products. Ground cobs applied by air-blast methods clean many fine mechanical parts in precision machines in the automotive, aeroplane and electric industries, and remove rough parts from moulded plastics.

Still other markets for ground corncobs were found in agriculture itself. More than 100,000 tons went for poultry litter and livestock bedding. Still other quantities were combined with blackstrap molasses for feeding beef cattle, or were applied as mulches for garden crops.

No chemurgic matter attracted greater public attention than the remarkable expansion of applications for chlorophyll extracts. Medical researchers observed first that chlorophyll proved highly effective in reducing unpleasant odours arising from body wounds. From this discovery other studies resulted in chlorophyll, the green colouring matter in plants, being included in formulas for breath and body deodorants, toothpaste, chewing gum and even in dog foods. Consumer sales of chlorophyll products were estimated to exceed \$150,000,000 for 1952.

Chlorophyll was obtained principally by extraction from alfalfa. Spinach and broccoli also were used as sources.

The disappearance of the chestnut tree, once the country's principal source of tanning extracts, led to extensive search for other economical domestic sources. One of the more hopeful prospects was the sweet-potatolike root of canaigre, a wild plant native to southwestern United States and Mexico. Following researches by the Eastern Regional Research laboratory of Wyndmoor, Pa., 68 postmen in eastern Pennsylvania were wearing pairs of shoes with one sole tanned by a canaigre process and the other by the usual tanning methods. It was expected that such tests would determine the relative quality of the canaigre extract.

The new chemurgic fibre made from zein, the protein element in corn, was announced two years earlier under the trade name of Vicara. During 1952 it appeared to have won general consumer acceptance in blends with other natural and synthetic fibres.

A new development in antibiotics during the year was their general adoption in livestock feeds. Experiments and practice confirmed the previous observations that antibiotic additions to feeds greatly hasten the growth of young animals. One company began large-scale production of a synthetic milk for pigs which, if found practical by farmers, might considerably increase the potentials of pork production. Pigs raised on this milk are taken from the sows shortly after birth. By thus shortening the mother's lactation period, breeding might yield three litters a year instead of two.

About 4,000 ac. of kenaf, a fibre plant, were expected to be harvested in Florida. The crop received governmental encouragement in view of kenaf's adaptability to the uses of jute for burlap, of which around 500,000 tons are imported annually.

The campaign to create domestic supplies of castor beans made considerable headway. The 1952 acreage probably exceeded 200,000, principally in Oklahoma, Texas, California and Arizona. New strains of seed proved highly productive and better adapted to newly developed harvesting machinery. Uncertain foreign supplies and a rapidly growing industrial demand for castor bean oil in many forms had established the urgency for sources in United States agriculture.

(W. McM.)

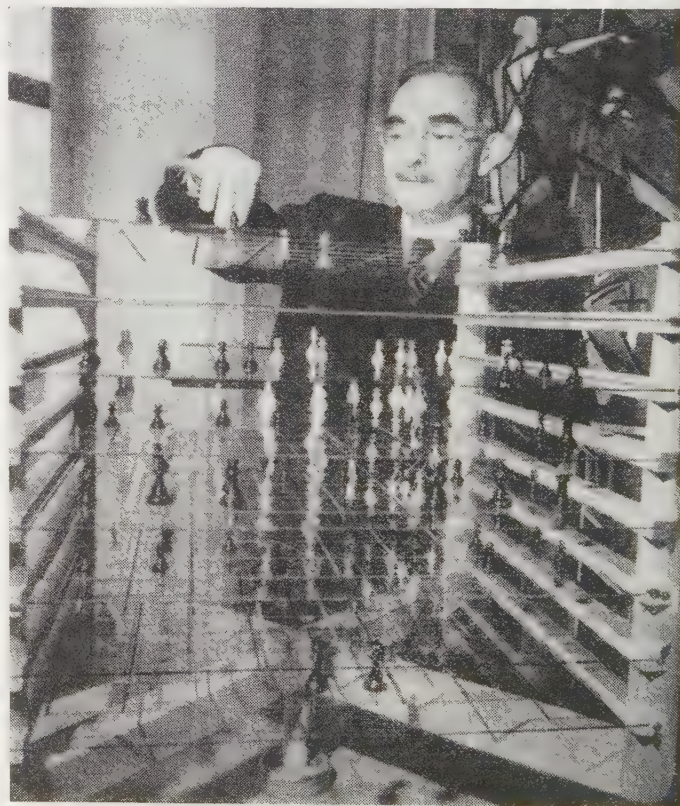
Cherries: see FRUIT.

Chess. Larry Evans, a student at the City College of New York, retained the United States open chess championship at Tampa, Fla., in July 1952, finishing the tournament with a score of 10-2 after winning eight games and drawing four. Arturito Pomar of Madrid, Spain, was the runner-up. He went through undefeated for a final tally of 9½-2½.

Mrs. Mary Bain, New York, N.Y., kept her national women's open laurels and Evans and Donald Byrne, New York, N.Y., were co-champions in national speed competition. Curt Brasket, Tracy, Minn., won the United States junior title at Omaha, Neb., with Ross Siems, Toronto, Can., second. James T. Sherwin, Columbia university star, lost his New York state title in August, that prize being captured by Jack Collins, Brooklyn.

World team matches among 25 nations at Helsinki, Fin., featured international competitions, and the U.S.S.R. carried off the Hamilton-Russell trophy, symbolic of world supremacy, with a score of 21-11. Argentina was runner-up with 19½-12½. Then followed Yugoslavia, Czechoslovakia, the United States, Hungary, Sweden, the Federal Republic of Germany and Finland in the title division. The soviet team was comprised of Alexander Kotov, captain; Paul Keres, V. Smyslov, D. Bronstein, E. Geller and I. Boleslavsky.

The Hollywood invitation tourney at Los Angeles, Calif., in May attracted masters of several countries. Svetozar Gligoric of Yugoslavia came through as winner with 7½-1½ after winning six games and drawing three. Pomar was second and Herman Steiner, Los Angeles, Calif., was third. Gligoric earlier had triumphed at the Hastings Chess congress gathering in England in January, where he finished unbeaten with a tally of 7½-1½. D. A. Yanofsky, Canada; took the second prize with 6-3. Keres won the championship of the Soviet Union and added to his trophies with a victory at Budapest in April. Kotov led a big field of masters in the world zonal tournament in Sweden in October with a score of 16½-13½ after going through undefeated. T. Petrosian, also Russian, was second.



THREE-DIMENSIONAL CHESS demonstrated by E. G. Kogbetliantz, professor of mathematics at the New School for Social Research, New York city, where Kogbetliantz also taught a course in the three-dimensional game in 1952

Miguel Najdorf of Buenos Aires, Arg., and Samuel Reshevsky of New York, N.Y., tied for first in an international tourney that drew 23 masters to the Capablanca Chess club in Havana, Cuba. The two top players scored 18½-3½. Gligoric finished third with 17-5. Reshevsky and Najdorf later met in a match for what was called the "championship of the non-Communist world" and play was held in New York city, Mexico City and San Salvador. Reshevsky triumphed 11-7 after gaining a 7-1 lead in their New York series at the Manhattan Chess club.

(T. V. H.)

Chiang Kai-shek (1887-), virtual ruler of China for more than two decades before the National government was driven to Taiwan (Formosa) in 1949 by the Communists, resumed the presidency in 1950 about a year after he retired from his office to enable Vice-President Li Tsung-jen to negotiate a peace with the Communists early in 1949. In 1952 Chiang became a symbol of anticommunism, just as he was a symbol of China's resistance against Japanese aggression during 1937-45. In a press interview on July 4, Chiang stated that the Chinese Communists were irrevocably committed to loyalty to Moscow or they would never have gone into Korea. As in China's long history no tyrant remained in power long, Chiang believed that when the forces of his government eventually established beachheads on the mainland, the Chinese people would rise up to join him to overthrow the Communist rule. Furthermore, he declared that the national government would not, with the support of friendly free peoples, permit the Communist regime to be permanent.

In May Chiang stated that his government, if and when it returned to the mainland, would recognize the Communist redistribution of land.

After the ousting of Li Tsung-jen, Chiang controlled the national government practically without opposition. When Lieut. Gen. P. T. Mow, formerly Chiang's trusted aide and Chinese air force representative in Washington, D.C., defied Chiang's order to return to Formosa early in 1952 and denounced Chiang as unconstitutional head of the government, it was reported that Chiang was upset over the matter. Having been schooled in Confucian ethics as a boy and having become a Christian after rising to prominence, Chiang had always stressed the importance of faith, loyalty, devotion and a sacrificial spirit in life. (See also CHINA.)

(H. T. CH.)

Chicago. Second largest U.S. city, a port of entry and the county seat of Cook county, Ill., Chicago lies at the southwest corner of Lake Michigan. Its population in the 1950 census was 3,620,962, an increase of 6.6% over the 1940 population. For the six-county Chicago metropolitan area, the census for 1950 showed 5,495,364, a 13.9% increase. The mayor in 1952 was Martin H. Kennelly.

Employment rose to an all-time high and unemployment dropped to a low level during the year. Production for defense purposes expanded, partly through a shift from manufacture of civilian goods and partly through the use of new facilities and additions to the labour force.

Bank clearings for the first nine months of 1952 declined 1.0% to \$33,093,761,000 from \$33,405,760,000 in the same period of 1951. New investment in industrial plants for the first nine months of 1952 amounted to \$167,253,000 compared with \$266,378,000 for the same period of 1951.

Because of the nation-wide steel strike in June and July, it appeared that industrial production in the Chicago metropolitan area in 1952 would not come up to the 1951 peak, which was in excess of \$17,000,000,000. Steel production in the Chicago metropolitan area, second only to that of Pittsburgh, Pa., amounted to 11,015,300 net tons in the first nine months of 1952. In the

same period in 1951, Chicago area steel mills produced 14,147,300 net tons. As a result of the steel strike, the year's total would not come close to breaking the 1951 record of nearly 19,000,000 net tons.

Retail sales in 1952 were estimated at \$4,800,000,000, the same figure as was recorded in 1951. Chicago continued to be the world's largest centre of rail and air traffic.

Passengers carried on the lines of the Chicago Transit authority continued to decline. The total number carried in the first eight months of 1952 was 451,264,286, a decline of 9.6% from 498,205,829 passengers carried in the same period of 1951.

All types of construction contracts awarded in the first eight months of 1952 involved an outlay of \$346,161,000, a decline of 7.1% from the first eight months of 1951, when similar expenditures amounted to \$372,855,000.

In the first nine months of 1952, permits for the building of individual homes in Chicago totalled 5,378; in suburban towns, 13,830; and in unincorporated areas, 3,983—a total of 23,191. At the same time, 2,792 apartment units were constructed within the city limits, 791 apartment units in the suburbs and 12 apartment units in unincorporated areas, for a grand total of 26,786 dwelling units in the period.

The total public assistance burden in Cook county for the first eight months of 1952 approximated \$46,908,568, with an average of 132,104 persons on relief rolls throughout the year. The average monthly allowance per person obtaining some form of assistance in Cook county was down to \$44.39.

The 1952 total budgets of the six governments that cover Chicago in whole or in part follow: city of Chicago, \$326,502,975; Cook county, \$72,183,779; Cook county forest preserve, \$5,596,192; Chicago board of education, \$274,838,905; Chicago sanitary district, \$29,281,347; and the Chicago park district, \$40,487,805.

The Republican and Democratic parties both held their national conventions in Chicago in 1952.

(L. LN.)

Child Labour. United States.—According to estimates of the bureau of the census, an average of nearly 2,500,000 youth 14 through 17 years of age were employed in the 12-month period ending June 1952. Of these, 822,000 were 14 or 15 years of age, of whom about 85% were in school and working outside school hours; 1,616,000 were 16 or 17 years old, 60% of whom were also attending school.

The necessity for conserving manpower had stimulated interest in standards for employment of young people, in their need for education and in problems of school dropouts. The U.S. department of labour, with the aid of its Advisory Committee on Young Workers and suggestions from the Committee on Manpower Policy of the Office of Defense Mobilization, issued a national policy on employment of school-age youth. This policy emphasized the importance of education, guidance, job supervision and training as a basis for encouraging all youth to develop fully their abilities. The Interdepartmental Committee on Children and Youth, representative of the government, issued a report "Youth—The Nation's Richest Resource," which described ways in which youth are helped to secure the kind of education and employment opportunities that prepare them for adult responsibilities. A bureau of labour standards bulletin, "After Teen-Agers Quit School," describing selected community programs which help young people with their vocational adjustments, was issued for use by counsellors and others concerned with the problem of high-school dropouts. In most states there were joint arrangements between high schools and the local offices of the state employment service co-operating with the bureau of employment security to provide vocational guidance. It was estimated that about 300,000 high-school graduates and

dropouts for the school year 1951-52 were tested and counselled or placed by local public employment services.

Advances in protecting the welfare of children employed in agriculture were stimulated by administration of the strengthened child-labour provisions of the federal Fair Labor Standards act which established a minimum age of 16 for work during school hours on farms where the products go into interstate commerce. Both government agencies and private organizations were active in spreading understanding of this provision, particularly as it applied to children of migratory agricultural workers. A subcommittee of the senate committee on labour and public welfare held extensive hearings on the report of the president's Commission on Migratory Farm Labor and recommended remedial legislation.

Very little child labour or school-attendance legislation was enacted in 1952. Kentucky amended its law to provide that children 14 and 15 years of age may work during regular school hours if the school authorities make arrangements for them to attend school at other hours. The amendment further provides that minors between 16 and 18 years of age may be employed in certain hazardous occupations under a written apprenticeship agreement approved by the State Apprenticeship council. Kentucky also extended its minimum school term from seven to nine months. A Massachusetts act extended until July 1, 1953, the authority of the commissioner of labour and industries to suspend any provision regulating the employment of women and minors, in the event of an emergency, or a condition of hardship in an industry or establishment.

Great Britain.—As of May 1951, 1,363,000 persons 15 through 17 years of age and 849,000 18- and 19-year-olds were employed. These two groups of young workers made up about 11% of the total labour force. The Youth Employment service made special efforts to help youth leaving school get the right training, find the right job and make good vocational adjustments.

Growing interest of employers in education of their young workers was indicated by an increase of about 10% in 1951 in the number released to attend classes held during working hours, compared with 1949-50.

As in prior years, temporary aid of older pupils in school was needed in the harvesting of agricultural crops. A memorandum sent by the ministry of education to local education authorities in April 1952 specified the minimum wages which should be paid to such workers and pointed out the desirability of good supervision.

Other Countries.—At its general session in Geneva, Switz., June 1952, the International Labour conference adopted a resolution concerning employment of young persons underground in coal mines. This resolution embodied standards as to minimum age, medical examinations, vocational training and guidance, night work and inspection services, and proposed further study by the Coal Mines committee of social welfare developments affecting these workers.

Another resolution recommended that the specific question of minimum age for admission to work underground in coal mines be placed on the agenda of the 1953 conference for second discussion.

Guatemala ratified four I.L.O. conventions affecting employment of persons under 18 years of age in industrial or in non-industrial occupations: no. 77 and 78 requiring medical examinations and no. 79 and 90 prohibiting night work. Cuba also ratified convention no. 90.

(E. S. J.)

Children's Books. With nearly 1,000 new children's books published in the United States in 1952, the task of selection proved challenging. Generally the books

were gay with colour, sparkling with wit and humour, imaginative and satisfying both from the standpoint of information and leisure-time enjoyment. Numerous new publisher's series as: *The First Book of—* (Watts), *Science Fiction* (Winston), *American Heritage* (Aladdin), *Makers of America* (Abingdon) and *Signature Books* (Grosset) joined already established series.

In picture books, *Puss in Boots*, newly illustrated and translated by Marcia Brown, proved delightful; alphabet books, as *A for the Ark* by Roger Duvoisin and *Ape in a Cape* by Fritz Eichenberg produced chuckles. Several well-known author-illustrators had new books, as Robert McCloskey with *One Morning in Maine*, Françoise Seignobosc with *Small-Trot* and H. A. Rey with *Curious George Rides a Bike*; the Caldecott award winner, Nicolas Mordvinoff, illustrated a cowboy story *Even Steven* (by William Lipkind) and Virginia Burton's *Maybelle the Cable Car* was entrancing and nostalgic. *Five Little Monkeys* introduced a new artist, Juliet Kepes, and the famous English cartoonist Rowland Emmet immortalized a rusty old railroad engine in *New World for Nellie*.

A little book which amused adults was *A Hole is to Dig* by Ruth Krauss, illustrated by Maurice Sendak.

Fantasy was of high calibre; two dragon stories appeared, one, *The Wonderful Adventures of Ting Ling* by Vernon Bowen, the other, *Richard Brown and the Dragon* by Robert Bright being inspired by a Mark Twain anecdote. A pig (Wilbur) and a spider were the heroes of *Charlotte's Web* by the inimitable E. B. White; nonsense and originality characterized *The Shouting Duke* by John Reese and *The Magic Currant Bun* by John Symonds. *Dr. Dolittle's Puddleby Adventures* (Hugh Lofting) and *Mary Poppins in the Park* (Pamela Travers) continued the adventures of old favourites.

Babette Deutsch and Avrahm Yarmolinsky collected ten stories of central Asia in their *Tales of Faraway Folk*. American humour of the tall tale variety, was found in Le Grand Henderson's *When the Mississippi Was Wild* (Mike Fink), Anne Malcolmson and D. J. McCormick's *Mister Stormalong* and Ray Wood's collected *Fun in American Folk Rhymes*. Traditional literature was enriched by Dorothy Hosford's *Thunder of the Gods* (Norse myths), by Olivia Coolidge's *The Trojan War* and by Barbara Picard's the *Odyssey* of Homer.

Among books for the eight- and nine-year-olds were *The Bears on Hemlock Mountain* by Alice Dalgliesh, Clyde Bulla's *Johnny Hong of Chinatown* and Maria Leach's *The Turn-Spit Dog*. *Henry and Beezus* by Beverly Cleary continued the anecdotes of Henry Huggins, and two new heroes were introduced in *That Boy Johnny!* by Evelyn Sickels and *Billy Had a System* by Marion Holland. Animal stories for this age were popular, especially Emma Brock's *Kristie's Buttercup* (calf) and *Come, Chucky, Come* (woodchuck) by Dorothea Snow, while Ruthven Todd's *Space Cat* was a hilarious account of a stratosphere adventure.

The D'Aulaires gave young readers an exciting, profusely illustrated biography of *Buffalo Bill*, Margaret Bell introduced *Kit Carson, Mountain Man* and Ronald Syme wrote dramatically of *Columbus, Finder of the New World*. An interest in nature was met with Harriet Huntington's *Let's Go to the Brook*, Herbert Zim wrote fascinatingly of *Alligators and Crocodiles* and *Lightning and Thunder*, and Herman and Nina Schneider produced a scientifically sound picture book, *Follow the Sunset*, while conservation was the theme of Irma Webber's *Thanks to Trees*. A simple physiology book for the six- to ten-year-old was *What's Inside of Me?* by Herbert Zim. Two appealing stories of other lands were *Elle Kari* (Lapland) by Elly Jannes and illustrated by Anna Riwkin-Brick and *Maui's Summer* (Hawaiian Islands) by Arnold Bare.

Girls of ten to twelve became interested in *Dogs in the Family*,



CHILDREN'S ILLUSTRATIONS for stories by Hans Christian Andersen, painted by students of New York city schools in 1952. Left: the jail scene from "The Tinder Box," by Gail, aged 11; right: illustration for "The Steadfast Tin Soldier," by Barbara, aged 13

a kennel operation story by Florence Musgrave, in *Crissy at the Wheel*, about the early days of automobiling, by Mildred Lawrence, and in *Tomboy Row*, another Rowena Carey story, by Ruth Holberg. Stories with a foreign setting varied from *Treasure Trove of the Sun* by Mikhail Prishvin and Ann Weil's *Red Sails to Capri*, to the English story *Picture Come True* by Priscilla Warner. For younger readers there was Ann Clark's *Looking-for-Something* (Ecuador) and *The Vanilla Village* (Mexico) of Priscilla Carden, while *Boy with a Harpoon* (Alaska) by the anthropologist William Lipkind and the poignant *Twenty and Ten; as Told by Janet Joly* (France, World War II) by Claire Bishop proved satisfying to the older reader. The foreign born, adjusting to America, were understandingly portrayed in *Joe-Pole, New American* (a D.P.) by Florence Hayes, in *Everybody's Island* (Puerto Ricans in New York city) by Amy Lillie and in *Zuska of the Burning Hills* (Czechoslovaks in West Virginia) by Alvena Seckar.

Several books concerned boys and baseball, one being *Monkey Shines* by Earl Miers; an amusing tale was *The Boy Who Stole the Elephant* by Julilly Kohler; Leon Wilson continued his saga of Cody Capshaw in *This Boy Cody and His Friends* and Elizabeth Yates wrote sympathetically of a boy growing up, in *Place for Peter*.

Historical stories were varied—15th-century England was *The Song of the Thrush* by Katherine Eyre, the Battle of Santa Cruz (17th century) was the theme of *Blow the Man Down* by Elfrida Vipont Foulds while the time of Henry VIII was *The Armourer's House* by Rosemary Sutcliff. *The Wilderness River* of M. I. Ross concerned the Hudson's Bay company, *The Fish Hawk's Nest* of Stephen Meader was about

smugglers, *The Golden Trail* by Margery Evernden was of the founding of San Francisco, Helen Fernald wrote of Kansas in *Plow the Dew Under* and *Joel; a Novel of Young America* by Nora Benjamin concerned the American revolution from the standpoint of a Jewish boy. *Jareb* by Miriam Powell was laid in Georgia, *Thunderbird Pass* by Adrienne Jones was in the high Sierras and Wyoming served as a background for the mystery *Rim-Rocked* by E. D. Myatt. Two horse stories were *Pat's Harmony* by Page Cooper and *The Lonesome Sorrel* by Keith Robertson.

Older girls enjoyed reading about a girl stowaway in *Where Away?* by Anne Molloy; the War of 1812 and young romance featured in *Candle in the Night* by Elizabeth Howard Mizner; character development was evident in *The Wind Blows Free* (Texas Panhandle) by Loula Erdman; the daughter of Jairus was the heroine of *Tamar* by Gladys Malvern, and *Slipper under Glass* by J. A. L. Hyndham concerned the disciplines of ballet training.

Notable biographies for mature readers were *Ralph J. Bunche: Fighter for Peace* by J. Alvin Kugelmass, *Leonardo da Vinci* by Elizabeth Ripley and *Thomas Jefferson; Champion of the People* by Clara Judson. An absorbing account of the Barents expedition was the translation of Kurt Schmeltzer's *The Long Arctic Night*. Varied interests were represented by Jean Slaughter's *Horsemanship for Beginners*, Jeanette Zarchy's *Sewing*, Herman and Nina Schneider's *Rocks, Rivers and the Changing Earth* and *Magic* by Alexander van Rensselaer. A new anthology of poetry was Louis Untermeyer's *The Magic Circle. The Story of India* by Jean Bothwell and *Made in Mexico* by Patricia Ross also proved interesting.

A Garden We Planted Together was an account of the United Nations, intended for primary grades, while *A Fair World for All* was a graphic treatment of the Declaration of

Human Rights, for older children, by Dorothea Fisher, Love of the out-of-doors was evident in Harry Zarchy's *Let's Fish*; Rutherford Montgomery told of *Wapiti, the Elk*; John and Jean George observed the ways of *Meph, the Pet Skunk*; and *Burglar in the Treetops* by George Heinold was a wryly humorous reporting of the ways of common wild animals.

Teachers and librarians found Winifred Ward's *Stories to Dramatize* helpful, also Eloise Ramsey's bibliography, *Folklore for Children and Young People*. The true Christmas spirit was best represented in Frances Frost's adaptation of Menotti's opera *Amahl and the Night Visitors*. (See also BOOK PUBLISHING; LITERARY PRIZES.) (E. A. Gs.)

Great Britain.—Important contributions to the bibliography of children's literature were the Library association's *Books for Young People . . . Under Eleven*, edited by Hilda M. McGill and the British Council's *20th Century Children's Books*, a concise, illustrated survey by Frank Eyre.

Boys enjoyed several convincing scientific fantasies, including *The Death of Metal* by Donald Suddaby; *Dark Atlantis* by David Craigie; *The Perilous Descent* by Bruce Carter and *Lode-star* by Franklyn M. Branley. African boyhood was described in *Ambari* by R. Forbes-Watson and Australian boyhood in *Turkey* by Ray Harris; British police work in *Bill Brown, C.I.D.* by Alan Brock and pranks of village lads in *Our Exploits at West Poley* by the novelist Thomas Hardy, published for the first time in England in book form.

Vivid portrayal of character and incident recreated the past in several stories, including *Redcap Runs Away* by Rhoda Power and *Brother Dusty-Feet* by Rosemary Sutcliff (14th- and 16th-century England respectively). *The Gentle Falcon* by Lorna Lewis, portrayed the child queen of Richard II. Ancient Athens was depicted in *The Crown of Violet* by Geoffrey Trease. *Eagle's Glen* by E. W. Betenson, *The Golden Quest* by Frank Crisp and *Young Harry Tremayne* by Roland Pertwee were forceful adventure stories in period settings.

Companions of Fortune, a boys' story by René Guillot, and *The Wonderful Farm*, an animal fantasy by Marcel Aymé, were finely imaginative translations from the French.

The Fairy Caravan, by Beatrix Potter, published in America in 1929, appeared in its first general edition in England. Children fond of fantasy also read *Mary Poppins in the Park*, by P. L. Travers; *The Borrowers*, by Mary Norton; *Wanderlust: Voyage of a Little White Monkey*, by Richard Armstrong and *The Voyage of the Dawn Treader*, an allegory by C. S. Lewis.

Talented picture stories included *Orlando: a Seaside Holiday* and *Manda* by Kathleen Hale, *The Little Horse Bus* by Graham Greene, and Rowland Emmet's whimsical *Nellie Comes Home*.

Girls appreciated *Barbie*, a perceptive study of a young musician by Kitty Barne, and the topicality of Pamela Brown's *The Television Twins*.

There was fun and adventure in *The Hop Dog* by Nora Lavrin and Molly Thorp, good narrative in *Hidden in a Dream* by Monica Edwards and a glimpse of stage school in *On Stage, Please* by Joan Selby-Lowndes.

The Boy at the Swinging Lantern was an Irish story of originality by Patricia Lynch and *Smoky Joe* by Laurence Meynell an amusing cat study.

The Ballad of the Kon-Tiki and *Belinda and the Swans* by Ian Serrailier and *The Blackbird in the Lilac* by James Reeve and Edward Ardizzone were notable contributions to children's poetry. Eve Garnett illustrated her verse anthology *A Book of the Seasons*.

Informative books included *The Story of the Book* by Agnes Allen; *Alice in Music-Land* by Ernest La Prade and *Exploring Old Buildings* by Evelyn V. Clark. Biographical works were numerous but not always successful. They ranged from studies of

scientists in Egon Larsen's *Men Who Have Changed the World* and Laurence Meynell's *Builder and Dreamer* (a life of Brunel) to *The Story of William the Conqueror*, by Dorothy Margaret Stuart. (D. D. Ct.)

Child Welfare. **International Services.**—The several agencies of the United Nations providing services to children advanced substantially their world-wide activities during 1952.

The U.N. International Children's Emergency fund (U.N.I.C.E.F.) sustained extensive programs under its own auspices or in co-operation with the Food and Agricultural organization (F.A.O.) or the World Health organization (W.H.O.), in all cases working with government agencies in the countries assisted. It allocated \$14,013,000 for its 1952 program and anticipated a budget in excess of \$15,000,000 for 1953.

The major types of U.N.I.C.E.F. assistance were: general maternal and child health services; BCG (Bacillus-Calmette Guérin) vaccination and other tuberculosis control measures; campaigns against bejel, syphilis and yaws; antimalaria and other insect control measures; immunization against diphtheria and whooping cough; aid in production of antibiotics and insecticides; child feeding; milk conservation; and clothing, shoes, shelter and miscellaneous supplies. Dried skim milk was provided in large quantities in several underdeveloped countries where serious nutritional deficiency prevailed among children. Most of the resources of this organization were used, however, in the development of elementary health and welfare services. In contrast with its tremendous emergency feeding programs during the first years of the fund's existence, the emphasis in 1952 was on long-range projects whereby countries could lay a basis for more adequate feeding of their own children and for reducing illness and death among children.



FRENCH INSTRUCTOR teaching a nurse on fellowship the methods of re-adjusting children suffering from vasomotor disturbances. The International Children's centre in Paris co-operated with U.N. agencies in 1952 to offer advanced courses to child health and welfare specialists

The W.H.O. held its fifth World Health assembly in Geneva, Switz., May 5 to 22, 1952. The assembly adopted a 1953 budget for the W.H.O. of \$8,485,095, a substantial increase over the budget for 1952. This organization had 79 nations as full members and 3 as associate members.

The first four years of the W.H.O. saw unprecedented reductions in death rates in many countries and even greater reductions in rates of morbidity, with children the beneficiaries of the forces at work. Control of the most deadly communicable diseases was greatly advanced; increased production of food was assured as was the protection of food and water through public health measures. In all continents where malaria, plague, syphilis, trachoma, tuberculosis, typhoid fever, typhus and yellow fever traditionally had been prevalent, progress was made.

During a period of about one year ending in the summer of 1952, tests for tuberculosis were given to 7,255,122 and of those tested 3,512,761 were vaccinated. These were in addition to the 29,000,000 children and young adults tested in 12 countries and the 14,000,000 vaccinated during the international campaign conducted prior to June 1951 by U.N.I.C.E.F., Danish and Swedish Red Cross societies, Norwegian Relief for Europe and W.H.O.

Typical of W.H.O. activities was a seminar on mental health and infant development held in Chichester, Eng., in the summer of 1952, attended by doctors, nurses and social workers from 28 countries and territories. Another project reflecting a growing interest in W.H.O. in mental hygiene was a conference of experts on mental health aspects of adoption, held at U.N. headquarters in New York in September. Questions considered by this meeting included: What are the factors relating to the emotional and psychological development of the child that should be taken into consideration in the adoption process? What are the factors that relate to the emotional needs of the adoptive parents that should be taken into consideration? What factors should be considered that relate to the emotional needs of the natural mother who decides to relinquish her child?

Child welfare organizations throughout the world, government officials and representatives of various specialized agencies of the U.N. became aware in 1952 and preceding years of the need for many more workers than had been available in all of the professions serving children. Educators, religious workers, nurses, physicians (including pediatricians, public health practitioners and psychiatrists), psychologists, recreation leaders and social workers had been hard to find when international or local programs in behalf of children had been developed. Consequently the recruitment and training of workers in these and other professions had become major objectives in social planning. Scholarships and fellowships were made available under the auspices of governmental, international, religious and other voluntary agencies and foundations. Interchange of professional students and teachers in professional schools helped to make more universal than ever before the policies, practices and techniques of child welfare workers. Much of this building for the future was made possible by the Technical Assistance administration of the U.N. New professional schools were established. The All-India Institute of Health and Public Hygiene in Calcutta was an example of recently developed and expanded facilities for professional training. Beginning in July 1953 this institute was to offer postgraduate training for public health nurses and maternal and child health doctors. In Latin America the Institute of Inter-American Affairs, the Rockefeller foundation and the Institute of Nutrition for Central America and Panama joined in co-operative projects in which the training of work-



ENGLISH SCHOOLBOY reading one of the U.S. comic books which continued to find a growing market in England in 1952, despite protests from parents and educators

ers was an essential element.

International services on behalf of children and adults were seriously curtailed with the discontinuance in 1950 of the International Refugee organization (I.R.O.). By 1952 the governments of several countries had liberalized their laws and made other provisions facilitating emigration of refugees. Assisting in this development was the U.N. high commissioner for services to refugees, successor to the I.R.O.

International conferences in 1952 significant to the welfare of children included the three under auspices of the U.N., previously noted; the International Council for Exceptional Children, Philadelphia, Pa., April 30 to May 3; and the World Assembly of Youth, Dakar, Senegal, Fr.W.Af., July 28 to Aug. 10.

National Developments.—Ravages of war in Korea deprived the children of that country of many of the limited facilities available in times of peace. Relief efforts which would have brought to South Korea food, clothing, medical supplies and services from several countries under many auspices, were regulated in an effort of the U.N. military command to avoid confusion and duplications of services.

The United Nations Korea Reconstruction agency with headquarters in Pusan, Korea, provided a channel for all civilian relief.

Countries which a decade previously witnessed the killing, maiming and acute deprivation of children as a result of bombing attacks and other military actions were finding ways and means of reconstruction, in behalf of children and their families. Construction of dwellings, schools and hospitals was substantially greater than in 1951. Greece made great gains,

using the resources of the country as well as extensive aid from the United States. Among the hopeful developments was an increase in the number of women in professional services to children, especially in teaching, nursing and the practice of medicine. Women physicians in that country, who numbered about 300, still were restricted in their opportunities as professional workers but the demands for their services, especially in public health, pediatrics and general medicine marked departure from traditions which in this and most countries still kept women ignorant and children neglected.

Iran, the second largest country in the eastern Mediterranean area, confronted serious nutritional and general health problems and an exceedingly high rate of infant mortality. A study by the Rockefeller foundation in a rural area near Tehran showed that 230 out of 1,000 infants died during the first year of life.

In Africa, Asia and the islands of the Pacific mortality of children, though remaining high, was reduced to the extent that international and national authorities were becoming alarmed at increases in population out of proportion to the increases in food production. This subject, which received some discussion at the 1952 World Health assembly, but without majority support of measures for study of population problems, was to be reconsidered by various societies and agencies concerned with child welfare.

The population increase in the United States reflected by both a reduced mortality rate among young children and a higher birth rate than had been anticipated by health authorities was sufficient to overcrowd child care facilities, family housing units, hospitals and schools. This problem led the 81st congress to direct that a nation-wide survey of elementary and secondary schools be made. The survey included an extensive inventory of existing public-school facilities; a study of the current need for new construction; an estimate of the availability of state and local resources to finance needed new construction; and the development of a ten-year master plan for school plant construction and improvement. A progress report of the survey, published in 1952, with data from 25 states, rated 44% of the elementary schools as unsatisfactory, and many of these as well as the schools rated fair and satisfactory were seriously overcrowded.

Aid to dependent children, like most forms of federal social security, showed a marked drop in the number of recipients compared with the numbers in recent years. For the month of June in 1951 and 1952 the number of children thus aided was (1951) 1,617,893 and (1952) 1,527,375. The number of families dropped from (1951) 632,649 to (1952) 589,976. This apparently reflected improvements in employment, family incomes and standards of living.

The tendency to establish state youth authorities, a development of postwar years, was reflected in the passage of the Kentucky Youth Authority act, to become fully effective Jan. 1, 1953. Features of this law were vestiture in a central state unit responsibility for commitment of young people to state training schools and extension of the juvenile court age for boys from the 17th to the 18th birthday, the age for girls subject to juvenile court jurisdiction remaining at the 18th birthday. There, as in other states with or without youth authority acts, there was an inclination by court officials and those in charge of institutions to utilize as never before the services of psychiatrists and social workers, including professional group workers, in efforts to understand the problems of children and youth and give them the treatment and training for which such services reveal need.

Among state organizations most active in following up the findings of the Midcentury White House Conference on Chil-

dren and Youth was the Pennsylvania Governor's Committee on Children and Youth, which held hearings on unmet need of dependent and neglected children in 12 communities.

Health services throughout the country were improved. Typical of change in recent years was the increase in the number of cities adding sodium fluoride to their water supplies in an effort to reduce tooth decay in children. In 1950 the number of cities was 50, in 1951 it was 121, and 138 additional cities had approved this program.

The Child Welfare League of America in 1952 completed two-year study of residential treatment centres for emotionally disturbed children. The development of such centres during the last 20 years helped change the focus of the care of children whose own homes are unsatisfactory or unavailable to them. Such improved study of behaviour and the treatment provided by progressive child care agencies and institutions had become marked by teamwork among professional workers whose combined efforts had done much to reduce juvenile delinquency and emotional distress among children. (See also BIRTH STATISTICS; CHILD LABOUR; JUVENILE DELINQUENCY MARRIAGE AND DIVORCE; RED CROSS; SOCIAL SECURITY WORLD HEALTH ORGANIZATION.)

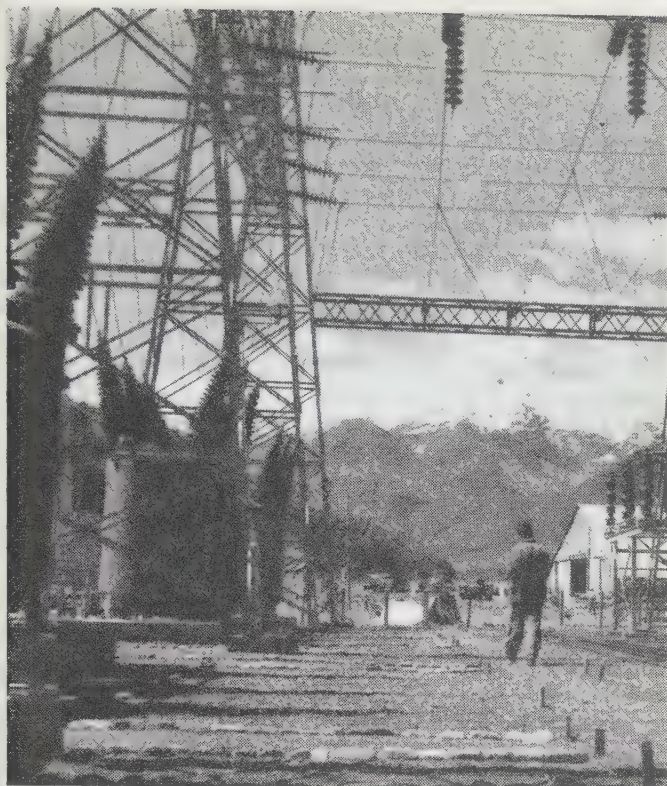
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Chile. A republic extending along the southern Pacific coast of South America for about 2,600 mi., Chile has an average width of 110 mi. It is bounded on the north by Peru on the south by the Antarctic ocean, on the east by Bolivia and Argentina and on the west by the Pacific ocean. It has an area of 286,323 sq.mi. and a population of 6,032,376 (Apr. 1952 census). Santiago, the capital, including suburbs has 1,412,941 inhabitants (Apr. 1952 census). Other leading cities of more than 50,000 are Valparaíso with 222,238 inhabitants, Viña del Mar (88,196), Concepción (133,573), Antofagasta (72,838), Talca (63,602), Temuco (90,957), Osorno (75,151), Chillán (67,311) and Talcahuano (63,133). Religion: Christian, mainly Roman Catholic. Presidents in 1952: Gabriel González Videla after Nov. 3, Gen. Carlos Ibañez del Campo.

History.—During 1952 Chile continued to suffer from high prices, uncontrolled inflation, and difficulties in its world markets abroad. Its political life took a sharp turn to the right as a result of its presidential election.

There were several sporadic strikes during the year. In March more than 12,000 workers went on strike in the nitrate fields of Antofagasta and Tarapaca. They demanded a 40% increase in wages and better working conditions. There were several outbreaks of violence and a dynamiting attempt in the important nitrate deposits of Maria Elena. The strike was settled by the labour minister, Alejandro Serani Burgos, who offered a 16% wage increase.

Plans were intensified to increase steel and oil production. During 1951 the United States bought \$4,000,000 worth of steel from Chile and \$3,000,000 worth was sold to Argentina. M. V. Kellogg Co., a New York firm, contracted to build an oil refinery near Valparaíso with a producing capacity of 870,000 metric tons per year. This firm was also to take over the management of the over-all production and exploitation of oil deposits in southern Chile. The government made it clear, however, that it was not relinquishing ownership of its mineral wealth.



CHILEAN HYDROELECTRIC STATION harnessing water power from the Andes mountains (background) to power a new steel plant at Huachipato; it was one of six power plants being built in 1952 as part of a huge industrialization program in Chile

Early in the year relations with Argentina were somewhat strained and as a result the border between the two countries was closed, causing some food shortages in two Chilean towns located in the department of Aysén. Relations with the United States remained cordial and in April a mutual military aid agreement was signed between the two countries. The United States was to furnish technical and material aid to Chilean defenses which in turn would strengthen hemisphere unity.

The presidential elections held in September showed that Gen. Carlos Ibañez del Campo, a member of the senate who had been deposed as president in 1931 for his authoritarian methods, who was running as the candidate of the National Peoples Alliance, had a plurality of the vote with 432,930 ballots. Arturo Matte Larraín, former minister of finance, candidate of a coalition of rightist groups, polled the next largest number of votes with 252,648. The government candidate, Pedro Enrique Alfonso, former minister of interior, running on the Radical party ticket, received 183,783 votes. Sen. Salvador Allende, former minister of health, Socialist candidate running with left-wing support, received 51,984 votes. No candidate received an absolute majority, required under the constitution for election. The final election was up to congress, which on Oct. 24 named Ibañez president. He was inaugurated on Nov. 3.

(J. McAd.)

Education.—In 1948 the public primary schools had 518,446 pupils and the private and municipal primary schools 149,802 pupils. Secondary schools had 70,622 pupils. University education was available at the state university of Chile (5,287 students), the Catholic university of Santiago (1,528 students) and the University of Concepción. In 1951 there were 410 motion-picture theatres with seating capacity of 300,000.

Finance.—The monetary unit is the peso, valued at \$0.0070 U.S. currency, free market rate, on Sept. 30, 1952. The rate for imports into Chile was \$0.0166 (provisional commercial), \$0.0322 (official), \$0.0232 (banking market), \$0.02 (special commercial) or the free market rate, depending upon their relative importance to the economy. The 1953 budget, as submitted to congress, balanced revenue and expenditure at 42,377,000,000 pesos (1952 as enacted: 29,073,000,000 pesos). Actual revenue in 1951 was 26,008,000,000 pesos; expenditure, 27,640,000,000 pesos. Notes and coin in circulation on June 30, 1952, totalled 9,290,000,000 pesos; gold reserve \$41,500,000; sight and current deposits 20,090,000,000 pesos;

time deposits 6,040,000,000 pesos; government deposits 2,750,000,000 pesos. The cost of living index stood at 211 in July 1952 (1948=100).

Trade and Communications.—Exports in 1951 (excluding gold) amounted to \$371,000,000; imports were \$329,000,000. Leading exports were copper (48%), nitrate of soda (18%), metallurgical products, largely iron and steel (9%) and wool (6%); leading imports, machinery (18%), chemicals and drugs (16%), vehicles (11%), sugar and derivatives (6%) and petroleum and products (6%). Chief customers were the U.S. (51%), Argentina (7%), the United Kingdom (6%), Germany (4%) and France (4%); chief suppliers, the U.S. (55%), Argentina (8%), the United Kingdom (7%), Germany (5%) and Peru (4%).

The railway system totalled 5,434 mi. in 1949, of which 3,859 mi. were owned by the government. Highways (Dec. 31, 1947) included 1,785 mi. of international highway, 3,815 mi. of national highway and 26,300 mi. of provincial roads. Motor vehicles (Dec. 31, 1950) included 40,098 automobiles, 27,507 trucks and 4,164 buses. According to *Lloyd's Register of Shipping*, the merchant marine had 85 vessels (100 tons and over) aggregating 168,349 gross tons on June 30, 1951.

Agriculture.—Production of the principal crops in the crop year 1951-52 was estimated as follows (in metric tons): wheat 988,000; barley 125,000; oats 110,000; rice (paddy) 80,000; beans 64,000; maize 89,000; and potatoes 473,000. Livestock included (1951) 2,186,000 cattle, (1949) 585,000 pigs, 636,000 goats and 6,345,000 sheep. Wool production averages 17,000 short tons a year, lumber production about 275,000,000 bd.ft. a year and landings of fish (including shellfish) about 70,000 short tons.

Manufactures.—Manufacturing establishments were reported to number 5,585 in 1948, with capital of 1,466,587,000 pesos and 296,000 employees. There were about 375 textile mills in 1950, including 43 cotton mills, 220 knitting mills and 46 silk and rayon mills. Production figures (1951) included steel 178,318 metric tons; pig iron 239,946 tons; cement 698,403 tons; woven cotton fabrics 43,500,000 yd.; and manufactured gas 142,800,000 cu.m. Chile became an iron and steel exporter for the first time in 1951. The index for manufacturing industries averaged 119 in 1951 (1948=100). Electrical energy is used extensively; production in 1951 was 1,680,000,000 kw.hr.

Mineral Production.—Chile is the leading mineral-producing country in South America. Production in 1951 included copper 379,707 metric tons; coal 2,211,295 tons; iron ore 3,174,338 tons; nitrate of soda 1,684,407 tons; gold 173,642 troy ounces; silver 983,468 oz.; mercury 10,540 lb. Petroleum production on Tierra del Fuego totalled 760,000 bbl. in 1951.

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China. China borders the U.S.S.R. and Outer Mongolia for more than 6,000 mi. on the north and is flanked by Japan on the east and India on the southwest. Including Manchuria and Sinkiang on the mainland, and Formosa (Taiwan) and numerous other islands, it has a total area of 3,876,956 sq.mi. with a population of approximately 475,000,000. After the advent of the Chinese Communists and the flight of the national government to Formosa toward the end of 1949, China was virtually divided into two entities: Communist China on the mainland and the nationalists on Formosa.

The Central People's (Communist) government in Peking, with Mao Tse-tung (*q.v.*) as its chairman, was founded on the ideologies of Marx, Lenin and Stalin and Mao's new democracy, while the national government in Taipei, Formosa, with Chiang Kai-shek (*q.v.*) as its president, was based on Sun Yat-sen's "Three Principles of the People" and the five-power constitutional system.

There were eight cities with more than 1,000,000 population in 1950: Peking, 1,940,290; Shanghai, 5,406,644; Tientsin, 1,785,813; Mukden, 1,551,317; Canton, 1,495,694; Port Arthur, 1,054,466; Chungking, 1,038,683; Nanking, 1,020,000.

History.—The continuation of the fundamental policy of the People's government in aiding North Korea and resisting the United States resulted in 1952 in a still greater and more ruthless control of China's mainland by the Communists. This was aimed at remodelling Chinese society and changing the very nature of the Chinese. Politically, the People's dictatorship under the leadership of the Chinese Communist party, buttressed by the People's Liberation army and militia, People's courts and citizens' security committees, tightened further its grip and allowed no opportunity for any opposition to survive. Economically, after the liquidation of the landlords, the urban middle classes were under attack. Through its expanding network of state trusts, trading companies and co-operatives, the People's government controlled all sectors of the economy on the mainland. On the social front, both the Confucian culture and tradition, with its emphasis on the family system, and

the newer cultural influences of the west were to be eliminated. Western educated persons were particularly exposed to ideological remoulding or a process of "brain-washing." These harsh measures of control alienated the support of a large portion of the population which the Communists had enjoyed during their initial success in overthrowing the nationalists. Many Chinese, especially the overseas groups, swung their support openly to the nationalists in Formosa. However, the Peking government, in its policy of siding with the Soviet Union against the western democracies, appeared to be determined to advance its aspirations and contribute its share to the larger cause of world communism.

The impact of the Korean war and the western embargoes that accompanied it affected the economy of Communist China and led also to a speed-up in the rate of the Communist revolution in both rural and urban areas. On Jan. 5, 1952, a decree was issued enforcing the "triple opposition" movement against corruption, waste and bureaucratism inside the government. In February the collateral "five opposition" movements were introduced under which businessmen had to confess their alleged economic sins and restore to the state such proceeds as they were charged with having accumulated through bribery, tax evasion, fraud, theft of state property and theft of state economic secrets. After about three months of frantic mass confessions, accusations and financial levies, the will and the economic back of the urban middle class appeared to be broken and the Peking government collected a windfall of hard-currency bullion and recoverable foreign exchange estimated at more than U.S. \$200,000,000. In terms of human lives, press reports from Formosa gave the following figures: the total number of persons arrested during the drive amounted to 270,000, of which 30,000 committed suicide, 500 leading merchants and industrialists were put to death, 4,000 were given prison terms of 15 years and 30,000 received sentences of more than 10 years. In June the Peking government declared that the land reform involving expropriation and redistribution of landlords' property had been completed in most of China. In the meantime, the soviet type of state farm had been introduced as a basic model of socialist enterprise. In July a new forced labour decree giving public security bureaus administrative power to put "historical counterrevolutionaries" under control for ideological education and reform was promulgated, and a new program of construction apparently destined to follow the initial three-year rehabilitation program was announced. In August, in a cabinet reorganization which was regarded as a forerunner of a tighter nation-wide development plan geared to the defense program, five new economic ministries were set up.

The negotiations for an armistice in Korea became tortuous and fruitless, as the United Nations negotiators took the position from the beginning that the negotiation was military, while the Chinese and North Korean Communists never lost sight of the disputed fundamental Asiatic political problems. Consequently, in January at the United Nations general assembly meeting, the soviet proposal to shift the truce talks from Korea to the Security council found no support. The unremitting pressure of Communist expansion in the far east compelled the United States to take a firmer attitude in meeting it and brought the United States and the United Kingdom closer in their policies on the far east. In a communiqué issued on Jan. 9 after the conversations between Prime Minister Winston Churchill and Pres. Harry S. Truman in Washington, D.C., they declared that regarding the far east "a broad harmony of view had emerged from these discussions; for we recognize that the overriding need to counter the Communist threat in that area transcends such divergencies as there are in our policies toward China." On Jan. 17 Churchill declared before the U.S. congress

that "I am very glad that whatever diplomatic divergencies there may be from time to time about procedure, you do not allow the Chinese anti-Communists on Formosa to be invaded and massacred from the mainland." Churchill's pronouncement created criticism and opposition in the British parliament and on Jan. 30 he explained to the house of commons that his statement before the United States congress that Britain's response to any breach of a Korean armistice would be "prompt, resolute and effective" meant no shift in the British Asian policy. On Jan. 28 the United States, the United Kingdom and France served notice that they would call for U.N. action to meet any new Communist attack in southeast Asia.

On the next day the political committee of the general assembly found the Soviet Union guilty of having failed to live up to the 1945 treaty of friendship with the national government, which for three years had been trying to get a U.N. verdict against the Soviet Union. On Feb. 1 the general assembly approved the report of its political committee on China's complaint against the Soviet Union by a vote of 25 to 9 with 24 abstentions, including France and the United Kingdom. On Feb. 5 the general assembly decided to postpone any discussion of a permanent settlement of the Korean war until an armistice was reached. In the meantime the truce talks in Korea remained deadlocked on the issues of the building of air bases in North Korea after a truce, the inclusion of the Soviet Union among the neutral nations that would supervise the truce, and the exchange of prisoners. In March, Peking formally charged the United States with germ warfare in Manchuria while Jacob Malik, the soviet representative at the meetings of the United Nations Disarmament commission, accused the United States of using germ warfare in Korea. These charges were denied by the United States authorities, and T. F. Tsiang, Chinese delegate on the commission, stated that the Communists had invented germ warfare to cover up epidemics caused by their own mismanagement. To break the deadlock in truce negotiations, Vice Adm. C. Turner Joy presented on April 28 on behalf of the United Nations a "package formula" for settlement of the issues. But the Communists rejected voluntary repatriation of prisoners, on which point the United Nations delegates held firm.

A new phase of the Korean war was opened when the United Nations forces began to launch intensive bombing attacks on hydroelectric power plants in the Yalu river district and other parts of North Korea in June. On June 28 Peking charged that the bombing of the Yalu power stations was a further provocation to wreck the Korean armistice negotiations and to undermine peace in Asia.

To implement and broaden Soviet-Chinese relations and to co-ordinate their efforts in their struggle against the west, high officials from Peking headed by Premier and Foreign Minister Chou En-lai arrived in Moscow on Aug. 17 for talks with the soviet leaders on important questions, including the Korean war and Peking's role, the status of the Chinese Changchun railway, Dairen and Port Arthur, relations with Japan, and soviet aid to China's construction and military modernization program. On his return to Peking on Sept. 24, Chou declared that a broad understanding and new agreements had been reached and that Chinese-Soviet relations had been further strengthened.

No diplomatic relations between Peking and London had been established since Britain conveyed its decision to recognize Peking in Jan. 1950. Following a riot in Hong Kong on March 1 in which a number of Chinese were arrested and injured, Peking lodged a formal protest calling the incident a "barbarous massacre of the local Chinese inhabitants." When the British highest court reversed a Hong Kong supreme court decision awarding 40 former Chinese nationalist transport planes to Peking and ordered that they be turned over to a United States

air line which bought those planes, Peking warned Britain of the consequences. On the other hand Britain, which represented also the interests of the United States and Canada in China, protested in April and September against the mistreatment inflicted on British, Canadian and U.S. nationals arrested and detained in China. Britain's hope to revive its trade, which constituted a major consideration behind British recognition of Peking, was shattered when the British concerns with an investment estimated at more than £2,000,000,000 decided to leave the China mainland in May.

A series of border clashes between Portuguese Macao's garrison and Chinese troops broke out in July, and in August an agreement was reached in settlement of the frontier shooting. In Tibet, troop clashes between the Chinese and Tibetans and agitation against the Chinese were reported. However, an agreement between the Chinese and Tibetan governments was reached in August under which Tibet was to have a permanent representative in Peking to deal with matters affecting Tibet's internal economy and Chinese-Tibetan trade. It was reported in the summer that the negotiations between India and China concerning Indian-Tibetan relations and the recognition of Chinese sovereignty over Tibet reached a satisfactory agreement on fundamentals.

The prolongation of the Korean war and the threat of Communist expansion in southeast Asia coincided with a policy of more definite aid to the national government by the United States. In his message to congress on March 6 asking for more than \$7,000,000,000 for the Mutual Security program, President Truman stated that a large part of this sum would "help prepare the Chinese armies on Formosa to resist aggression." However, the United States policy toward Formosa remained unchanged in so far as allowing and helping the national government's forces to invade the mainland was concerned. This was made clear by Gen. William C. Chase, commander of the U.S. Military Assistance Advisory group in Formosa on May 1, when he stated that although the combat efficiency, morale and physical condition of the Chinese national army had improved considerably, his mission was still one of neutralization. To encourage private U.S. investments in Formosa, a formal exchange of notes on the extension of the U.S. private investments guaranty program to that area took place on June 25.

The position of the national government in signing a separate peace treaty with Japan was of some international significance. In January Japanese Premier Shigeru Yoshida officially revealed to the Japanese diet that he had agreed to a limited recognition of Chiang Kai-shek's regime as the legitimate government of China at the request of the United States, and, consequently, invited the national government to accept the proposal for a treaty of peace with Japan. On Feb. 19 formal discussions on a bilateral agreement between Japan and China opened in Taipei, and after more than two months of devious negotiations a separate treaty of peace between Japan and China was completed on April 27, whereby Japan recognized the national government's jurisdiction over Formosa and other territories which might thereafter be under nationalist control, while China waived its claims for reparation. The separate peace treaty was signed on April 28 in Taipei. (See also COMMUNISM; FORMOSA; KOREAN WAR; UNION OF SOVIET SOCIALIST REPUBLICS.)

Education.—In Communist China, education is a means for social reform and not for the growth of personality, and it is controlled completely by the government. According to this policy, the subtle influence of the "imperialist west" must be eradicated and the English language must be removed entirely from the lower schools. The latest official figures (in 1952) placed the number of schools and their enrolments at the end of 1951 as follows: nearly 250 colleges and universities with 175,000 students; 5,442 secondary schools with more than 2,000,000 students; 541,000 primary schools with more than 43,000,000 pupils accounting for 55% of the total school-age children on the mainland. During 1952, in order to exercise greater control by the government, a number of univer-



PROPAGANDA PHOTOGRAPH (left) captioned as a sample of the "germ bombs" dropped in Korea by "U.S. invaders," as published in the *Peiping People's Daily* in 1952. Right: Fully loaded M1621 cluster adapter bomb holding 22,500 psychological warfare leaflets which, according to the U.S. army, is the type of bomb shown in the picture at left

sities were consolidated, Yenching university, Peking, was closed, and the Tsinghua university, Peking, originally founded on the Boxer indemnity, was reduced to an engineering college.

Defense.—To build up a modern army, navy and air force, Peking launched a large-scale military training and development program in Dec. 1950 and, as a result, Communist China's military forces were regarded in 1952 as stronger and larger than in 1950 when they entered Korea. In the later part of 1952, the size of the regular People's Liberation army was listed at about 3,000,000, in addition to 1,500,000 to 2,000,000 regional and district troops, 600,000 to 1,000,000 public security troops, and about 13,000,000 home guard militia reserve. It was reported that by a secret military pact signed in Oct. 1951, the Soviet Union pledged to help Peking to maintain a regular army at more than 3,000,000 men and that during the fighting in Korea the Soviet Union would give a \$24,000,000 monthly subsidy to the Chinese forces. The Chinese Communist air force was believed to have about 1,800 planes, approximately half of them jet fighters.

About 200,000 out of approximately 600,000 of the total nationalist forces on Formosa were believed to be well trained and equipped. The nationalist air force consisted of about 300 mostly worn-out and obsolete planes and its navy had more than 100 small vessels. About 62% of the budget of the national government was for military expenditures.

Finance.—According to an official report on Aug. 6, 1952, Peking achieved a balanced budget in 1951, and on the same day the People's Government council adopted the 1952 budget, which represented an increase of 41% over the previous year's budget. A private source estimated, Peking's 1950 expenditure at U.S. \$2,400,000,000 and the first half of its 1951 expenditure at more than U.S. \$5,000,000,000. It was believed that Peking's 1952 expenditure must be more than U.S. \$8,000,000,000.

The national government depended largely on the United States aid to balance its budget. In 1952 the official rate of exchange of the Formosan dollar was 15 to U.S. \$1, and the People's bank dollar more than 20,000 to U.S. \$1.

Trade and Communications.—On the mainland, trade was put under complete control by the government and no trade statistics since 1949 were available. Peking claimed that the volume of foreign trade in 1951 increased more than 250% compared with 1950 and that its aggregate value in 1951 was twice that of 1950, "far exceeding the prewar level." Agricultural, livestock and mineral products were the main exports while industrial products and machinery, equipment, and semfinished goods constituted the main imports on the mainland. Peking's trade was confined largely to the Soviet Union and its satellite countries.

Under the People's government, practically all the railway lines had resumed their prewar position. In 1951 the Nanning-Chenankuan railway of about 100 mi. was opened to traffic. In July 1952 the Chengtu-Chungkiang railway of about 300 mi. was completed, and at the end of September the Lunghai railroad was extended to Lanchow. With soviet aid, Peking planned to extend the Lunghai railway to the west to connect it directly with the Turkestan-Siberia railway, to build the Lanchow-Swallow line, and to build a line in Yunnan connecting Kunming with southeast Asia.

Agriculture, Manufactures, Mineral Production.—Production statistics were fragmentary and mainly in percentage figures. Peking claimed that the 1951 agricultural output increased by more than 7% compared with that of 1950, and that it approached the prewar level, which was estimated at an annual average of 140,000,000 tons. According to an official report, the total value of industrial production increased by 267% in 1951, compared with 1950, and the 1952 industrial production would be a bigger increase over 1951. Compared with the figures for 1950, the output of rolled steel in 1951 went up 76%, cement 63%, coal 18% and paper

35%. It was stated that China began to manufacture textile machinery and steel rails in large quantities in 1952. The number of co-operatives on the mainland was said to have reached more than 39,000 with a membership of more than 82,000,000. (H. T. CH.)

Chiropactic: see MEDICINE.

Chou En-lai (1898-), Chinese Communist politician, was born at Huaiyin, Kiangsu province. He attended a Nankai middle school in Tientsin, Waseda university in Japan and Nankai university. In 1919, in Tientsin, he led a student rebellion which resulted in his arrest and imprisonment. In 1924 he joined Sun Yat-sen's movement and was made director of political training at Whampoa Military academy.

During Chiang Kai-shek's anti-Red drive of 1927 Chou was captured but escaped. He visited Moscow (1928-31) and served as a delegate to the sixth congress of the Comintern. In 1937 Chou and Chiang Kai-shek established a united front against Japan. This Nationalist-Communist truce was, however, not durable, and later truces, including one arranged in 1946 by Pres. Harry S. Truman's personal representative, Gen. George C. Marshall, were also of short duration. After the Communists extended their control over most of China in 1949, Chou became prime minister and foreign minister of the new Chinese people's republic. He signed the Sino-Soviet treaty of friendship, alliance and mutual aid in Moscow on Feb. 14, 1950.

In Aug. 1952 Chou headed another Chinese delegation to a conference in Moscow to discuss political and economic questions between the two countries. On Sept. 16 it was announced that control of the Changchun railroad in Manchuria would be turned over to the Chinese by Dec. 31, but that Soviet forces would continue to use Port Arthur until the two countries made peace with Japan.

Christian Science. Continued steady growth throughout the world was reported by the Mother Church, the First Church of Christ, Scientist, in Boston, Mass. Identified with the religion discovered and founded by Mary Baker Eddy, the Mother Church in 1952 had 3,067 branches in the United States and about 40 other countries, and college and university organizations on 116 campuses.

The Christian Science textbook, *Science and Health with Key to the Scriptures*, by Mrs. Eddy, continued to be the best-selling religious textbook with the exception of the Bible. A Dutch translation was published during the year.

Church officials reported that testimonies of Christian Science healing which were on file included those of cancer, deformity, imbecility, poliomyelitis, gallstones, arthritis, heart ailment, nephritis and carious bones and flesh.

Members of the Christian Science board of lectureship were assigned to lecture tours during the year in continental Europe, Great Britain, Africa, Canada, the orient, Ireland, Mexico, South America, Australia, New Zealand, Alaska and the United States.

With continued expansion of the military forces of the United States, 14 Christian Science chaplains were on active duty with troops, 4 of them in Korea. More than 360 civilian camp welfare workers, serving as Christian Science practitioners, were ministering to hospitalized veterans and members of the armed forces.

Relief activities of the Mother Church were both national and international in scope during 1952. Approximately \$200,000 was voluntarily contributed by Christian Scientists to aid sufferers in the Kansas-Missouri valley flood. The overseas relief division of the denomination sent approximately \$46,000 worth of used clothing to its churches in Austria, France, Germany, Great Britain, Indonesia, Italy, the Netherlands, Norway and

Greece, and to individuals in Finland, Korea and Yugoslavia. Food parcels totalling \$13,000 were also sent to these countries.

The denomination provided approximately \$680,000 toward the operation of its three charitable institutions during the year. (T. E. HY.)

Christian Unity. Three processes promote unity among Christ's followers. The first develops fellowship and co-operation. The second finds organized ways of working interdenominationally. The third directly seeks organic union of churches. Historically, the first two have often led to the third. In 1952 progress was made in all three ways by the non-Roman churches.

Increasing consciousness of belonging together was revealed in a constantly multiplying number of events. Examples were: an increasingly wide international observance of World Communion Sunday both overseas and in North America; participation by churches of more than 3,000 North American communities in the launching of the first 1,000,000-copy edition of the Revised Standard Version of the Bible, produced and copyrighted by the National Council of Churches (representing officially more than 30 denominations); the first all-Latin-American conference of Evangelical university students at São Paulo, Braz., under the auspices of the World Student Christian federation; and a remarkably representative study meeting of laymen at Buffalo, N.Y., for the North American Lay Conference on the Christian and his Daily Work, jointly sponsored by the Canadian, the U.S. and the World Council of Churches.

Organized ways of working together were demonstrated in many important events throughout the world. Two agencies of the International Missionary council (175 denominations) and the World Council of Churches (158 denominations) met in Willingen, Ger. These were the joint committee of the two councils and their joint commission of the churches on international affairs. The first handles policy making and general organizational co-operation. The latter deals with such problems as those of dependent peoples, resettlement of stateless persons, and religious liberty. It planned continued representation before governmental bodies and co-operation with cognate United Nations commissions. The World council's department of inter-church aid and service to refugees met to plan its resettlement work, which included the use of funds allocated by the high commissioner of the U.N. for refugees. It reported resettling more than 100,000 persons. Its relief work for the first half of 1952 showed that denominations linked to the National council and World council in the U.S. increased gifts 25% above 1951's record. More than \$3,000,000 worth had been sent to Korea, Greece, India, Lebanon and other centres of crisis.

The International Missionary council held an enlarged meeting in Willingen, Ger., to deal with an over-all examination of the problems and policies of missions. Delegates from 175 denominations in 50 nations including some "iron-curtain" countries attended. The number of foreign missionaries at work from non-Roman churches of North America was at an all-time high of 15,000, compared with the previous high of 13,555 in 1925. Two communion services at Willingen—one Anglican and the other Reformed—welcomed all delegates without distinction.

Various co-operative church undertakings of world-wide scope were furthered at meetings in Denmark of the World council's study commissions as well as by its executive committee. The latter completed at Nykøbing, Den., plans for the recommended program of the second world assembly to be held in Evanston, Ill., in 1954. It allocated 600 seats to 160 member denominations and appointed chairmen for preparatory commissions on evangelism, a responsible society, international affairs, race relations

and the work of the laity. Plans were likewise completed for participation of the churches in the third Christian World Youth conference which was held in December in Kotayam, Travancore, India, with youth attending from the co-operating churches of 56 nations. Sponsors in addition to the World Council of Churches were the World's Young Men's and Young Women's Christian associations, the World Student Christian federation and the World Council of Christian Education.

In their first theological conference the churches related to the Indonesian National council planned a common standard of ministerial training and strengthened their commission on missions. The new International (interdenominational) Christian university was formally opened at Mitaka, near Tokyo, Jap., with 2,000 students applying for 75 places under one faculty. A United Council on Christian Literature for Overseas Chinese was founded in Hong Kong. The (American) United Board for Christian Colleges in China took steps to finance and establish a Christian college in Formosa—10 or 11 of its 13 member union universities in China having been taken over by the Communists. The annual German Evangelical Church congress (*Kirchentag*) took place in Stuttgart. Despite the refusal of east German border passes to 20,000 would-be participants, the meeting was highly representative and provided another evidence of revitalized and spiritually united Protestantism in Germany.

The outstanding church unity event was the third World Conference on Faith and Order, for the first time under World Council of Churches auspices, at Lund, Swed. It continued the work of conferences at Lausanne, Switz., in 1927 and Edinburgh, Scot., in 1937 for the examination of things which divide and things which might unite the churches, 110 Anglican, Orthodox and Protestant denominations being represented. Unofficial Roman Catholic observers were present. The program dealt with the nature of the church, ways of worship and intercommunion. The fact that delegates were sent from all parts of the earth and even from churches in three "iron-curtain" lands evidenced strong concern over unity. The conference had no authority to undertake action for organic union, which was solely the prerogative of autonomous churches acting for themselves. Yet experience had shown that after the two previous similar conferences the rate of organic unions of formerly separated churches was accelerated, more than 40 such mergers having been consummated since the conference at Lausanne in 1927, involving more than 90 denominations. Features of the Lund meeting were: an open communion service in the 11th-century cathedral from which only a few felt compelled to abstain; stress on nontheological factors preventing church union; and participation by delegates from many younger churches in Africa, Asia and Australasia. Many unions had taken place among these and more were reported in process. It was declared at the conference that "the implication of our confessed unity in Christ . . . is that we should do together everything except what irreconcilable differences of sincere conviction compel us to do separately."

Only one organic union actually was consummated in the year (up to October) and that was announced as completed on Jan. 11 when the Restored Evangelical Lutheran church of Holland merged with the Evangelical Lutheran body. A plan for the union of three Presbyterian bodies in the U.S. was announced as being submitted to the general assemblies of all three in 1953. The proposed five-way merger of Lutheran bodies in America seemed nearer consummation. In Australia a special commission completed a new plan for reunion of the Anglican and Protestant churches. In Canada no progress was reported in negotiations between the United church and the Anglicans. (See also RELIGION.) (H. S. LR.)

Chromium and Chromite: see MINERAL AND METAL PRODUCTION AND PRICES.

Chronology: see CALENDAR OF EVENTS, 1952, pages 1-16.

Churchill, Winston Leonard Spencer (1874-), British

statesman, was born at Blenheim palace, Oxfordshire, on Nov. 30. For his biography and political career during World Wars I and II, see *Encyclopædia Britannica*. After the defeat of his government in the general election of 1945, he led the Conservative opposition in the house of commons. His speech at Fulton, Mo., in 1946 was regarded as the starting point of the movement for European unity and for a Council of Europe. In the general election of Oct. 1951 the Conservatives were returned to power and on Oct. 26 Winston Churchill again took office as prime minister. He left for the United States at the end of 1951 and, during Jan. 1952, he had discussions with Pres. Harry S. Truman and addressed congress. He also paid a short visit to Canada where he had talks with the Canadian prime minister, Louis St. Laurent. He returned to England at the end of January. On Feb. 7 he broadcast on the occasion of the death of George VI the previous day and on Feb. 15 attended the state funeral. On April 25 he spoke of hopes of national solvency in three or four years, at the annual Primrose League Grand Habitation demonstration at the Royal Albert hall. In general his utterances were noticeably concerned with the gravity of both the economic and international situations. On May 20 at the Conservative women's annual conference he appealed for time before judgment was passed on the Conservative government, and on June 11 at a Press association luncheon in London he spoke of the "trap door" upon which the present standard of living was supported. On June 17 he reviewed favourably the talks he had had with the Australian premier, R. G. Menzies, on matters of common concern. On July 1 he praised the patience of the United States in dealing with the Korean war, but regretted that British leaders had not



"CHURCHILL PREPARES FOR THE AMERICAN EXPEDITION," a cartoon by Long of the *Minneapolis Tribune*, published in 1952

been consulted before the bombing of North Korean power stations. Addressing his constituents at Woodford on Sept. 6, Churchill forecast that in the second half of 1952 Britain would be in balance with the nonsterling world and that the whole of the sterling world would be in balance with the rest of the world. On Oct. 4, in a broadcast, he launched the George VI Memorial fund.

Church Membership. The latest information in 1952 concerning church membership in the 252 religious bodies in continental United States, appearing in the *Yearbook of American Churches* (New York, 1952), indicated that there were 88,673,005 persons in 284,592 local churches or congregations. The figures were mainly for years ending in 1951. This compared with 86,830,490 members reported in the *Yearbook* a year earlier. There were 70 religious bodies reporting more than 50,000 members (see Table I), and their total membership was 87,081,504, or more than 98% of all members of religious bodies. The remaining 2% was found in the 182 smaller bodies of the nation.

Table I.—Church Membership in Continental United States, as Reported in 1952, for Religious Bodies with More Than 50,000 Members

Body	Members, 1952	Members, 1951
Adventists, Seventh-day	245,974	237,168
Apostolic Overcoming Holy Church of God*	75,000	...
Assemblies of God	318,478	318,478
Baptist Bodies:		
American Baptist Convention	1,554,304	1,561,073
Southern Baptist Convention	7,373,498	7,079,889
National Baptist Convention, U.S.A., Inc.	4,467,779	4,445,605
National Baptist Convention of America	2,645,789	2,645,789
American Baptist Association	286,691	240,315
Free Will Baptists	400,000	220,000
General Baptists	50,487	49,217
National Baptist Evangelical Life and Soul Saving Assembly of U.S.A.	57,674	70,843
National Primitive Baptist Convention of the U.S.A.	79,000	79,000
Primitive Baptists	72,000	72,000
United American Free Will Baptist Church	78,350	75,000
Brethren (German Baptist):		
Church of the Brethren	186,358	186,201
Buddhist Churches of America		
Christ Unity Science Church†	73,000	70,000
Christian and Missionary Alliance	682,172	658,800
Christian and Missionary Alliance	52,935	58,347
Churches of God:		
Church of God (Cleveland, Tenn.)	121,706	174,960
Church of God (Anderson, Ind.)	100,814	107,094
The Church of God	54,560	43,206
Church of God in Christ	323,305	316,705
Church of the Nazarene	235,670	226,684
Churches of Christ	1,000,000	1,000,000
Congregational Christian Churches	1,241,477	1,204,789
Disciples of Christ	1,792,985	1,767,964
Eastern Orthodox Churches:		
Armenian Apostolic Orthodox Church of America	130,000	100,000
Greek Orthodox Church (Hellenic)	1,000,000	1,000,000
Rumanian Orthodox Church*	50,000	...
The Russian Orthodox Greek Catholic Church of North America	400,000	400,000
The Russian Orthodox Church outside Russia	55,000	45,000
Serbian Eastern Orthodox Church	75,000	75,000
Syrian Antiochian Orthodox Church	75,000	75,000
Evangelical and Reformed Church	735,941	726,361

Table II.—Estimated Memberships of the Principal Religions of the World, 1952

Religion	North America	South America	Europe	Asia†	Africa	Oceania‡	Total
Total Christians:	133,137,322	93,611,765	441,084,739	29,751,705	28,182,215	24,524,407	750,292,153
Roman Catholic	75,092,437	91,346,667	215,064,926§	13,235,242	13,465,233	17,303,715	425,508,220
Eastern Orthodox	1,858,585	...	112,447,669	8,106,071	5,868,089	...	128,280,414
Protestant	56,186,300	2,265,098	113,572,145	8,410,392	8,848,893	7,220,692	196,503,520
Jewish*	5,201,000	627,000	3,463,500	1,491,000	694,000	56,000	11,532,500
Mohammedan	32,600	139,156	3,866,000	251,227,847	60,359,000	75,000	315,699,603
Zoroastrian . . . . .	...	...	...	124,890	...	...	124,890
Shinto . . . . .	...	...	...	25,000,000	...	...	25,000,000
Taoist	15,000	17,000	12,000	50,000,000	1,200	8,000	50,053,200
Confucian	86,000	95,000	50,000	300,000,000	7,500	52,000	300,290,500
Buddhist	165,000	135,000	...	150,000,000	...	...	150,300,000
Hindu	10,000	275,000	...	255,030,000	300,000	100,000	255,715,000
Primitive	50,000	1,000,000	...	45,000,000	75,000,000	100,000	121,150,000
Others or none	74,618,078	11,490,079	89,061,761	173,050,558	32,284,085	7,074,593	387,579,154
Grand total	213,315,000	107,390,000	537,538,000	1,280,676,000	196,828,000	31,990,000	2,367,737,000

*Includes all Jews whether or not members of a synagogue.

†Includes Indonesia but not the Philippines.

‡Includes the Philippines.

§This figure includes Asiatic U.S.S.R. and Turkey.

Body	Members, 1952	Members, 1951
Evangelical United Brethren Church	720,544	717,531
Federated Churches†	88,411	88,411
Religious Society of Friends (Five-Years Meeting)	68,612	68,612
Independent Fundamental Churches of America	65,000	65,000
International Church of the Foursquare Gospel	64,109	74,689
Jewish Congregations	5,000,000	5,000,000
Latter Day Saints:		
Church of Jesus Christ of Latter Day Saints	1,111,314	1,111,314
Reorganized Church of Jesus Christ of Latter Day Saints	126,453	124,925
Lutheran:		
American Lutheran Conference:		
American Lutheran Church	715,640	692,484
Augustana Evangelical Lutheran Church	465,062	440,244
Evangelical Lutheran Church	825,466	813,837
Lutheran Free Church	59,860	59,860
Lutheran Synodical Conference of N.A.:		
Lutheran Church, Missouri Synod	1,674,901	1,674,901
Evangelical Lutheran Joint Synod of Wisconsin and Other States	311,477	307,216
United Lutheran Church in America	1,925,506	1,954,342
Mennonite Church	58,330	56,480
Methodist Bodies:		
African Methodist Episcopal Church	1,166,301	1,166,301
African Methodist Episcopal Zion Church	728,150	530,116
Colored Methodist Episcopal Church	392,167	381,000
The Methodist Church	9,065,727	8,935,647
Pentecostal Assemblies:		
Pentecostal Assemblies of the World, Inc.	50,000	50,000
United Pentecostal Church	100,000	100,000
Polish National Catholic Church	265,879	250,000
Presbyterian Bodies:		
Cumberland Presbyterian Church	81,086	81,086
Presbyterian Church in the U.S.	702,266	678,206
Presbyterian Church in the U.S.A.	2,364,112	2,318,615
United Presbyterian Church of N.A.	219,027	213,810
Protestant Episcopal Church	2,417,464	2,540,548
Reformed Bodies:		
Christian Reformed Church	155,310	151,881
Reformed Church in America	187,256	183,178
Roman Catholic Church	29,241,580	28,634,878
Salvation Army	227,821	209,341
Scandinavian Evangelical Bodies:		
Evangelical Mission Covenant Church of America	51,850	50,679
Spiritualists:		
International General Assembly of Spiritualists	150,000	150,000
Unitarian Churches	79,901	75,389
Universalist Church of America	63,975	64,655
Totals	87,081,504	85,343,664

Source: Yearbook of American Churches (1952 and 1951).

*Not reported in 1951.

†As of 1936.

‡Reported as Christ Unity Spiritual Science Church in 1951.

Church membership, officially reported, had been increasing for many years, as had also the proportion of church membership in the total population. In 1951 church members were about 58% of the population. Since 1926, the date of the last adequate census of religious bodies made by the bureau of the census, church membership had increased about 50%, while the estimated population increased more than 30%. However, nothing was known about church attendance or other participation, or the proportion of church members contributing.

The Church of Christ, Scientist, does not report membership because a regulation of that body forbids the numbering of the people and the reporting of such statistics for publication.

In 1951 about 59% of church members in the U.S. were classified as Protestant, 33% Roman Catholic, 6% in Jewish Congregations and 2% in all other bodies including Eastern Orthodox and Old Catholic.

(B. Y. L.)

Principal Religions of the World.—Statistics of the world's religions are only very rough approximations. Aside from Christianity, few religions, if any, attempt to keep statistical records; and even Protestants and Roman Catholics employ different methods of counting members. All persons of whatever age who have

received baptism in the Roman Catholic Church are counted as members, while in most Protestant churches only those who "join" the church are numbered. The compiling of statistics is further complicated by the fact that in China one may be at the same time a Confucian, a Taoist and a Buddhist. In Japan, one may be both a Buddhist and a Shintoist. (D. W. H.)

Cigars and Cigarettes: see TOBACCO.

Cinerama: see MOTION PICTURES.

C.I.O.: see LABOUR UNIONS.

Circuses: see SHOWS.

City and Town Planning: see TOWN AND REGIONAL PLANNING.

Civil Aeronautics Administration. The year 1952 promised to be one of the best in the history of commercial aviation. In June the domestic air lines carried more than 2,000,000 passengers more than 1,000,000,000 revenue passenger-miles.

During the first six months of the year both the domestic and international scheduled carriers showed gains in every category except air express.

Revenue passenger-miles flown by domestic scheduled carriers increased 17%, from 4,998,142,000 in the first six months of 1951 to 5,848,655,000 in the first six months of 1952. Revenue passenger-miles flown by international scheduled carriers also increased 17% in the same period, from 1,190,179,000 in 1951 to 1,392,412,000 in 1952.

Ton-miles of freight carried by domestic scheduled carriers increased 8% in the first six months of 1952 compared with the first half of 1951, while ton-miles of express decreased by 16.8%. Express and freight ton-miles in international operations, for the same period, increased 9.9%; ton-miles of U.S. mail increased 16.9% in domestic operations and 2.1% in international operations.

A total of 1,655 civil aircraft were manufactured in the first six months of 1952 compared with 1,477 for the same period in 1951, an increase of 12%.

The domestic scheduled air lines' passenger fatality rate per 100,000,000 passenger-miles for the first six months of 1952 was 0.8 compared with 1.9 for the same period in 1951. The international carriers' passenger fatality rate in the first half of 1952 was 6.4 per 100,000,000 passenger miles; the corresponding rate for the first six months of 1951 was 2.5.

During the first six months of the year there was a decline in the number of all classes of pilot certificates issued compared with the same period in 1951. Student pilot certificate issuances declined 33%, private pilot issuances 26%, commercial issuances 20% and air line transport pilot issuances 21%.

On June 30, 1952, the end of the sixth year of the 12-year \$520,000,000 Federal Aid Airport program, a total of \$183,145,451 in federal funds had been programmed, of which \$181,729,792 had been put under contract. Federal funds had been granted to 2,286 projects at 1,159 different airports. Of this total, 1,680 projects had been completed and 353 were under construction.

The Civil Aeronautics administration opened 45,000 mi. of ultramodern very-high-frequency airways in the United States on June 1. These new Victor airways offer increased accuracy and simplicity in air navigation over much of the United States to all types of aircraft. Of the 45,000 mi. of Victor airways, 35,000 mi. are primary routes and 10,000 mi. are alternate routes. Numbered like highway routes, the odd-numbered Victor airways run north and south while even numbers designate east-west routes. The new airways eventually would largely replace



TEMPORARY CAMP SITE for construction workers at one of five bases for the U.S. air force being rushed to completion in French Morocco in 1952. This camp, with a personnel of about 10,000, had its own theatre, power station, wells and water reservoir (above left)

the existing 70,000 mi. of airways based on the low or medium frequency, four-course radio ranges. Cornerstone of the Victor airways is the very-high-frequency omnidirectional range, commonly referred to as the omnirange, which offers courses in all directions. By midyear the CAA had commissioned more than 350 omniranges in the domestic United States out of a planned total of more than 400.

At the request of the air force, action was taken to provide aircraft movement information service at 11 air route traffic control centres. Flight movement data is collected from all sources on aircraft penetrating or operating within air defense identification zones and delivered to air defense units at the proper time. By July 1 steps had been taken to carry out the program at Boston, Atlanta, Detroit, Minneapolis, Great Falls, Seattle, Oakland, Los Angeles, Washington, D.C., New York and Albuquerque.

Major type certification projects during the year included the VC-340 (Convair Liner) and the large passenger-carrying version of the S-55 Sikorsky helicopter.

As of June 30, CAA had certificated six turbojet engines, four axial and two centrifugal, with a maximum dry take-off rating of 5,800-lb. thrust.

An outgrowth of the accidents at the Newark, N.J., airport was the appointment of the President's Airport commission to study the problem of airport location and use. The administrator of civil aeronautics served as a member of the commission and CAA staff members assisted in the preparation of the commission's report, *The Airport and Its Neighbors*.

Indications were that the widespread gains registered in 1951 in the ownership and use of planes by business firms and farmers would continue in 1952. Three-quarters of the planes

produced during the first seven months of the year were three- to five-place models.

A program of safety education of aerial applicators and their pilots was conducted with effective results. The CAA promoted nation-wide air tours designed to acquaint farmers and others with the value of aircraft in determining good and poor practices in soil conservation.

The Technical Development and Evaluation centre at Indianapolis, Ind., continued its work on the aircraft fire prevention program. Reports were issued regularly to the industry and the military services on the results of full-scale tests of fire extinguishing agents, methods, rates of agent discharge, and fire detection systems on jet and reciprocating engines.

Evaluation of the nuclear soil moisture and density measuring devices under field conditions continued. A preliminary model of a nuclear device to indicate moisture and density conditions near the surface of the soil was completed for use in compaction control during construction of pavements and embankments.

One of the most important services added by United States flag carriers during the year was the introduction of tourist flights across the North Atlantic. Inspection and planning assistance was provided by the CCA.

Technical consultative services were given to several foreign countries under the Mutual Security act of 1951, and civil aviation representatives from many countries were given demonstrations of United States equipment, aircraft and air navigation aids. (See also AIRCRAFT MANUFACTURE; AVIATION, CIVIL.)

(B. M. St.)

Civil Defense, U.S. Civil defense is an integral part of the national security program. Its mission is to protect people, property and production in the United States in case of war, and to serve in peacetime disasters in most states.

Responsibility for civil defense is vested primarily in the states and their political subdivisions, with the federal government providing co-ordination and guidance, in accordance with the Federal Civil Defense act of 1950 (public law 920). This act, approved Jan. 12, 1951, established the Federal Civil Defense administration (FCDA) in the executive branch of the government with responsibility for developing a national program to minimize casualties and damage from attack and to maintain maximum civilian support of the nation's armed forces.

The program is based on the principles of self-protection and mutual aid by individuals, groups, industries, communities, the states and the nation. FCDA assists the states in carrying out the program by matching their appropriations for essential facilities, equipment and supplies, by giving technical advice and training, and by providing public education programs.

FCDA is responsible for a national communications system for disseminating warning of impending attack; for stockpiling medical, engineering, welfare and other emergency supplies and equipment; and for encouraging states to enter into mutual aid compacts with other states and with neighbouring nations.

The states carry out the program through volunteer workers supervised by full-time staffs. At the close of 1952, all states, territories and major cities had civil defense organizations. Civil defense laws had been enacted in 47 states and all territories. Mutual aid compacts existed among 26 states, and most states had authorized similar agreements among their communities. Civil defense forces were actively serving in peacetime emergencies and disasters in 32 states and 4 territories.

In 1952, surveys indicated that more than three-fourths of people in major U.S. cities were aware of some simple specific things they should do to protect themselves against atomic

attack. Four-fifths of critical target area residents believed civil defense necessary. About 90% of 1,468 elementary and secondary schools and colleges queried had civil defense instruction courses. Civil defense was an active co-sponsor of the national blood program and the Ground Observer corps, and initiated through private organizations a nation-wide mass registration for home defense.

Volunteer enrolment rose to 3,300,000, or 23% of the number required for full mobilization. State staffs increased one-third. Half the required number of volunteer firemen and auxiliary police were enrolled, as were 20% of wardens, 13% of emergency welfare workers, 12% of engineering workers and 12% of volunteers needed to give first aid and medical care. The Ground Observer corps had approximately 152,000 members recruited for the air force by the state civil defense directors.

Three thousand students representing most states, territories, possessions and more than 600 cities attended the FCDA Staff college at Olney, Md., and the training schools at Ogontz Center, Pa., Stillwater, Okla., and Saint Mary's, Calif.

A nation-wide warning attack system linking 175 key points was completed, and a communications network to supplement leased wire facilities neared completion. A national emergency control centre was established and an alternate control centre was being installed. Sirens and other devices capable of warning 40% of the residents of critical target areas were financed, as were 27% of radio equipment needs.

Federal and state funds were allotted for blood plasma and plasma expanders for 1,600,000 casualties, and whole blood equipment for 3,000,000. A week's emergency medical care for approximately 2,000,000 was assured.

Total federal appropriations for civil defense since enactment of the new law had amounted to \$145,000,000, of which \$86,000,000 was for stockpiling and \$33,000,000 for matching state and local funds. State and local governments made available a total of \$223,000,000 for civil defense. Considerable savings were effected through competitive bidding and bulk buying.

Millard Caldwell, former member of congress and governor of Florida, was FCDA administrator. James J. Wadsworth, former member of the New York state legislature and government executive, was deputy administrator. (See also CIVIL AERONAUTICS ADMINISTRATION; MUNICIPAL GOVERNMENT.)

(M. F. CL.)

Civil Rights: see EDUCATION; LAW; NEGROES, AMERICAN.

Civil Service. **United States.**—The two dominant trends in the public service during 1952 were foreshadowed before the year began. They were: (1) a continuing build-up of civilian employment in the executive branch of the federal service; and (2) an increase in living costs which brought renewed demands for pay increases for public employees in all levels of government. Both were directly attributable to the accelerated defense program and the continuation of inflationary forces in the national economy.

During the first half of 1952, civilian employment in the executive branch of the federal government rose sharply. Total civilian employment increased from 2,518,137 at the end of Dec. 1951 to 2,603,288 at the end of June 1952—an increase of 85,151 employees. Of these, 1,337,000 were in the department of defense; another 524,000 were in the post office; and 174,000 were in the Veterans administration. These three government departments accounted for almost 80% of all federal civilian employees. (See also GOVERNMENT DEPARTMENTS AND BUREAUS.)

The increasing extent to which the United States was engaged in foreign aid and defense activities outside its boundaries was further reflected in the fact that 100,000 civilians on the federal

pay roll were located in foreign countries. Personnel problems resulting from these far-flung activities became the subject of special study by the United States civil service commission. One result of the study was a proposal by the commission in midyear to place overseas workers in the department of the air force under civil service.

In contrast with the growth in federal employment, the number of nonfederal public employees remained relatively uniform. At the same time, however, state and local government pay rolls continued the climb which began the previous year, caused by pay increases to offset mounting living costs.

Disclosures of irregularities and misconduct by certain federal officials and employees, particularly in the bureau of internal revenue, gave impetus to widespread criticism of public employees from many quarters. In an effort to offset the criticism, much of which sprang from misinformation, a move was launched under the leadership of Chairman Robert Ramspeck of the United States civil service commission to provide the public with accurate facts about government employment and government employees. This "truth about government" campaign received widespread support by newspapers and civic groups. It was further augmented by a program to improve government public relations initiated by the Civil Service assembly of the United States and Canada.

A plan proposed by Pres. Harry S. Truman to place United States postmasters, marshals and customs officials under civil service was rejected by congress during the year. The plan was one of several government reorganization proposals submitted by the president for congressional approval, and had previously been urged by the Hoover commission and the National Civil Service league.

Relatively few extensions of civil service took place during the year. In Louisiana the state legislature approved a proposed amendment to the state constitution to establish a civil service program for all state employees. The amendment, designed to restore the civil service program repealed by the legislature in 1948, was to be voted on by the electorate at the November elections.

The United States supreme court upheld the constitutionality of a New York statute which prohibited the employment in the public-school system of any person who advocates overthrow of the government by force or violence. The majority opinion upholding this law held that the state has a constitutional right to protect the minds of school children from subversive propaganda.

In Portland, Ore., the city council rejected a proposed charter amendment which would give city firemen the right to collective bargaining and arbitration in labour disputes with the city administration. In Cincinnati, O., the city council approved a policy statement outlining procedures to be followed in conducting negotiations with city employees. (See also MUNICIPAL GOVERNMENT.) (J. J. DN.)

Great Britain.—As a result of intensive efforts in all departments, the total number of staff in the civil service was reduced from 688,435 on Jan. 1, 1952, to 678,030 on July 1, a reduction of 10,405. In January an agreement was reached between both sides of the National Whitley council providing for a special addition to the pay of all nonindustrial civil servants on salaries of up to £2,000 a year. This settlement gave increases of 10% on the first £500 of remuneration, 5% on the second £500, 2½% on the third £500 and a total increase of £100 on salaries of between £1,500 and £2,000, and was in final settlement of all civil service nonindustrial wage claims based on movements in prices and wages in respect of the period up to Dec. 31, 1951.

In Jan. 1952 a new security procedure was introduced for

staff employed on exceptionally secret work, including work involving access to classified atomic energy information. This procedure involved open inquiries designed to establish the reliability of such staff and to carry out the government's policy that no person should be employed on work the nature of which was vital to the security of the state if he was a member of the Communist party, a fascist organization or associated with either in such a way as to raise legitimate doubts about his reliability. (E. E. Bs.)

Clark, Mark Wayne (1896—), U.S. general, was born on May 1 at Madison Barracks, N.Y. He graduated from the U.S. Military academy, West Point, N.Y., in 1917 and saw action in France as a battalion commander during World War I. He was graduated from the Command and General Staff school, Fort Leavenworth, Kan., in 1935 and from the Army War college, Washington, D.C., two years later. In Aug. 1942 he arrived in England to take over command of U.S. ground forces in the European theatre of operations, and in Nov. 1942 he was second in command of the U.S. forces in the North African invasion. Three weeks before the landings, Clark had led a successful secret mission by plane and submarine to establish contact with French officers in North Africa friendly to the Allied cause. For this feat he was promoted to lieutenant general. Subsequently he led the U.S. 5th army in the invasion of Italy in Sept. 1943, and in Nov. 1944 he was named commander in chief of the Allied 15th army group. After World War II Clark, who had advanced to the rank of full general (temporary), was U.S. high commissioner for Austria (1945-47), commander of the U.S. 6th army in San Francisco (1947-49) and commander of the U.S. army field forces at Fort Monroe, Va. (1949-52). In Oct. 1951 Pres. Harry S. Truman nominated him to be first U.S. ambassador to the Vatican, but after numerous protests the appointment was withdrawn at Clark's own request.

On April 28, 1952, President Truman appointed Clark supreme commander of U.N. forces in Korea to succeed Gen. Matthew B. Ridgway (*q.v.*). Clark took command on May 12 during the height of the Kojé prisoner of war disturbances, which were later successfully subdued. On July 4 he defined U.N. objectives in the Korean war as "establishment of . . . the equality of nations and the . . . right of all men to life, liberty and the pursuit of happiness."

Clay Products: see CERAMIC PRODUCTS.

Cleveland. Cleveland, O., had a population of 914,808 by the federal census of 1950. Its area is 73.1 sq. mi. Ground was broken Feb. 4, 1952, for the city's \$26,000,000 municipally owned rapid transit line and by the close of the year more than \$10,000,000 of the work was under way.

The city council on April 28 approved fluorination of Cleveland water, increased the pay of councilmen \$1,000 to \$5,000 a year on June 16, placed on the ballot a \$54,000,000 capital improvement bond program and five charter amendments on Sept. 2 and on Sept. 22 extended rent controls until April 30, 1953, but recommended that rent increases of 10% to 15% be permitted.

Teachers and other salaried employees of the Cleveland board of education were granted a \$175 cost-of-living increase on Jan. 28 and on July 28 the board established minimum annual pay for teachers at \$3,500 and set its 1953 budget at \$32,864,821, dependent upon passage of a 9.5-mill levy. Enrolment in Cleveland public schools (March 1952) was 101,189.

Commissioners of Cuyahoga county, of which Cleveland forms a major part, named Budget Commissioner John F. Hehir county administrator as the first step in reorganizing the county govern-

ment. The commissioners put on the ballot a \$4,400,000 bond issue for a county administration building and adopted a provisional operating budget of \$30,488,498 for 1953. The county's new \$5,000,000 Sunny Acres hospital for tuberculosis patients was dedicated Aug. 21. Tax collection in the county in 1952 was \$82,091,437, the largest in 25 years.

The United States bureau of roads in July approved construction of a \$32,000,000 inner belt bridge across the Cuyahoga river valley. Announcement of a 900-unit, \$9,000,000 project in the southeast sector of the city was made by the Metropolitan Housing authority. Mayor Thomas A. Burke was authorized by the city planning commission to proceed with plans for lease of the mall in the centre of the city for private construction of a 1,000-car garage under it. Work began on the \$32,-856,000 supersonic wind tunnel of the Lewis Flight Propulsion laboratory at Cleveland Hopkins airport. (P. Bv.)

Climate: see METEOROLOGY.

Clothing Industry. The United States clothing industry (men's, women's and children's apparel), continued in the doldrums during the first half of 1952, making little progress from the poor record of 1951. The consequences of overproduction, accompanied by reduced consumer buying caused by high prices, were still evident in the form of lowered production and reduced employment.

In men's wear, factories were operating at only 70% of capacity during the first half of the year, compared with a normal of 85% to 90%. Production of suits declined by 19% compared with the same period of 1951, according to the bureau of the census. The emphasis in men's outer garments, suits, trousers, sport coats and slacks, was in lightweight sport or leisure coats and in slacks. In sportswear garments, rayon was becoming increasingly important. More than 15,000,000 pairs of separate trousers were made in rayon and only 6,700,000 pairs were made in wool, whereas five years before, the proportion had been the opposite.

Production of men's shirts declined during the first half of 1952 compared with the same period of 1951, but this was caused by the decline in dress shirt demand. Sport shirts were outselling dress shirts in a two-to-one ratio.

In men's suits, the use of dacron blends, all-rayon suits and cords for lightweight summer wear was growing, with a consequent decline in the all-wool tropical worsteds. Blends of man-made fibres and wool, such as dacron and wool, orlon and wool, etc., were becoming increasingly popular in both men's and women's wear. The increase in the sport coat from 800,000 garments cut in 1940 to nearly 8,000,000 in 1952 shows clearly the tremendous increase in consumer interest in informal garments.

In the women's apparel field the first half of the year was bad. The retailers still had inventories of merchandise they had bought the year before in anticipation of a price rise, which the consumers refused to buy because of high prices.



SUMMER RUSH PERIOD for cutters and other workers of the women's garment industry in New York city as 1952 fall fashions were prepared for the showroom. A designer is shown draping a cocktail dress

However, with production lower in most items of women's wear, by the end of the summer, conditions pointed to a fairly good business for the fall and excellent business for the spring of 1953.

In Great Britain, France, Italy and, in fact, most European countries, as well as in South Africa, Australia and New Zealand, the apparel industry was in a most depressed state during the first half of 1952. The basic reason was that the price of raw wool had risen nearly 200% within six months after the start of the Korean war. All countries bought heavily. Then the bottom dropped out of the wool market in June and July 1951. Stocks were extremely heavy, prices declined to pre-Korean levels and in the face of such uncertainty the clothing manufacturers refused to buy, as did the retailers. All waited for the price of wool to stabilize, which it did during mid-1952. At the same time, rayon fabrics and cotton goods reached price levels that compared favourably with pre-Korean levels. Toward the close of the year stocks were normal, prices reasonable, and with consumer demand good, prospects for 1953 seemed excellent. (See also WOMEN'S FASHIONS.) (H. A. Cn.)

Coal. Except for 1949, world coal production had been increasing from the low of 1945. Table I shows the outputs of countries which produce more than 10,000,000 tons a year, as reported by the U.S. bureau of mines. In 1950 the countries

Table I.—Coal Production of the World

	(Millions of short tons—all grades)					
	1945	1946	1947	1948	1949	1950
Canada	16.51	17.81	15.87	18.45	19.11	19.13
United States	632.55	594.43	687.81	656.65	480.57	556.39
Belgium	17.45	25.19	26.89	29.41	30.70	30.10
Czechoslovakia . . .	29.84	37.01	42.53	45.56	47.98	50.66
France	38.60	54.34	52.16	49.75	58.47	57.88
Saar	?	8.69	11.56	13.85	15.72	16.44
Germany	164.22	251.95	271.49	294.41	327.44	344.52
Hungary	4.73	7.00	9.71	11.68	13.04	?
Japan	26.47	25.05	33.13	40.14	44.26	43.79
Netherlands	5.80	9.77	11.66	12.47	13.13	13.71
Poland	30.17	53.07	70.43	82.98	82.11	90.70
Spain	13.32	13.33	3.08	13.25	13.19	12.71
United Kingdom . .	204.71	214.81	221.14	233.44	239.38	242.28
U.S.S.R.	160?	178?	193?	222?	249?	291?
Yugoslavia	3.98	7.50	10.24	11.82	13.36	14.3?
China	19?	14?	17?	11?	19.45	41.96
India	32.67	33.27	31.81	33.40	35.23	35.83
South Africa	25.96	26.02	26.25	26.47	28.16	29.18
Australia	20.43	21.94	23.48	24.05	24.05	26.67
Total	1,495	1,621	1,808	1,888	1,822	1,976

Table II.—Data of the Coal Industry in the United States

(In thousands of short tons)

	1946	1947	1948	1949	1950	1951
Production, total . . .	594,429	687,814	656,658	480,570	560,388	576,335
Anthracite	60,507	57,190	57,140	42,702	44,077	42,670
Soft coals	533,922	630,624	599,518	437,868	516,311	533,665
Bituminous	536,254	627,750	596,432	434,776	512,941	530,373
Lignite	2,668	2,874	3,086	3,092	3,370	3,292
Anthracite						
Open-cut	12,859	12,603	13,353	10,377	11,834	11,136
Underground	47,648	44,587	43,787	32,325	32,243	31,534
Used locally	6,398	6,138	6,657	5,012	5,047	5,163
Shipped	54,109	51,052	50,483	37,690	39,030	37,507
Exports	6,507	8,510	6,676	4,943	3,892	5,959
Imports	10	10	1	—	18	27
Stocks	251	702	964	975	1,268	982
Consumption	53,900	48,200	50,200	37,700	39,900	37,000
Bituminous and lignite						
Open-cut	112,964	139,395	139,506	106,045	123,467	117,618
Underground	420,958	491,229	460,012	331,823	392,844	416,047
Used locally	15,934	17,680	16,329	11,651	13,217	?
Shipped	517,988	612,943	583,189	426,217	563,292	?
Exports	41,209	68,667	45,925	27,842	25,468	56,726
Imports	435	290	291	315	347	292
Stocks	52,783	57,787	76,662	48,373	72,516	76,636
Consumption	500,352	557,243	519,909	445,538	454,202	468,904
Railroads	110,166	109,296	94,838	68,123	60,969	54,005
Coke ovens	82,999	104,800	107,306	91,176	103,845	113,448
Power utilities	68,739	86,009	95,620	80,610	88,262	101,898
Steel mills	8,603	10,048	10,046	7,451	7,698	7,973
Cement mills	6,969	7,938	8,554	7,988	7,943	8,525
Other industrial	122,290	139,989	113,798	98,957	98,164	105,634
Retail dealers	100,586	99,163	89,747	90,299	86,604	76,531

listed accounted for 98% of the world total, and the four major producers supplied 73% of the total.

United States.—The salient features of the coal industry of the United States are shown in Table II, and the production by states in Table III, both as reported by the U.S. bureau of mines.

Total coal production in 1951 was 4% greater than in 1950 but was still 16% under the high of 1947. In 1952 the production trend for bituminous coal was downward during the first half, but picked up after the midyear work holiday, only to be cut back again by a "memorial" holiday in August. Production sagged again in September and early October, as is usually the case during contract negotiations, and as a result, production to Oct. 18 totalled only 371,270,000 tons, or 12% less than in the same period of 1951.

In the anthracite fields, production was less irregular and relatively somewhat better, as the output to Oct. 18 was 30,802,000 tons or 7.5% less than in the same period of 1951.

Canada.—Coal production suffered a slight decline, from 19,139,000 tons in 1950 to 18,589,000 tons in 1951. (G. A. Ro.)

Great Britain.—The production of deep-mined coal in 1950 was 204,100,000 metric tons and of opencast coal 12,200,000 metric tons, making a total of 216,300,000 metric tons. For 1951 the totals were: deep-mined coal 211,900,000 metric tons and opencast 11,000,000 metric tons, a total of 222,900,000 metric tons. The coal situation in Great Britain improved in several respects during 1952. The total output, the distributed stocks and overseas exports were all higher than in 1951 and there was also a marked improvement in the recruitment of labour for the mines.

A higher proportion than usual of the new entrants were juveniles and, for the first time in many years, the upward trend in the average age of the miners was checked. The total number



SKI HOIST adapted for use by coal miners in 1952, at the no. 14 mine of U.S. Steel near Gary, W.Va. Miners are shown being carried by chain belt seating from the lower portal to the bath house above

of workers on colliery books at the end of 1951 was 698,000.

Despite the improvements referred to, it was estimated that the total output in 1952 fell short of the true requirements by about 20,000,000 tons because the real demand for coal in Great Britain since World War II had been masked by statutory restrictions on supplies. The government Committee on National Policy for the use of Fuel and Power Resources, under the chairmanship of Lord Ridley, reported in September that production from the mines was unlikely to be sufficient to meet the real demand within the next decade, even with a vast expenditure of capital in the coal fields; they, therefore, recommended that steps should be taken immediately to conserve fuels by every means that might lead to greater efficiency in the utilization of heat and power.

In 1951 the National Coal board sustained a loss of £5,500,000 on the sale of 1,200,000 tons of coal imported from the United States to home consumers at the normal controlled prices and, as a result of this, it started operations in 1952 with a net deficit of £1,800,000.

The capital expenditure on new developments in 1951 was £26,500,000. The National Coal board estimated that £38,000,000 would have to be spent every year from 1951 to 1955 if all the proposals in the plan for coal were to be carried out. Some of the more important technical developments were proceeding on the lines suggested by the Reid committee, particularly in connection with skip winding and the layout of mine workings on the horizon system to enable locomotives to be used for main haulage. About 460 locomotives were at work at the end of 1952, of which 400 were of the diesel type and about 60 of the electric battery type.

Table III.—United States Production of Coal, by States

(Millions of short tons)

	1945	1946	1947	1948	1949	1950	1951
Alabama	18.2	16.2	19.0	18.8	12.9	14.4	13.6
Colorado	7.6	5.9	6.4	5.6	4.6	4.3	4.1
Illinois	73.0	63.5	67.9	65.3	47.2	56.3	54.2
Indiana	25.2	21.7	25.4	23.8	16.6	20.0	19.5
Kentucky	69.6	66.6	84.2	82.1	62.6	78.5	75.0
Ohio	32.7	32.3	37.5	38.7	31.0	37.8	37.9
Pennsylvania	133.0	125.5	147.1	134.5	89.2	105.9	108.6
Tennessee	6.3	5.6	6.3	6.5	4.2	5.1	5.4
Utah	17.2	6.0	7.4	6.8	6.2	6.7	6.1
Virginia	17.2	15.5	20.2	18.0	14.6	17.7	21.4
West Virginia	152.0	144.0	176.2	168.9	122.6	149.1	163.3
Wyoming	9.8	7.6	8.1	6.4	6.0	6.4	6.4
Others	26.2	23.5	24.9	26.9	20.3	17.3	18.4
Total Bituminous	577.6	533.9	630.6	599.5	437.9	516.3	533.7
Anthracite	54.9	60.5	57.2	57.1	42.7	44.1	42.7
Grand Total	632.6	594.4	687.8	656.6	480.6	560.4	576.3

Western European.—The Ministerial Coal Production group of the Organization for European Economic Cooperation (O.E.E.C.) met in London on July 28 to review the production and consumption figures for the immediate future and to discuss the financing of investments in the coal industry in France, Germany and Belgium. The production figures for 1952 and 1953 were predicted from data supplied by the various governments concerned and, as was anticipated, they were exceeded in 1952 in Great Britain and western Germany. Under the O.E.E.C. five-year plan for the German Federal Republic, the aim was to raise the output of hard coal to 150,000,000 metric tons a year by 1956. (See also LABOUR UNIONS.) (J. A. S. R.)

Coast and Geodetic Survey, U.S. During 1952, this bureau of the department of commerce performed a wide variety of essential services for the advancement of marine, aviation, commercial and industrial interests of the country. The impact of the Korean conflict and the military preparedness program continued to be reflected in almost all phases of the bureau's work. There was a steadily increasing demand for charting services and for acceleration of the mapping program in areas of strategic importance, particularly in western Alaska.

Seventeen ships and two shore-based parties were engaged along the Atlantic, Gulf and Pacific coasts, and in Alaska making surveys and collecting basic data for new nautical charts and for modernizing existing ones. These included inshore hydrographic surveys, oceanographic surveys and special tide and current surveys.

High priority was given to the work in Alaska. Electronic-controlled hydrographic surveys were extended in the Bering sea and along the south coast of the Alaskan peninsula and combined operations were carried on in southeast Alaska and along the Arctic coast. More extensive use was made of the electronic position indicator system for the control of hydrography in the Bering sea. Used together with the Shoran system, the two provided economical and highly effective methods of offshore hydrographic surveying, particularly in areas where fog or inclement weather existed for a good part of the working season.

Major emphasis was also placed on extending the geodetic network in western Alaska to meet the needs of the department of defense. In the United States the network of control was extended to various priority areas for use by the federal agencies and others engaged in mapping and engineering work. A program of astronomic work in the Bahama Islands area was initiated in connection with guided missile experiments by the air force.

Photogrammetric mapping was extended along coastal areas of the United States and in Alaska. Aerial photographs were taken primarily with the bureau's nine-lens camera for basic mapping purposes. Seventy-eight airports in the United States were photographed for use in preparing airport obstruction plans.

Observations of the rise and fall of the tide at principal sea-ports were continued as part of a comprehensive and long-range tidal program. Special tidal current surveys were in progress in Chesapeake bay, San Francisco bay, New York harbour and Puget sound. Temperature and density of sea water data were obtained at 138 tide stations in the United States and other countries, and the results were published in a series of four volumes.

The magnetic survey of the United States was carried forward to provide additional information on the magnetic elements for navigators, for surveyors and engineers using compasses and for various scientific purposes. There was a steady

and increasing demand for such data. Observations were made at 33 new field stations and 43 repeat stations and at 7 observatories. Construction of a new observatory and laboratory at the A. P. Hill Military reservation in Virginia was authorized by congress to replace the outmoded observatory at Cheltenham, Md.

Seismologic work was directed toward mapping areas of potential danger and the analysis of destructive earthquake motions. The locations of more than 600 earthquakes were determined during the year based on reports received from co-operating stations in the U.S. and abroad. As part of the bureau's engineering seismology program, 67 strong-motion seismographs were operated in 5 states of the western seismic region. The most outstanding United States recording of the year, from the standpoint of damage and public interest, was the Arvin (Tehachapi), Calif., earthquake, which occurred on July 21, 1952.

More than 40,000,000 nautical and aeronautical charts were published, requiring the printing of nearly 93,000,000 impressions. The program of charting the Gulf Intracoastal waterway, begun several years earlier, was completed during the year. This series comprised 33 charts extending from Carrabelle, Fla., to Brownsville, Tex., and was similar in design to the Atlantic Intracoastal waterway charts. A total of 772 nautical charts and 1,191 aeronautical charts were available in different series to meet the various needs of marine and air navigation. (See also CARTOGRAPHY; GEOGRAPHY; OCEANOGRAPHY; SEISMOLOGY.) (R. F. A. S.)

Coast Guard, U.S. During the fiscal year ending June 30, 1952, personnel and activities of the U.S. coast guard were increased moderately to meet, in part, the military requirements for search and rescue facilities in Atlantic and Pacific overseas areas, to provide additional port security coverage and a higher degree of military readiness.

In addition to the general enforcement of federal laws on the high seas and territorial waters, the coast guard assisted other government agencies in enforcement of the Oil Pollution act, anchorage regulations, laws pertaining to internal revenue, customs, immigration, quarantine, and the conservation and protection of wildlife and fish. An example of this assistance was the location of 190 illicit distilleries by coast guard aviation personnel. Their discovery was estimated to have prevented the loss of \$119,263 in revenue.

For search and rescue operations the coast guard maintains an established organization of surface craft, aircraft, lifeboat stations, bases and radio stations, communication centres and rescue co-ordination centres. During the year the coast guard responded to 15,555 calls for assistance and rescued from peril or saved the lives of 5,855 persons. Disabled vessels towed to port numbered 6,203. The value of vessels and aircraft assisted (including cargo) was \$319,721,552.

For example, on Jan. 9, 1952, the U.S. freighter "Pennsylvania" foundered 665 mi. W. of Cape Flattery, Wash. In heavy seas, the coast guard used all the facilities in the area at its command, plus the co-ordinated use of navy, air force and Royal Canadian air force facilities. A fruitless search for the 45 men who had abandoned ship in lifeboats was made by 51 aircraft and 18 surface vessels.

On Feb. 18 the merchant ships "Fort Mercer" and "Pendleton" broke in half during a heavy storm off the New England coast. Coast guard vessels and aircraft and lifeboat stations removed 62 persons from the floundering ships or from the water; 14 crewmen were drowned.

Seventeen persons were rescued April 11 from a commercial aircraft which had crashed off the harbour of San Juan. On April 7 the coast guard went to the relief of flooded areas



LAST SURVIVOR from the broken tanker S.S. "Fort Mercer" being towed on a rubber life raft to the coast guard cutter "Yakutat" off Cape Cod early in 1952

along the Mississippi and its tributaries. Using small boats, mobile radio stations, automotive equipment, helicopters and fixed-wing aircraft, the coast guard evacuated stranded persons and livestock, transported relief supplies and personnel engaged in levee protection and generally assisted local, state, civil and military authorities and the Red Cross.

The annual International Ice patrol in the North Atlantic was conducted from February 13 to June 16 by cutters and by aircraft operating out of Argentia, Nfld.

The annual Bering sea patrol was carried out by the cutter "Northwind" from June 4 to August 5, 1951. The "Northwind" cruised 12,460 mi., carried 26 passengers and transported 261 tons of freight and fuel oil for government agencies, assisted one vessel and rendered medical or dental treatment to 739 persons.

Ships of ocean (weather) stations provided search and rescue, communications, air navigation facilities and meteorological service in areas traversed by the United States and other co-operating governments. They transmitted 61,488 weather reports, made 52,080 radio contacts with aircraft, rendered assistance to 35 cases and cruised 807,912 mi. The coast guard operated five stations each in the North Atlantic and the Pacific. One other Atlantic station was maintained by the coast guard two-thirds of the time, with the Netherlands operating it the remaining third.

A total of 37,838 aids to navigation were maintained in continental and territorial waters and at overseas military bases. During the year 929 new aids were established and 882 discontinued. The coast guard operated 36 Loran stations supplying long-range navigational service to aircraft and ships.

During the year no passenger lost his life as a result of casualties on inspected and certified U.S. passenger vessels.

The merchant marine council of the coast guard continued its support of the International Convention for the Safety of Life at Sea, whose ratification was considered to be one of the im-

portant accomplishments of the year. This agreement established many new safety equipment requirements for passenger and cargo vessels of 500 gross tons and over which were engaged in international trade.

Marine casualties during the year totalled 2,879, of which 2,072 received detailed investigation. There were 312 lives lost in '86 marine casualties, and ten vessels of more than 1,000 gross tons were lost.

In the port security program 304,191 longshoremen, warehousemen, pilots, waterfront workers and persons to be employed on merchant vessels were screened to determine whether they were security risks. In the fiscal year, 170,328 merchant mariners' documents and 188,301 port security cards were issued.

At the end of the year larger vessels consisted of 192 cutters of various types, 62 patrol boats, 36 lightships, 42 harbour tugs and 10 buoys, an increase of 14 vessels over the previous year. They cruised 3,216,617 mi. compared with 2,742,949 the year before. Included among the cutters was the "Courier," a 339-ft. vessel which was operated as a floating relay station for Voice of America broadcasts. In addition, the coast guard had in operation 262 motor surfboats, 177 motor lifeboats, 1,254 miscellaneous motorboats, 1,966 nonpowered boats and 75 barges.

Aircraft in operation included 113 fixed- and rotary-wing craft which flew 10,664 sorties for a total of 29,185 hr. Twenty new aircraft were acquired to replace overage equipment.

The military personnel strength on active duty was 3,151 commissioned officers, 459 commissioned warrant officers, 357 cadets, 479 warrant officers and 30,636 enlisted men as compared with 25,375 enlisted men in 1951. The authorized force of civilian employees was 2,467 salaried personnel, 3,366 wage-board employees and 595 part-time lamplighters. Commissioned officers increased by 519 during the year. Seventy-seven cadets were graduated from the U.S. Coast Guard academy, New London, Conn., and commissioned as ensigns. In the annual competitive examination for appointment as cadets, 487 of the 1,425 candidates received passing grades and 225 were selected for the class of 1956.

Of 20,940 men who applied for enlistment, 9,126 were accepted, 3,558 were rejected physically and 6,959 for other reasons.

The U.S. public health service provided 82 officers for coast guard duty as follows: 34 medical officers, 38 dental officers, 9 nurses and 1 scientist.

Port security training was a major program, with 42 organized reserve training units in operation with 268 officers and 2,849 enlisted men in paid drill status. Reserves on inactive duty numbered 9,295, of whom 2,588 were commissioned and 6,707 enlisted.

The civilian auxiliary in 151 communities had 12,804 members and 7,596 facilities; the primary activity of the auxiliary was to promote safety in the operation of small boats. (M. O'N.)

Cobalt: see MINERAL AND METAL PRODUCTION AND PRICES.

Cochin-China: see INDOCHINA.

Cocoa (CACAO). Primarily as a result of unfavourable weather conditions in the major producing areas of Africa and Latin America and black pod disease on the Gold Coast, world output for 1951-52 was revised downward to 1,483,000,000 lb., compared with earlier prospects of 1,672,000,000 lb. Per capita consumption in the U.S. in 1952 was estimated at four pounds—the same as in 1951. Prices near the ceiling apparently discouraged consumption. Spot prices near 33 cents per pound in the autumn were about 5 cents below the ceiling and future prices for delivery in the spring of 1953 were

World Cacao Production by Leading Areas

Area*	In thousands of pounds		Average 1935-36 to 1939-40
	1952-53	1951-52	
Gold Coast	537,000	480,000	609,363
Brazil	206,000	230,900	263,980
Nigeria	240,000	230,000	216,318
French West Africa . . . . .	...	97,000	109,937
French Cameroun and Equatorial Africa . . . . .	...	111,330	60,221
Dominican Republic . . . . .	...	53,000	54,049

*Some countries named include production of smaller near-by producers.

as low as 26 cents per pound. The 1952-53 crop was estimated as high as 744,000 tons, 11% more than the previous year. The West African Central Marketing board began purchases late in September. Some Gold Coast producers served notice they would no longer sell through those channels. (J. R. K.)

Coffee. The average U.S. civilian used an estimated 16.4 lb. of coffee in 1952, the same as in 1951, but 17% more than the 14-lb. pre-World War II average.

The 1952-53 world coffee crop was unofficially and preliminarily indicated at 5% to 10% above the revised estimate of 37,600,000 bags (of 132 lb.) in 1951-52, which was slightly below the 38,200,000 bags of 1950-51. However, the exportable supply from the 1951-52 crop was revised downward by 9% to 29,300,000 bags, compared with 30,100,000 bags in the previous year. World coffee exports, 16% above prewar, in 1951 were 31,700,000 bags, 16,400,000 from Brazil and 4,800,000 bags from Colombia. The U.S. took about two-thirds of the total,

Exportable Coffee Production of the Principal Producing Countries

Country	In thousands of bags—132 lb. each		Average 1935-36 to 1939-40
	1951-52	1950-51	
Brazil	15,800	15,550	21,740
Colombia	5,700	4,500	4,202
Mexico	1,010	900	609
Guatemala	900	800	922
El Salvador	890	1,112	1,011
French West Africa	790	700	207
Angola	665	775	273
Uganda	660	650	222

whereas Europe, which had taken about 43% of the total prewar, took only 26% in 1951. Imports into the U.S. in 1952 were lower than in 1951, until exceptional arrivals in September of 1,790,000 bags were spurred by fear of a dock strike. Coffee prices in 1952 fluctuated in a narrow range just below U.S. ceilings, the Office of Price Stabilization having decided that coffee was not a fresh or processed fruit or vegetable, so not exempt from price control. Brazil decreed a minimum price of about 52 cents per pound for the 1952-53 crop and prepared to finance the crop at 80% of the minimum. Britain abolished price controls on coffee in August. Powdered coffee and some other derivatives made further progress in consumption during the year. (J. K. R.)

Coinage. The three U.S. coinage mints located at Philadelphia, Pa., San Francisco, Calif., and Denver, Colo., manufactured a total of 1,447,993,922 domestic and foreign coins during the government fiscal year 1952.

United States coin production was valued at \$74,736,479.70 and consisted of the denominations given in the table.

The composition of the half dollars, quarter dollars and dimes was 90% silver and 10% copper; five-cent pieces, 25%

Table I.—U. S. Coin Production, 1952

Denomination	Number of pieces produced
Half dollars	40,694,918
Quarter dollars	87,908,402
Dimes	191,096,602
Five-cent pieces	56,845,500
One-cent pieces	1,045,998,500
Total domestic	1,422,543,922

Table II.—Coins Manufactured for Other Governments

Government	Number of Pieces
Costa Rica	3,000,000
Dominican Republic	6,100,000
El Salvador	13,000,000
Honduras	3,000,000
Syria	350,000
Total foreign	25,450,000

nickel and 75% copper; and one-cent pieces, 95% copper and 5% zinc and tin, in conformity with U.S. coinage laws.

Coins of various alloys and denominations were manufactured for five other governments, as shown in Table II.

In addition to the coinage mints, four other mint service institutions comprising the bureau of the mint were in operation in 1952—the assay offices at New York city and Seattle, Wash., the gold bullion depository at Fort Knox, Ky., and the silver bullion depository at West Point, N.Y. The entire mint service is administered by the director of the mint, with offices in Washington, D.C.

The principal functions of the bureau of the mint, other than the manufacture of domestic and foreign coins, include the safeguarding of the government's holdings of monetary metals; acquisition of gold and silver bullion; the refining of gold and silver; administration of the issuance of treasury licences for the acquisition, ownership, possession, use and exportation of gold for industrial, professional and artistic purposes; production of medals and other decorations.

At the close of the fiscal year 1952 the mint institutions held in their custody 68,400 tons avoirdupois of gold and silver bullion valued at \$25,000,000,000. (N. T. R.)

Coke. World production of coke increased each year after the postwar low of 1945, and in 1950 and 1951 outstripped the war peak of 1943. The countries listed in Table I account for about 95% of the world total, as reported by the U.S. bureau of mines.

Table I.—World Production of Coke*

	(Thousands of short tons)					
	1946	1947	1948	1949	1950	1951
Australia	1,194	1,479	1,550	1,984	1,304	1,543
Belgium	2,646	3,380	4,116	3,828	3,575	6,731
Canada	2,857	2,973	3,435	3,352	3,417	3,402
Czechoslovakia	2,480	4,238	4,518	5,175	5,375	5,677
France	5,677	6,616	6,886	7,462	7,729	8,905
Saar	902	1,998	3,020	3,667	3,557	4,151
Germany	11,468	17,807	22,603	28,015	30,461	37,397
Great Britain	15,665	15,473	17,274	17,350	17,240	18,027
Poland	3,382	4,148	5,714	6,339	6,530	6,944
India	1,876	1,874	1,836	2,247	2,481	2,406
Italy	491	1,063	1,442	1,666	1,655	2,395
Japan	1,019	1,283	2,130	2,844	1,475	4,259
Netherlands	1,442	1,956	2,469	2,728	3,091	3,277
U.S.S.R.	16,000?	18,000?	22,000?	26,500?	29,800?	33,000
United States	58,498	73,446	74,861	63,637	72,718	79,329
Total	128,200	159,800	177,700	181,100	195,800	224,524

*Not including gashouse coke.

Table II.—Coke Production in U.S.

	(In thousands of short tons)					
	1946	1947	1948	1949	1950	1951
Production	58,498	73,446	74,862	63,637	72,718	79,331
By-product	53,929	66,759	68,284	60,222	66,891	77,987
Beehive	4,568	6,687	6,578	3,415	5,827	7,344
Breeze made	4,308	5,602	5,874	4,989	5,263	5,213
Coal charged	83,527	105,062	107,562	91,409	104,015	113,686
Consumption, total	57,322	72,611	73,756	63,191	73,417	78,093
By iron furnaces	43,098	57,636	59,286	51,515	61,039	66,623

United States.—Defense requirements boosted the 1951 coke production to a new record high that exceeded the previous 1948 record by 6% and the 1944 war peak by 7%.

The cutback in operations during the steel strike reduced output during the second quarter of 1952, with the result that the total for the first nine months of the year was 48,789,625 tons, as compared with 59,287,500 tons in the same period of 1951. (G. A. Ro.)

Coldwell, Major James (1888—), Canadian politician, was born at Seaton, Eng., Dec. 2, educated at University college, Exeter, and migrated to Canada in 1910. He spent 20 years as an educationist in Regina, Sask., during the latter years as school principal. From 1922 to 1932 he sat on the Regina city council. He joined the Saskatchewan Farmers Political association, and was provincial leader of the Saskatchewan Farmer-Labour party, 1932-35. In 1935 he won the federal riding of Rosetown-Biggart (Sask.) for the Co-operative Commonwealth (Socialistic) federation, and held it at the 1940, 1945 and 1949 elections. In 1942 Coldwell became president of the C.C.F. In the 1940-52 period, despite heavy parliamentary responsibilities, he was very active in international affairs.

During 1952 Coldwell sharply criticized the disproportionate ratio between the military and economic resources employed in the defense of the free world against Communism. He urged Canada in co-operation with the United States to implement article II under the North Atlantic Treaty organization by providing greater economic aid to bolster the economies of western Europe in the face of pressures resulting from defense programs. He urged greater use of the Colombo plan, the U.S. Point Four program and the United Nations Technical Assistance program to wage war on poverty in the underdeveloped areas of the world, and made a nation-wide appeal to all Canadians to sign a petition calling upon the federal government to initiate, in co-operation with the provincial governments, a comprehensive health insurance program. (C. Cy.)

Colleges and Universities: see UNIVERSITIES AND COLLEGES.

Collins, J(oseph) Lawton (1896—), U.S. army chief of staff, was born on May 1 in New Orleans, La., and entered the U.S. Military academy at West Point, N.Y., in 1913. After World War I he served with the occupation forces in Germany until 1921, when he began a four-year period as an instructor at West Point. Early in World War II he was given duty in the Pacific, and he won the nickname of "Lightning Joe" in the recapture of Guadalcanal. Assigned to Europe in 1943, he led the U.S. 7th corps in the invasion of France, the capture of Cherbourg, the break-through at St. Lô and the liberation of Belgium, and finally to the Elbe. He was named deputy chief of staff in 1947, vice-chief of staff in 1948 and chief of staff, U.S. army, Aug. 1949.

Following the dismissal of Gen. Douglas MacArthur in 1951, General Collins testified before a joint U.S. senate armed services and foreign policy committee that MacArthur's dispatching of U.S. troops to the Manchurian frontier had been a violation of a "clear-cut objective" to let only South Korean troops go all the way. He said the chiefs of staff had agreed that MacArthur should be removed to prevent "more serious" violations of policy.

During an inspection tour of Korea in 1952, Collins declared at Seoul on July 14 that there was no possibility that the Chinese Communists could drive U.N. forces from Korea. He threatened retaliation with "other means," presumably atomic warfare, if the reds should launch an all-out offensive.

Colombia. A republic situated in northwestern South America adjoining the isthmus of Panamá, Colombia is the only South American country with both Caribbean and Pacific coast lines. Area: 439,714 sq.mi.; pop. (1950 census of the Americas): 11,266,000. Approximately 68% of the population is classified as mixed blood, 20% as "white," 7% as Indian and 5% as Negro. Most Colombians live in the highlands and moun-

tain valleys of the interior. The capital is Bogotá (1947 pop.: 482,480). Other major cities are Barranquilla (225,430), Bucaramanga (71,240), Cali (147,160), Cartagena (106,820), Cúcuta (77,480), Ibagué (84,840), Manizales (117,760), Medellín (237,220), Neiva (39,490), Pasto (63,430), Popayán (35,960), Santa Marta (43,950) and Tunja (27,080). Language: Spanish. Religion: predominantly Roman Catholic. Presidents in 1952: technically, Laureano Gómez; but on an interim basis, Roberto Urdaneta Arbeláez.

History.—In Nov. 1951 President Gómez, leader of the extreme right wing of the Conservative party, withdrew for reasons of health from the active exercise of his office, and Minister of Government Urdaneta Arbeláez assumed the presidential duties pending Gómez' return. Constitutional guarantees remained suspended and censorship continued in force throughout 1952. On May 13 an information and propaganda office was established to co-ordinate the government's propaganda activities. On the economic front, official policy reflected a progressive tightening of controls, particularly restrictions on imports and exports. A National Economic Planning board was created in May to advise the executive on economic matters; and an Administrative Council of National Railways was set up on June 8 to reorganize rail transportation along more efficient lines. Former Pres. (1946-50) Mariano Ospina Pérez, leader of a conservative faction rivalling that of Gómez, resumed political activity in July. Many Conservatives supported the former president for re-election in 1954 in the belief that his return to office would offer promise of peace with the opposition Liberal party, which pursued a policy of political abstention throughout 1952.

Negotiations were completed on Aug. 12 for a loan from the International Bank for Reconstruction and Development to Colombia of \$25,000,000, of which \$20,000,000 would be designated for construction of the projected Magdalena River railroad. A military aid pact was signed with the U.S. on May 17. At the end of the year Colombia remained the only Latin American state with armed forces participating in the Korean conflict. (See also INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT.) (G. I. B.)

Education.—In 1948, 13,010 public and private primary schools had 765,482 pupils and 17,849 teachers. There were 601 high schools with 42,293 pupils, 153 commercial schools with 5,914 pupils, 347 night schools with 8,904 pupils and 76 normal schools with 4,411 pupils. University faculties totalled 74 in 1950, with 9,991 students and 1,590 teachers. Only 7% of the 1952 budget was earmarked for education.

Finance.—The monetary unit is the peso, valued at 39.84 cents U.S. currency, basic rate, on Sept. 30, 1952. Actual revenue in 1951 totalled 733,376,852 pesos; expenditure, 685,625,038 pesos. The 1952 budget balanced revenue and expenditure at 632,700,000 pesos. The public debt amounted to 567,055,667 pesos on Dec. 31, 1951. Currency in circulation on Sept. 30, 1952, totalled 490,000,000 pesos; demand deposits 776,000,000 pesos; time deposits 75,000,000 pesos; government deposits 123,000,000 pesos; gold reserves (June 30, 1951) U.S. \$67,000,000; dollar exchange in U.S. banks (Aug. 31, 1952) \$87,000,000. The cost of living index (Bogotá) stood at 133 in Sept. 1952 (1948=100).

Trade and Communications.—Exports in 1951 totalled 1,093,000,000 pesos; imports, 872,068,000 pesos. Leading exports were coffee (78%), petroleum (16%), bananas (2%) and sugar (2%). Leading customers were the U.S. (81%), Germany (6%), the Netherlands Antilles (5%) and Canada (2%). Important suppliers were the U.S. (69%), Germany (8%), the United Kingdom (5%), Canada (2%), Belgium (2%) and France (2%).

In 1947 there were 2,208 mi. of railroad and (1948) 11,166 mi. of improved highways. Motor vehicles (Dec. 31, 1950) included 36,374 automobiles, 23,763 trucks and 7,380 buses. Cargo received at ports on the Magdalena river in 1951 totalled 1,572,650 metric tons; passengers numbered 183,933.

Agriculture.—Coffee production in 1951 totalled 5,576,640 bags of 132 lb. each, of which 4,798,518 bags were exported, 4,311,009 bags to the U.S., 231,605 to Germany and 111,927 to Canada. Banana exports were 6,347,690 stems of which 4,776,414 stems went to the U.S. and 1,516,564 to Germany. In the 1951-52 crop year, 127,000 metric tons of wheat, 318,000 tons of rice (rough) and 490,000 tons of potatoes were produced. Sugar production (1951) included centrifugal 147,470 metric tons and panela 646,500 tons. In 1950 there were an estimated 15,200,000 cattle, 2,470,000 pigs, 531,000 goats and 1,339,000 sheep.

Manufactures.—The leading industries were foodstuffs, textiles and beverages. Production figures in 1951 included cement 648,131 metric tons and electric energy 742,712,000 kw.hr.

Mineral Production.—Production figures in 1951 included gold 430,723 troy oz.; silver 129,773 oz.; platinum 17,157 oz.; and salt 110,085 metric tons. Crude petroleum production was 38,398,000 bbl. Crude exports were 32,236,969 bbl., of which 16,740,078 bbl. went to the U.S. and 11,510,496 bbl. to the Netherlands Antilles (for refining). Refined products included 1,986,347 bbl. of gasoline.

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Colorado. A Rocky mountain state of the United States, in the west central part, Colorado has a mean elevation above sea level of 6,800 ft., the highest of any state. Admitted to the union in 1876 as the 38th state, it is known as the "Centennial state." The area of 104,247 sq.mi. includes 325 sq.mi. of water surface. The U.S. owns 34.5% of the total land area and 59.3% is in private ownership, the remainder belonging to state, county and municipal governments.

Population (1950) 1,325,089; 62.7% urban, 37.3% rural; 93.4% native white; 4.5% foreign-born white; 1.5% Negro; .6% other. As of July 1951 the U.S. census bureau reported a population of 1,376,000. Capital, Denver, pop. (1950 census) 415,786. Other cities (1950 census) Pueblo, 63,685; Colorado Springs, 45,472; Greeley, 20,354.

History.—The second regular session of the 38th assembly convened Jan. 2, 1952, and adjourned Feb. 9, 1952. Outstanding laws enacted included: a public school finance act, a comprehensive far-reaching rewriting of all school finance laws, and the distribution of state financial aid; reorganization of the state highway commission, giving its members more responsibility and authority; more stringent penalties on narcotic law violations; taxation of co-operatives, similar to the federal act. Colorado was the first state in the union to enact such a statute.

The principal state officers as a result of the 1952 elections were: Daniel I. J. Thornton, governor; Gordon Allott, lieutenant governor; Homer M. Bruce, secretary of state; Homer F. Bedford, treasurer; Duke W. Dunbar, attorney general; Earl E. Ewing, auditor. Republicans occupied all but one of the major state offices. Burtis E. Taylor was acting commissioner of education.

Education.—The state appropriation for education in the public schools for 1952-53 was \$12,500,000. The average current expense per pupil in average daily attendance was approximately \$250; the average daily attendance was approximately 211,000 during 1951-52. The school population, including persons 6 to 21 years of age, amounted to 316,200 in 1952. A total of 10,705 teachers and administrators were employed in the Colorado public schools during 1951-52.

During the fiscal year 1950-51 the 132 county and municipal libraries in Colorado loaned more than 4,000,000 books, films, recordings and other library materials to their patrons.

Social Insurance and Assistance, Public Welfare and Related Programs.—Disbursements for welfare purposes for assistance and administration in 1951 amounted to \$60,436,079.36. Of this amount, \$45,953,413.78 was expended for old-age pensions, including burials; \$5,980,552.31 for aid to dependent children; \$286,880.72 for aid to the blind for awards, treatment and burials; \$3,548,223.68 for general assistance; \$540,121.02 for tuberculosis hospitalization, including outpatient care and burials; \$251,104.38 for child welfare; \$1,162,118.85 for aid to the needy, including burials; and \$2,713,664.62 for state office and county administration expenses. Federal participation during 1951 in money payments under the old-age pension, aid to dependent children, aid to the blind, and aid to the needy disabled programs, and in administration of these programs, amounted to \$21,715,014.15.

The average monthly number of recipients receiving cash payments by program were as follows (computed on an 11-mo. period): for old-age pensions, 52,113 received an average of \$73.44; aid to dependent children, 14,941 received an average of \$33.46 per child; 359 aid to the blind cases received an average of \$59.89; aid to the needy disabled, 2,188 cases received an average of \$48.29.

Communications.—Highways (state and federal) in 1951 totalled 75,589 mi. Total funds disbursed for highways in 1951 amounted to \$21,842,998. Improved roads totalled 23,365 mi., unimproved roads 52,224 mi.

Registered motor vehicles in 1951 numbered 622,294. There were 36 bus companies serving the state, and 14 steam (1 electric) railroads had a total railroad mileage within the state of 4,045. There were five scheduled air lines serving the state; one exclusively air freight carrier, one intrastate flying service. There were 166 airports and landing fields operating, of which 61 were personal-use type fields.

Telephones in use on June 30, 1952, numbered 472,067. There were 34 standard AM radio stations and 3 FM stations, plus 1 educational FM station. There was one television station.

Banking and Finance.—As of Jan. 1952 there were 77 national banks and 73 state banks. Deposits in all banks at the close of 1951 totalled \$1,309,710,794.20. Clearings in Denver (1951) \$6,986,185,436.54; in

Table I.—Principal Crops of Colorado

Crop	Indicated 1952	1951	Average, 1941-50
Corn, bu.	12,558,000	15,782,000	14,622,000
Wheat, all, bu.	50,159,000	34,967,000	37,371,000
Oats, bu.	6,840,000	5,820,000	6,138,000
Barley, bu.	9,548,000	9,541,000	16,477,000
Sugar beets, tons.	1,863,000	1,906,000	1,892,000
Potatoes, bu.	17,390,000	11,475,000	17,627,000
Dry beans, 100-lb. bags.	1,881,000	1,624,000	2,012,000
Broomcorn, tons	2,600	8,300	12,200
Sorghum grain, bu.	560,000	3,048,000	2,694,000
Hay crops, tons	2,383,000	2,036,000	2,212,000
Apples, commercial, bu.	1,260,000	1,292,000	1,395,000
Peaches, bu.	2,053,000	316,000	1,881,000
Pears, bu.	228,000	193,000	187,000
Cherries, tons	2,070	3,580	3,670

Source: U.S. Department of Agriculture.

Table II.—Mineral Production of Colorado

(In short tons, except as noted)

Mineral	1950		1949	
	Quantity	Value	Quantity	Value
Clays	310,000	\$ 619,000	255,000	\$ 499,000
Coal	4,259,000	21,669,000	4,636,000	23,735,000
Coke*	805,000	?	730,000	?
Copper	3,000	1,307,000	2,000	947,000
Feldspar	66,000	329,000	68,000	341,000
Fluorspar	18,000	654,000	22,000	763,000
Gold (oz.)	130,000	4,564,000	103,000	3,592,000
Lead	27,000	7,292,000	27,000	8,486,000
Molybdenum	12,000	?	5,000	?
Natural gas (thousand cu.ft.)	11,168,000	436,000	8,490,000	443,000
Natural gasoline (bbl.)	217,000	584,000	152,000	463,000
Petroleum (bbl.)	23,303,000	59,420,000	23,587,000	60,150,000
Petroleum gases (bbl.)	169,000	289,000	189,000	281,000
Sand and gravel	5,154,000	3,940,000	4,751,000	2,965,000
Silver (oz.)	3,492,000	3,161,000	2,895,000	2,620,000
Stone	1,680,000	2,776,000	1,817,000	2,804,000
Zinc	46,000	13,000,000	48,000	11,830,000
Other minerals		34,525,000		19,939,000
Total		\$154,897,000		\$139,858,000

*Values for processed materials are not included in the totals.

†Value included with other minerals.

Pueblo \$158,106,393.92; in Colorado Springs \$169,759,061.04.

The cash balance in the treasury as of June 30, 1952, was \$56,967,365.59. Total revenue in the fiscal year ended June 30, 1952, was \$177,627,220.17. All expenditures, including functional services, debt services and transfers, amounted to \$175,888,093.10. There was no bonded indebtedness. Highway anticipation warrants totalled \$3,670,000. Outstanding warrants, cash and general revenue amounted to \$9,478,201.60. Investments, June 30, 1952, of \$41,947,913.10, plus a cash balance of \$56,967,365.59, made a total of \$98,915,278.69 in liquid assets. The state surplus at the close of the fiscal year, June 30, 1952, was \$21,000,000.

Agriculture.—The cash income from farm marketings in 1951 aggregated \$537,000,000, of which \$370,000,000 resulted from the sale of livestock and livestock products and \$167,000,000 from the sale of crops. Government payments made under specific agricultural conservation programs were not included nor was the value of products produced on the farm and consumed for the most part where produced or grown.

The number of cattle and calves on farms Jan. 1, 1952, was at a record-high level at 2,117,000 head. The number of stock sheep totalled 1,299,000 head. In addition to the number of stock sheep and lambs there were 625,000 head of sheep and lambs in dry feed lots being fattened for market. Hogs and pigs totalled 312,000 head.

Manufacturing and Industry.—The department of commerce estimate for the value added to Colorado manufactures in 1951 was \$340,795,000. There were 1,705 industries in the state, employing 92,608 in agriculture and 444,105 in nonagricultural establishments, or a total labour force of 536,713. Capital expenditures in 1951 for new plants and equipment totalled \$32,189,000. Salaries and wages totalled \$144,207,000.

Tourist travel in Colorado is the third largest industry in the state. In 1951 the income derived from 3,010,000 travellers was \$220,709,000. (P. A. E.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in Colorado in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Colorado ranks first in the production of molybdenum and fourth in lead, and 20th in the value of mineral output, with 1.31% of the U.S. total.

Columbia, District of: see WASHINGTON, D.C.

Cominform: see COMMUNISM.

Commerce: see BUSINESS REVIEW; INTERNATIONAL TRADE.

Commerce, U.S. Department of: see GOVERNMENT DEPARTMENTS AND BUREAUS, U.S.

Commodity Credit Corporation: see AGRICULTURE.

Commodity Prices: see BUSINESS REVIEW; PRICES.

Commodity Trading: see AGRICULTURE.

Commons, House of: see PARLIAMENT, BRITISH.

Commonwealth Fund: see SOCIETIES AND ASSOCIATIONS, U.S.

Commonwealth of Nations. The following table gives essential data on the British Commonwealth as at Dec. 31, 1952.

Commonwealth of Nations

Country	Area sq. mi. (approx.)	Population* (000's omitted)	Capital	Status	Rulers, Governors and Premiers
Europe					
Great Britain and N. Ireland, United Kingdom of	94,205	50,212†	London	Kingdom	Queen: Elizabeth II Prime Minister of Great Britain: Winston Churchill Governor of Northern Ireland: Lord Wakeshurst Prime Minister of Northern Ireland: Viscount Brookeborough
Channel Islands					
Jersey	45	57†	St. Helier	Parts of the United Kingdom	Lt. Gov.: Sir A. E. Grasset Lt. Gov.: Sir Philip Neame Lt. Gov.: Sir Geoffrey Bromet Gov.: Lieut. Gen. Sir Gordon Macmillan Gov.: Sir Gerald Creasy Prime Minister: G. Borg Olivier
Guernsey, etc.	30	45†	St. Peter Port		
Isle of Man	221	55	Douglas		
Gibraltar	212	23†			
Malta	122	313	Valletta	Colony Self-governing colony	
Asia					
Aden	112,080	750		Colony and protectorate	Gov.: Tom Hickinbotham
British Borneo:					
North Borneo	29,387	334†	Jesselton	Colony	Gov.: Sir Ralph Hone
Brunei	2,226	48	Bathurst	Protectorate	High Commissioner } Sir Anthony Abell
Sarawak	47,071	570	Kuching	Colony	Governor
Ceylon	25,332	7,743	Columbo	Dominion	Gov. Gen.: Lord Soulbury Prime Minister: Dudley Senanayake
Cyprus	3,572	492	Nicosia	Colony	Gov.: Sir Andrew Wright
Hong Kong	391	2,013	Victoria	Colony	Gov.: Sir Alexander Grantham
India	1,138,814	356,892†	New Delhi	Republic	President: Rajendra Prasad Prime Minister: Jawaharlal Nehru Commissioner-General for S.E. Asia: Malcolm Macdonald
Malaya, Federation of	50,680	5,337	Kuala Lumpur	2 settlements and 9 protected states	High Commissioner: Gen. Sir Gerald Templar
Pakistan	365,907	75,687†	Karachi	Dominion	Gov. Gen.: Ghulam Mohammed Prime Minister: Khwaja Nazimuddin
Singapore	282	1,041†	Singapore	Colony	Gov.: John Nicoll
Africa					
Anglo-Egyptian Sudan	967,500	8,740	Khartoum	Condominium	Gov. Gen.: Sir Robert Howe
British South African Protectorates:					
Basutoland	11,716	578	Maseru	Colony	High Commissioner: Sir John Le Rougetel
Bechuanaland	275,000	290		Protectorate	
Swaziland	6,704	200	Mbabane	Protectorate	
Gambia	4,074	279†	Bathurst	Colony and protectorate	
Gold Coast, including Togoland	91,843	4,333	Accra	Colony, protectorate and trust territory	Gov.: Sir Percy Wyn Harris
Kenya	224,960	5,680	Nairobi	Colony and protectorate	Gov.: Sir Charles Arden-Clarke
Mauritius	807	500	Port Louis	Colony	Gov.: Sir Philip Mitchell
Nigeria, including Cameroons	372,674	26,000	Lagos	Colony, protectorate and trust territory	Gov.: Sir Hilary Blood
Nyasaland	48,444	2,400	Zomba	Protectorate	Gov.: Sir John Macpherson
Rhodesia, Northern	290,320	1,947	Lusaka	Protectorate	Gov.: Sir Geoffrey Colby
Rhodesia, Southern	150,333	2,146†	Salisbury	Self-governing colony	Gov.: Sir Gilbert McCall Rennie
St. Helena	126	5	Jamestown	Colony	Gov.: Maj. Gen. Sir John Noble Kennedy
Seychelles	156	37	Victoria	Colony	Prime Minister: Sir Godfrey Huggins
Sierra Leone	27,925	1,891	Freetown	Colony and protectorate	Gov.: Sir George Joy
Somaliland	67,936	500	Hargeisa	Protectorate	Gov.: Frederick Crawford
South-West Africa	317,725	430,354†	Windhoek	Mandate (under South Africa)	Gov.: Sir George Beresford-Stooke
Tanganyika	362,688	7,827	Dar-es-Salaam	Trust territory	Gov.: Sir Gerald Reece
Tanganyika	93,981	5,187	Entebbe	Protectorate	Administrator: A. J. R. van Rhyn
Union of South Africa	472,494	12,646†	Pretoria, Capetown and Bloemfontein	Dominion	Gov.: Sir Edward Twining
Zanzibar	1,020	273	Zanzibar	Protectorate	Gov.: Sir Andrew B. Cohen
America					
Bahamas	4,375	81	Nassau	Colony	Gov. Gen.: Ernest Jansen
Barbados	166	213	Bridgetown	Colony	Prime Minister: Daniel F. Malan
Bermuda	21	37†	Hamilton	Colony	Resident: John Dalzell Rankine
British Guiana	83,000	431	Georgetown	Colony	
British Honduras	8,598	70	Belize	Colony	
Canada	3,843,144	14,430†	Ottawa	Dominion	
Cook Islands	4,618	2	Stanley	Colony	
Jamaica (and Dependencies)	4,677	1,430	Kingston	Colony	
Leeward Islands	422	118	St. John's	Colony	
Trinidad and Tobago	1,980	643	Port of Spain	Colony	
Windward Islands	821	280	St. George's	Colony	
Australasia					
Commonwealth of Australia	2,974,581	8,539	Canberra	Dominion	Gov. Gen.: Sir William McKell Prime Minister: Robert Gordon Menzies
Fiji	7,040	298	Suva	Colony	Gov.: Sir Alfred Savage
Guam	8	3		Trust territory (under Australia)	Gov.: Sir Alexander Hood
New Hebrides	4,633	49	Vila	Franco-British condominium	Gov.: Sir Charles Woolley
New Zealand (and Dependencies)	103,939	1,961†	Wellington	Dominion	Gov.: Patrick Renison
Pacific Islands	12,138	189	Honiara	Colonies and protectorates	Gov. Gen.: Vincent Massey
Papua-New Guinea	183,540	1,472	Port Moresby	Australian territory and trust territory	Prime Minister: Louis St. Laurent
Western Samoa	1,133	82†	Apia	Trust territory (under New Zealand)	Gov.: Sir Miles Clifford
					Gov.: Sir Hugh Foot
					Gov.: Sir Kenneth W. Blackburne
					Gov.: Maj. Gen. Sir Hubert Rance
					Gov.: Sir Robert Arundell

*1951 est. if not otherwise stated.

†1951 census.

‡1950 census.

Communism. Communism in 1952 continued and intensified its propaganda against the United States, which it presented as driving the world into a war against the U.S.S.R., which in turn was praised as the bulwark of peace, thwarting sinister plans of the capitalistic ruling classes. On the one hand, the Communist spokesmen insisted on the might

and invincibility of communism and its soviet Russian motherland; on the other hand, they stressed the growing danger of war. In the February issue of *Questions of Philosophy*, the official journal of the Institute of Philosophy of the Academy of Science of the U.S.S.R., an article by V. V. Nikolaev stressed, that even after the victory of socialism in the U.S.S.R., there

could be no "withering away" of the state until after the total liquidation of the "capitalist encirclement." The incessant strengthening of the army and intelligence services of the soviet state was needed in order to crush the "new aggressors." The U.S. government and its intentions were frequently compared with those of Hitler's Germany and a similar fate was predicted for the "new Hitlers." The "strategy of peace" against U.S. "war-mongering" was intensified; several peace congresses worked for that purpose in various countries, but the temper stressed by the Communist leaders was not that of pacifism but one of fervent and pitiless hatred against non-Communist or anti-Communist peoples. The Communist peace partisans opposed "unjust wars," *i.e.*, wars of which Joseph Stalin did not approve. On the contrary, they glorified wars for the "liberation from capitalism or imperialism."

In a long and important statement in the magazine *Bolshevik* on Oct. 2, Stalin predicted, however, that the next wars might not be fought between "the camp of capitalistic aggressors led by the United States" and the peace-loving Communist nations led by the U.S.S.R., but among the capitalist countries themselves. He expressed the conviction that Great Britain and France would soon resist the economic and political encroachment of U.S. imperialism on their sovereignty and their empires. He also suggested that Germany and Japan, "countries now squeezing out a pitiful existence under the heel of American imperialism," would try again to rise as independent world powers. Stalin reverted to the old Leninist thesis, that wars between capitalistic countries are inevitable and are rooted in their competition for markets and raw materials. Apparently Stalin did not believe in the growth and duration of the Atlantic union, which the Communists did their best to undermine.

The article by Stalin, which appeared simultaneously in pamphlet form in a first printing of 1,500,000 copies, was greeted by *Pravda* as "the greatest event in the ideological life of the party and the Soviet people." It was issued on the eve of the 19th congress of the Communist party of the U.S.S.R., the first congress held since March 1939. In his concluding address to the congress on Oct. 15, Stalin called upon all foreign Communist parties to support the U.S.S.R. and thus to serve the best interests of their native lands. He especially praised the pledges given by the Communist parties of France and Italy—whose leaders, Maurice Thorez and Palmiro Togliatti, were personally present—that their peoples would never fight in a war against the U.S.S.R. He exhorted the foreign Communists vigorously to defend democratic liberties in their own lands against their bourgeois governments and to insist upon the full sovereignty of their nations, a sovereignty threatened, according to Stalin, by these same bourgeois governments, which were selling it out "for dollars."

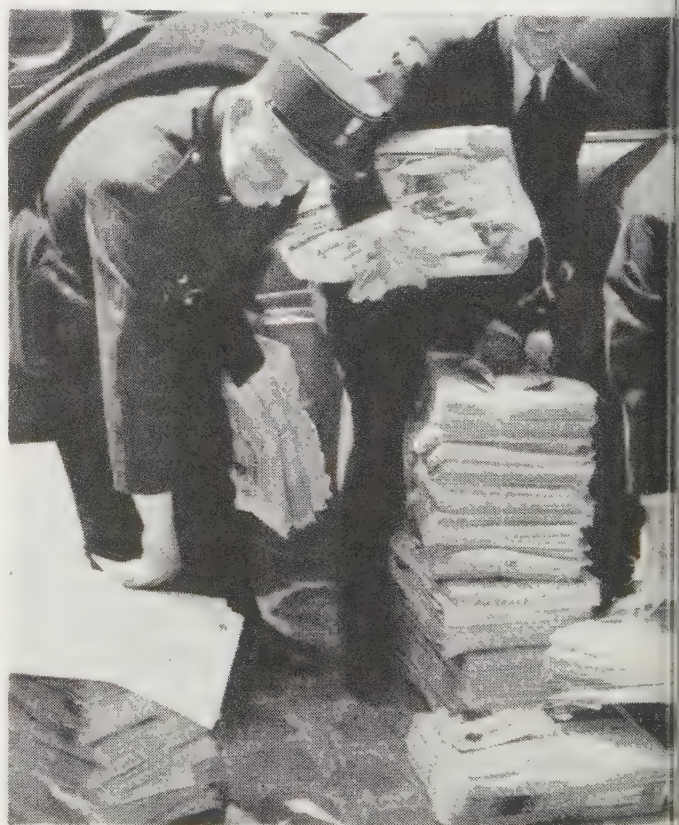
In his article, which was put in the form of answers to questions discussed a year before by soviet economists, Stalin maintained that the position of capitalism was rapidly worsening. On the other hand, the Communist lands, suffering under the trade restrictions imposed by the capitalist countries, would "soon" no longer need to import goods but would be able to export their own surplus production. This hopeful statement implied the acknowledgment that the strong and sustained efforts of the Communists to end the blockade had failed and that the Communist nations, especially China, would have to face in the future the lack of vitally needed machinery. In a comforting vision of the future, Stalin promised the soviet people an early transition to "communism," comprising the doubling of real wages, a five- or six-hour working day, and a product exchange system on collective farms which would end the selling of surplus products on the open market.

The congress also adopted several organizational changes.

The Politburo of 12 members was replaced by a Presidium of the Central Committee, which, though widened to 25 members, included practically the same personnel. This reorganization was apparently part of the stress on tighter party discipline, as ordered by the central committee of the party in the *Pravda* on Aug. 26. It reminded the party leaders of the need for extreme vigilance against dishonest conduct and against a number of abuses that had crept into party work.

Though Stalin's stand and the deliberations of the congress seemed to envisage no armed conflict between the United States and the U.S.S.R. in the near future, the "cold war" between the two countries reached a new pitch with Moscow's demand for the recall of United States ambassador George F. Kennan, who had assumed his position in the hope of effecting some improvement in the relationship between the two countries. The failure of the truce negotiations in Korea, which after 15 months still seemed far from successful conclusion, also militated against a relaxation of the tension between the Communist and the anti-Communist world. In imitation of the example set by Moscow, Communist China called an Asian peace congress to Peking to protest "American imperialist aggression" in Asia.

Within the U.S.S.R. much dissension was apparently caused by the growing emphasis on the leading role of the Russian nationality and its precedence over all the peoples inhabiting the vast Stalinist empire. While in the first decade of the soviet regime the equality of the various nationalities was emphasized and, at least outwardly, preserved, the U.S.S.R. began to assume a more and more outspoken Russian character after World War II. The drive against the nationalism of the non-Russian nationalities was intensified in the middle of 1951 and later grew in intensity and scope. The primary target of this attack against "bourgeois nationalism" was the Ukraine, but it was extended to virtually every nationality in the U.S.S.R., especially the Mohammedan peoples of central Asia. The central committees



PARIS POLICE confiscating bundles of the French Communist newspaper *L'Humanité*, in May 1952, after large-scale rioting against Gen. Matthew B. Ridgway who replaced Gen. Eisenhower as Supreme Allied commander in Europe.

of the various national republics, meeting in the spring and summer of 1952, subjected many high party officials and leading Communist writers and scholars of the various nationalities to very sharp criticism for failure to carry out measures to eliminate "bourgeois nationalist" faults and to improve the ideological content of scholarly and artistic activities. Many high ranking or renowned Communists among the non-Russian nationalities were removed from their positions. Many provincial and local committees were accused of insufficient ideological preparation of their leading groups. Many scholars and writers among the Mohammedan soviet peoples were criticized for their "cosmopolitan" pan-Islamic or pan-Turanian leanings and for their misrepresentation of the past of their peoples. While formerly the official Bolshevik party theory had represented the independence movements of the Mohammedan and other subject peoples against Russian tsarist imperialism as "progressive" efforts at liberation, the new official thesis emphasized that the subjection of these peoples by tsarist Russia carried with it "a deep progressive significance" for the non-Russian nationalities, and that the union, even with tsarist Russia, was always desired "by the progressive part" of native society.

This trend of Russification made itself felt not only among the non-Russian nationalities of the U.S.S.R. but also among the people's democracies in eastern Europe. Not only were the armed services and the economic systems of those countries assimilated to those of the U.S.S.R., but an ever greater emphasis was put upon the learning of the Russian language, the reading and glorification of Russian literature, and the re-interpretation of the national histories in the sense of extolling friendship with, and gratitude to, the U.S.S.R. Efforts of this kind were extended in 1952 to the German Democratic Republic, the soviet satellite of eastern Germany. Apparently greater independence was left to the Communist regime in China, because the Kremlin seemed concerned not to allow a repetition of the Titoist experience in Yugoslavia, though the Cominform (Communist Information bureau), which had seen its main task for the last four years in the fight against Tito's Yugoslavia, proved impotent to destroy or even to harm this chief heresy within the Communist camp. Titoism on the other hand showed insufficient strength in its efforts to spread outside Yugoslavia and to create an anti-Stalinist Communist movement, directed above all against Russian imperialism. There were in 1952 fewer reports on dissensions in the Communist parties outside the soviet orbit than in the preceding years. However, in France two important Communist leaders, André Marty and Charles Tillon, were demoted in the early fall and were accused of differing with the party line regarding the role of the U.S.S.R. and of the secretary general of the French Communist Party, Maurice Thorez, whose "unconditional and indefectible attachment to the Soviet Union" was praised at the same time. In the United States, the issue of communism and above all of Communist infiltration into governmental and other crucial positions continued to occupy public attention. The United States district court in Los Angeles, Calif., after a trial of six months, found 14 Communist party leaders guilty of conspiring to teach and advocate the overthrow of the government by force and violence. This trial was a sequel to the 1949 New York trial of 11 top-ranking party officials, whose conviction on similar charges was upheld by the United States supreme court. In the prevailing atmosphere of the "cold war" and of aroused vigilance, communism suffered a setback in the United States in 1952. The same was the case in western Europe. In all the elections held there, the number of Communist voters declined.

The picture in Latin America and in some Asiatic countries was different. Communism there entered into an alliance with



"IS CATCHING COMRADE BUM DRUNK and disorderly because of Capitalist propaganda . . . is claiming he is engaged in pursuit of happiness . . ." a 1952 cartoon by Lichty which appeared in the *Chicago Sun-Times*

extreme nationalism. That was especially true in Latin America, where both movements regarded "Yankee imperialism" as their chief target. In Central America, Guatemala was recognized as the strongest Communist beachhead in the western hemisphere, situated on the strategic flanks of the United States and its South American neighbours. Even in friendly Mexico, the breakdown in the negotiations for a military aid agreement between the United States and Mexico was hailed by the Communists as "one of the most serious defeats inflicted on the oppressive war diplomacy of the United States in Mexico and Latin America." In Brazil, whose Communist leader Luiz Carlos Prestes, perhaps the ranking Communist of South America, was a former professional army officer, the new minister of war, Gen. Ciro Cardoso, warned on April 30 that communism disguised as nationalism had penetrated the army and asked all officers to maintain the most rigorous vigilance so that any surprise action might be avoided. He recalled the abortive Communist revolt of November 1935, which had caused an outlawing of the Communist party in 1937; nevertheless, many Communist dailies and weeklies were published in Brazil, and until General Cardoso's warning, his predecessors as ministers of war had not taken action against Communist influence in the army. Of the free Asiatic nations, India seemed the one in which communism made the greatest progress in 1952, both among certain intellectuals and among the peasants in the southern Indian states of Travancore-Cochin, Madras and Hyderabad.

(See also AUSTRIA; BURMA; CHINA; DEMOCRACY; EDUCATION; GUATEMALA; LAW; SOCIALISM; SOUTH AFRICA, THE UNION OF.)

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Community Chest. The community chest is the name given to a local federation made up of health, welfare and recreation agencies which are supported by voluntary contributions. Its purpose is to raise annually, through a single campaign, funds for the support of its member agencies. Associated with, or a part of the chest in many cities, is the community welfare council, the purpose of which is to promote joint planning for health and welfare in the community, and to co-ordinate the services of its member agencies.

The national association of local chests and councils is Community Chests and Councils of America, Inc., which was established in 1918.

Of the 2,050 community chests and welfare councils in operation in July 1952 (1,595 chests and 455 councils), 1,528 chests and 424 councils were in the continental U.S.; 5 chests and 3 councils in Hawaii; 54 chests and 25 councils in Canada; 1 chest in South Africa; 1 chest in the Virgin Islands; 1 chest in Cuba; 1 chest in Australia; 1 council in Greece; 1 council in the British West Indies; 1 chest and 1 council in Japan; 1 chest in the Philippines; 1 chest in Alaska; and 1 chest in the Canal Zone. Almost every city in the U.S. (except New York city, which has a limited joint-financing organization and a welfare council) in 1952 had a community chest or similar plan of federated financing for its voluntary social services. In 1,500 cities in 1951, more than 20,000,000 contributions totalling \$240,920,220 were given to community chests to be used during 1952 for voluntary health and welfare services in their communities.

In 1951 more than 50 chest cities moved toward a broader type of federated fund raising by organizing united campaigns, sometimes under chest auspices, sometimes under a new organization of which the chest was a part. Such campaigns included funds both for local agencies and for certain national health appeals which wished to be included. This trend was credited to the demand by contributors, notably corporations and employee groups, for fewer separate campaigns during the year.

National promotion of chest campaigns is carried on under the name "United Red Feather Campaigns of America," using the national symbol of the red feather.

Officers of Community Chests and Councils of America, Inc., for 1952 included: honorary president, Gerard Swope, New York city; president, H. J. Heinz II, Pittsburgh, Pa.; treasurer, H. L. R. Emmet, Erie, Pa.; secretary, Walter G. Davis, Portland, Me. Ralph H. Blanchard was executive director. Headquarters are at 155 E. 44 St., New York city. (B. A.)

Community Trusts. An aggregate of \$110,091,128 was reported as the assets of community trusts and foundations in the United States, Canada and Hawaii at Jan. 1, 1952. During 1951 these composite charitable foundations appropriated \$5,003,811 and received new resources totalling \$8,151,630.

The largest of these foundations was the New York Community trust whose 102 funds were valued at \$19,178,448. The Cleveland foundation reported \$17,112,607; Chicago Community trust, \$11,549,948; Permanent Charity fund, Boston, Mass., \$10,166,417; and California Community foundation, Los Angeles, \$7,593,687.

Of the disbursements made in 1951, the New York Community trust paid out \$1,164,912; Chicago Community trust, \$517,942; Cleveland foundation, \$484,918; Winston-Salem foundation, \$479,063; and Permanent Charity fund, Boston, \$475,320.

Funds newly created in that year included \$4,173,183 accruing to the Cleveland foundation, \$589,539 reaching the New York Community trust, and \$425,924 added to the Winston-Salem foundation.

Of 71 community trusts surveyed in 1952, 62 were administering principal resources and 56 were making current distributions out of 972 funds on hand. Their cumulative disbursements from 1931 through 1951 stood at \$43,694,357.

A community trust consists, usually, of a series of trust funds of varied sizes, held by a number of corporate trustees and applied for diverse charitable uses under the central supervision of a joint distributing committee. The trustee of a given fund is ordinarily chosen by its founder. The distributing committee, when authorizing disbursements by the trustee, customarily undertakes to give expression to the specific charitable desires of a founder—stated either when the trust is created or perhaps (in cases of living trusts) subsequently—but is likewise empowered to take appropriate remedial action if previously expressed preferences later become impossible or impractical of execution. (R. Hs.)

Confectionery: see CANDY.

Congo, Belgian: see BELGIAN COLONIAL EMPIRE.

Congregational Christian Churches. The Congregational Christian Churches are a Christian communion the first of whose members came to the United States in the "Mayflower" in 1620 and in the general immigration to Massachusetts Bay beginning in 1629.

As of Jan. 1, 1952, the total number of Congregational Christian churches in the United States was 5,620, with a combined membership of 1,241,477. These figures indicate a decrease in the number of churches during the year and an increase (13,950) in the number of communicants.

At the beginning of the year there were 5,789 ministers of whom 3,280 were pastors of churches. Those who were not pastors were for the most part engaged in Christian service in schools, colleges, the missionary field abroad, the military chaplaincy and organizations such as the Y.M.C.A. In 1951, 130 candidates were ordained, the largest number to enter into the Congregational Christian ministry since the year 1903.

At the beginning of 1952 there were 646,086 children in the church schools of the communion, reporting a gain of 26,407 during the year preceding.

At the biennial meeting of the general council, held in Claremont, Calif., in June 1952, three actions of unusual importance were discussed and determined:

1. The proposed union of the Evangelical and Reformed Church with the Congregational Christian Churches received new impetus. The appellate division of the supreme court of the state of New York had, in the spring, reversed the judgment of a lower court which had enjoined further procedure in the direction of union. This reversal had freed the denomination to resume negotiations with the Evangelical and Reformed Church. The general council declared its willingness to enter into joint meetings with the appropriate body of the other denomination as soon as the case was completely out of court (one further appeal being possible) and expressed the hope that a constitution for the proposed national body (the General Synod of the United Church of Christ) should be prepared before the union was effected.

2. The Council for Social Action, an organization devoted to the Christianizing of social relations, having been under attack by certain politically conservative groups within the denomination, the general council approved the appointment of a board of review of nine members to inquire into the history and prospects of the Council for Social Action and, if the board felt necessary, to suggest changes in its structure and methods.

3. In view of the vast population shifts in the United States

and in order to take a fair share of responsibility for planting new Protestant churches in the rapidly developing new communities of the country, the general council voted unanimously to attempt to raise a fund of \$4,500,000 for loans on a revolving basis to congregations in need of new buildings. This fund was to be administered by the Board of Home Missions of the Congregational Christian Churches. (See also CHURCH MEMBERSHIP.)

(D. Ht.)

Congress, United States. The results of the Nov. 1952 election, as of Nov. 17, 1952, indicated that the following members would comprise the 83rd U.S. congress.

United States Senate: Democrats, 47; Republicans, 48; Independent, 1.

State	Name	Party	Term Expires	Residence
Ala.	Sparkman, John	Dem.	1955	Huntsville
	Hill, Lister	Dem.	1957	Montgomery
Ariz.	Hayden, Carl	Dem.	1957	Phoenix
	Goldwater, Barry	Rep.	1959	Phoenix
Ark.	McClellan, John L.	Dem.	1955	Camden
	Fulbright, J. W.	Dem.	1957	Fayetteville
Calif.	Nixon, Richard M. ¹	Rep.	1957	Whittier
	Knowland, William F.	Rep.	1959	Oakland
Colo.	Johnson, Edwin C.	Dem.	1955	Denver
	Millikin, Eugene D.	Rep.	1957	Denver
Conn.	Bush, Prescott	Rep.	1957	Greenwich
	Purtell, William A.	Rep.	1959	Hartford
Del.	Frear, J. Allen, Jr.	Dem.	1955	Dover
	Williams, John J.	Rep.	1959	Millsboro
Fla.	Smathers, George A.	Dem.	1957	Miami
	Holland, Spessard L.	Dem.	1959	Bartow
Ga.	Russell, Richard B.	Dem.	1955	Winder
	George, Walter F.	Dem.	1957	Vienna
Ida.	Dworshak, Henry C.	Rep.	1955	Burley
	Welker, Herman	Rep.	1957	Payette
Ill.	Douglas, Paul H.	Dem.	1955	Chicago
	Dirken, Everett McKinley	Rep.	1957	Pekin
Ind.	Capehart, Homer E.	Rep.	1957	Washington
	Jenner, William E.	Rep.	1959	Bedford
Iowa	Gillette, Guy M.	Dem.	1955	Cherokee
	Hickenlooper, Bourke B.	Rep.	1957	Cedar Rapids
Kan.	Schoeppel, Andrew F.	Rep.	1955	Wichita
	Carlson, Frank	Rep.	1957	Topeka
Ky.	Cooper, John Sherman	Rep.	1955	Somerset
	Clements, Earle C.	Dem.	1957	Morganfield
La.	Ellender, Allen J.	Dem.	1955	Houma
	Long, Russell B.	Dem.	1957	Baton Rouge
Me.	Smith, Margaret Chase	Rep.	1955	Skowhegan
	Payne, Frederick G.	Rep.	1959	Waldoboro
Md.	Butler, John Marshall	Rep.	1957	Baltimore
	Beall, J. Glenn	Rep.	1959	Frostburg
Mass.	Saltonstall, Leverett	Rep.	1955	Dover
	Kennedy, John F.	Dem.	1959	Boston
Mich.	Ferguson, Homer	Rep.	1955	Detroit
	Potter, Charles E.	Rep.	1959	Cheboygan
Minn.	Humphrey, Hubert H.	Dem.	1955	Minneapolis
	Thye, Edward J.	Rep.	1959	Northfield
Miss.	Eastland, James O.	Dem.	1955	Doddsville
	Stennis, John C.	Dem.	1959	De Kalb
Mo.	Hennings, Thomas C., Jr.	Dem.	1957	St. Louis
	Symington, W. Stuart	Dem.	1959	Creve Coeur
Mont.	Murray, James E.	Dem.	1955	Butte
	Mansfield, Michael J.	Dem.	1959	Missoula
Neb.	Griswold, Dwight	Rep.	1955	Scottsbluff
	Butler, Hugh	Rep.	1959	Omaha
Nev.	McCarran, Patrick	Dem.	1957	Reno
	Malone, George W.	Rep.	1959	Reno
N.H.	Bridges, Styles	Rep.	1955	Concord
	Tobey, Charles W.	Rep.	1957	Temple
N.J.	Hendrickson, Robert C.	Rep.	1955	Woodbury
	Smith, H. Alexander	Rep.	1959	Princeton
N.M.	Anderson, Clinton P.	Dem.	1955	Albuquerque
	Chavez, Dennis	Dem.	1959	Albuquerque
N.Y.	Lehman, Herbert H. ²	Dem.	1957	New York city
	Ives, Irving M.	Rep.	1959	Norwich
N.C.	Smith, Willis	Dem.	1955	Raleigh
	Hoey, Clyde R.	Dem.	1957	Shelby
N.D.	Young, Milton R.	Rep.	1957	La Moure
	Langer, William	Rep.	1959	Bismarck
Ohio	Taft, Robert A.	Rep.	1957	Cincinnati
	Bricker, John W.	Rep.	1959	Columbus

State	Name	Party	Term Expires	Residence
Okla.	Kerr, Robert S.	Dem.	1955	Oklahoma City
	Monroney, Mike	Dem.	1957	Oklahoma City
Ore.	Cordon, Guy	Rep.	1955	Roseburg
	Morse, Wayne	Ind.	1957	Eugene
Pa.	Duff, James H.	Rep.	1957	Carnegie
	Martin, Edward	Rep.	1959	Washington
R.I.	Green, Theodore Francis	Dem.	1955	Providence
	Pastore, John O.	Dem.	1959	Providence
S.C.	Maybank, Burnet R.	Dem.	1955	Charleston
	Johnston, Olin D.	Dem.	1957	Spartanburg
S.D.	Mundt, Karl E.	Rep.	1955	Madison
	Case, Francis	Rep.	1957	Custer
Tenn.	Kefauver, Estes	Dem.	1955	Chattanooga
	Gore, Albert	Dem.	1959	Carthage
Tex.	Johnson, Lyndon B.	Dem.	1955	Johnson City
	Daniel, Price	Dem.	1959	Liberty
Utah	Bennett, Wallace F.	Rep.	1957	Salt Lake City
	Watkins, Arthur V.	Rep.	1959	Orem
Vt.	Aiken, George D.	Rep.	1957	Putney
	Flanders, Ralph E.	Rep.	1959	Springfield
Va.	Robertson, A. Willis	Dem.	1955	Lexington
	Byrd, Harry F.	Dem.	1959	Berryville
Wash.	Magnuson, Warren G.	Dem.	1957	Seattle
	Jackson, Henry M.	Dem.	1959	Everett
W.Va.	Neely, Matthew M.	Dem.	1955	Fairmont
	Kilgore, Harley M.	Dem.	1959	Beckley
Wis.	Wiley, Alexander	Rep.	1957	Chippewa Falls
	McCarthy, Joseph R.	Rep.	1959	Appleton
Wyo.	Hunt, Lester C.	Dem.	1955	Lander
	Barrett, Frank A.	Rep.	1959	Cheyenne

¹Resigned from the senate on

²Democratic-Liberal.

United States House of Representatives (*served in 82nd congress): Democrats, 212; Republicans, 220; Independents, 1; vacancy, 1; in doubt, 1.

State	Dist.	Name	Party	Residence
Ala.	1	*Boykin, Frank W.	Dem.	Mobile
	2	*Grant, George M.	Dem.	Troy
	3	*Andrews, George W.	Dem.	Union Springs
	4	*Roberts, Kenneth A.	Dem.	Anniston
	5	*Rains, Albert	Dem.	Gadsden
	6	Selden, Armistead I.	Dem.	Greensboro
	7	*Elliott, Carl	Dem.	Jasper
	8	*Jones, Robert E., Jr.	Dem.	Scottsboro
	9	*Battle, Laurie C.	Dem.	Birmingham
Ariz.	1	Rhodes, John J.	Rep.	Mesa
	2	*Patten, Harold A.	Dem.	Tucson
Ark. ¹	1	*Gathings, E. C.	Dem.	West Memphis
	2	*Mills, Wilbur D.	Dem.	Kensett
	3	*Trimble, James W.	Dem.	Berryville
	4	*Harris, Oren	Dem.	El Dorado
	5	*Hays, Brooks	Dem.	Little Rock
	6	*Norrell, W. F.	Dem.	Monticello
Calif. ²	1	*Scudder, Hubert B.	Rep.	Sebastopol
	2	*Engle, Clair	Dem.	Red Bluff
	3	Moss, John E., Jr.	Dem.	Sacramento
	4	Mailliard, William S.	Rep.	San Francisco
	5	*Shelley, John F.	Dem.	San Francisco
	6	Condon, Robert L.	Dem.	Walnut Creek
	7	*Allen, John J., Jr.	Rep.	Oakland
	8	*Miller, George P.	Dem.	Alameda
	9	Younger, J. Arthur	Rep.	San Mateo
	10	Gubser, Charles S.	Rep.	Gilroy
	11	*Johnson, Leroy	Rep.	Stockton
	12	*Hunter, Allan Oakley	Rep.	Fresno
	13	(In doubt)		
	14	Hagen, Harlan	Dem.	Hanford
	15	*McDonough, Gordon L.	Rep.	Los Angeles
	16	*Jackson, Donald L.	Rep.	Santa Monica
	17	*King, Cecil R.	Dem.	Los Angeles
	18	Hosmer, Craig	Rep.	Long Beach
	19	*Holifield, Chet	Dem.	Montebello
	20	*Hinshaw, Carl	Rep.	Pasadena
	21	Hiestand, Edgar W.	Rep.	Altadena
	22	Holt, Joseph F.	Rep.	Van Nuys
	23	*Doyle, Clyde	Dem.	South Gate
	24	*Poulson, Norris	Rep.	Los Angeles
	25	*Hillings, Patrick J.	Rep.	Arcadia
	26	*Yorty, Samuel W.	Dem.	Los Angeles
	27	*Sheppard, Harry R.	Dem.	Yucaipa
	28	Utt, James B.	Rep.	Santa Ana
	29	*Phillips, John	Rep.	Banning
	30	Wilson, Robert C.	Rep.	Chula Vista
Colo.	1	*Rogers, Byron G.	Dem.	Denver
	2	*Hill, William S.	Rep.	Fort Collins
	3	*Chenoweth, J. Edgar	Rep.	Trinidad
	4	*Aspinall, Wayne N.	Dem.	Palisade

State	Dist.	Name	Party	Residence	State	Dist.	Name	Party	Residence
Conn.	1	Dodd, Thomas J.	Dem.	West Hartford	Me.	1	*Hale, Robert	Rep.	Portland
	2	*Seely-Brown, Horace, Jr.	Rep.	Pomfret Center		2	*Nelson, Charles P.	Rep.	Augusta
	3	Cretella, Albert W.	Rep.	Clintonville		3	*McIntire, Clifford G.	Rep.	Perham
	4	*Morano, Albert P.	Rep.	Greenwich					
	5	*Patterson, James T.	Rep.	Naugatuck	Md. ⁷	1	*Miller, Edward T.	Rep.	Easton
		*Sadlak, Antoni N.	Rep.	Rockville		2	*Devereux, James P. S.	Rep.	Stevenson
Del.		Warburton, Herbert B.	Rep.	Wilmington		3	*Garmatz, Edward A.	Dem.	Baltimore
Fla. ³	1	Campbell, Courtney W.	Dem.	Clearwater Beach		4	*Fallon, George H.	Dem.	Baltimore
	2	*Bennett, Charles E.	Dem.	Jacksonville		5	Small, Frank, Jr.	Rep.	Clinton
	3	*Sikes, Robert L. F.	Dem.	Crestview		6	Hyde, DeWitt S.	Rep.	Bethesda
	4	*Lantaff, Bill	Dem.	Miami		7	Friedel, Samuel N.	Dem.	Baltimore
	5	*Herlong, A. S., Jr.	Dem.	Leesburg	Mass.	1	*Heseltun, John W.	Rep.	Deerfield
	6	*Rogers, Dwight L.	Dem.	Fort Lauderdale		2	Eoland, Edward P.	Dem.	Springfield
	7	Haley, James A.	Dem.	Sarasota		3	*Philbin, Philip J.	Dem.	Clinton
	8	Matthews, D. R.	Dem.	Gainesville		4	*Donohue, Harold D.	Dem.	Worcester
Ga.	1	*Preston, Prince H., Jr.	Dem.	Statesboro		5	*Rogers, Edith Nourse	Rep.	Lowell
	2	*Cox, E. E.	Dem.	Camilla		6	*Bates, William H.	Rep.	Salem
	3	*Forrester, E. L.	Dem.	Leesburg		7	*Lane, Thomas J.	Dem.	Lawrence
	4	*Camp, A. Sidney	Dem.	Newnan		8	*Goodwin, Angier L.	Rep.	Melrose
	5	*Davis, James C.	Dem.	Stone Mountain		9	*Nicholson, Donald W.	Rep.	Wareham
	6	*Vinson, Carl	Dem.	Milledgeville		10	Curtis, Laurence	Rep.	Boston
	7	*Lanham, Henderson	Dem.	Rome		11	O'Neill, Thomas P., Jr.	Dem.	Cambridge
	8	*Wheeler, W. M.	Dem.	Alma		12	*McCormack, John W.	Dem.	Dorchester
	9	Landrum, Phil M.	Dem.	Jasper		13	*Wigglesworth, Richard B.	Rep.	Milton
	10	*Brown, Paul	Dem.	Elberton		14	*Martin, Joseph W., Jr.	Rep.	North Attleboro
Ida.	1	Pfost, Gracie	Dem.	Nampa	Mich. ⁸	1	*Machrowicz, Thaddeus M.	Dem.	Hamtramck
	2	*Budge, Homer H.	Rep.	Boise		2	*Meador, George	Rep.	Ann Arbor
Ill. ⁴	1	*Dawson, William L.	Dem.	Chicago		3	*Shafer, Paul W.	Rep.	Battle Creek
	2	O'Hara, Barrott	Dem.	Chicago		4	*Hoffman, Clare E.	Rep.	Allegan
	3	*Busbey, Fred E.	Rep.	Chicago		5	*Ford, Gerald R., Jr.	Rep.	East Grand Rapids
	4	*McVey, William E.	Rep.	Harvey		6	Clardy, Kit	Rep.	East Lansing
	5	*Kluczynski, John C.	Dem.	Chicago		7	*Wolcott, Jesse P.	Rep.	Port Huron
	6	*O'Brien, Thomas J.	Dem.	Chicago		8	Bentley, Alvin M.	Rep.	Owosso
	7	(Vacancy) ⁵				9	*Thompson, Ruth	Rep.	Whitehall
	8	*Gordon, Thomas S.	Dem.	Chicago		10	Cederberg, Elford A.	Rep.	Bay City
	9	*Yates, Sidney R.	Dem.	Chicago		11	Knox, Victor A.	Rep.	Sault Ste. Marie
	10	*Hoffman, Richard W.	Rep.	Berwyn		12	*Bennett, John B.	Rep.	Ontonagon
	11	*Sheehan, Timothy P.	Rep.	Chicago		13	*O'Brien, George D.	Dem.	Detroit
	12	*Jonas, Edgar A.	Rep.	Chicago		14	*Rabaut, Louis C.	Dem.	Grosse Pointe Park
	13	*Church, Marguerite Stitt	Rep.	Evanston		15	*Dingell, John D.	Dem.	Detroit
	14	*Reed, Chauncey W.	Rep.	West Chicago		16	*Lesinski, John, Jr.	Dem.	Dearborn
	15	*Mason, Noah M.	Rep.	Oglesby		17	*Oakman, Charles G.	Rep.	Detroit
	16	*Allen, Leo E.	Rep.	Galena		18	*Dondero, George A.	Rep.	Royal Oak
	17	*Arends, Leslie C.	Rep.	Melvin	Minn.	1	*Andresen, August H.	Rep.	Red Wing
	18	*Velde, Harold H.	Rep.	Pekin		2	*O'Hara, Joseph P.	Rep.	Glencoe
	19	*Chiperfield, Robert B.	Rep.	Canton		3	*Weir, Roy W.	Dem.	Minneapolis
	20	*Simpson, Sid	Rep.	Carrollton		4	*McCarthy, Eugene J.	Dem.	St. Paul
	21	*Mack, Peter F., Jr.	Dem.	Carlinville		5	*Judd, Walter H.	Rep.	Minneapolis
	22	*Springer, William L.	Rep.	Champaign		6	*Marshall, Fred	Dem.	Grove City (R.F.D.)
	23	*Vursell, Charles W.	Rep.	Salem		7	*Andersen, H. Carl	Rep.	Tyler
	24	*Price, Melvin	Dem.	East St. Louis		8	*Blatnik, John A.	Dem.	Chisholm
	25	*Bishop, C. W.	Rep.	Carterville		9	*Hagen, Harold C.	Rep.	Crookston
Ind.	1	*Madden, Ray J.	Dem.	Gary	Miss. ⁹	1	*Abernethy, Thomas G.	Dem.	Okolona
	2	*Halleck, Charles A.	Rep.	Rensselaer		2	*Whitten, Jamie L.	Dem.	Charleston
	3	*Crumppacker, Shepard J., Jr.	Rep.	South Bend		3	*Smith, Frank E.	Dem.	Greenwood
	4	*Adair, E. Ross	Rep.	Fort Wayne		4	*Williams, John Bell	Dem.	Raymond
	5	*Beamer, John V.	Rep.	Wabash		5	*Winstead, Arthur	Dem.	Philadelphia
	6	*Harden, Cecil M.	Rep.	Covington		6	*Colmer, William M.	Dem.	Pascagoula
	7	*Bray, William G.	Rep.	Martinsville	Mo. ¹⁰	1	*Karsten, Frank M.	Dem.	St. Louis
	8	Merrill, D. Bailey	Rep.	Evansville		2	*Curtis, Thomas B.	Rep.	Webster Groves
	9	*Wilson, Earl	Rep.	Bedford		3	Sullivan, Mrs. John B.	Dem.	St. Louis
	10	*Harvey, Ralph	Rep.	New Castle		4	Hillelson, Jeffrey P.	Rep.	Independence
	11	*Brownson, Charles B.	Rep.	Indianapolis		5	*Boiling, Richard	Dem.	Kansas City
Iowa	1	*Martin, Thomas E.	Rep.	Iowa City		6	Cole, William C.	Rep.	St. Joseph
	2	*Talle, Henry O.	Rep.	Decorah		7	*Short, Dewey	Rep.	Galena
	3	*Gross, H. R.	Rep.	Waterloo		8	*Carnahan, A. S. J.	Dem.	Elsinore
	4	*LeCompte, Karl M.	Rep.	Corydon		9	*Cannon, Clarence	Dem.	Elsbury
	5	*Cunningham, Paul	Rep.	Des Moines		10	*Jones, Paul C.	Dem.	Kennett
	6	*Dolliver, James I.	Rep.	Fort Dodge		11	*Moulder, Morgan M.	Dem.	Camdenton
	7	*Jensen, Ben F.	Rep.	Exira	Mont.	1	*Metcalf, Lee	Dem.	Helena
	8	*Hoeven, Charles B.	Rep.	Alton		2	*D'Ewart, Wesley A.	Rep.	Wilsall
Kan.	1	Miller, Howard S.	Dem.	Morrill	Neb.	1	*Curtis, Carl T.	Rep.	Minden
	2	*Scrivner, Errett P.	Rep.	Kansas City		2	Hruska, Roman L.	Rep.	Omaha
	3	*George, Myron V.	Rep.	Altamont		3	*Harrison, Robert D.	Rep.	Norfolk
	4	*Rees, Edward H.	Rep.	Emporia		4	*Miller, A. L.	Rep.	Kimball
	5	*Hope, Clifford R.	Rep.	Garden City	Nev.		Young, Clifton	Rep.	Reno
	6	*Smith, Wint	Rep.	Mankato	N.H.	1	*Morrow, Chester E.	Rep.	Center Ossipee
Ky. ⁶	1	*Gregory, Noble J.	Dem.	Mayfield		2	*Cotton, Norris	Rep.	Lebanon
	2	*Withers, Garrett L.	Dem.	Dixon	N.J.	1	*Wolverton, Charles A.	Rep.	Merchantville
	3	Robison, John M., Jr.	Rep.	Louisville		2	*Hand, T. Millet	Rep.	Cape May City
	4	*Chelf, Frank L.	Dem.	Lebanon		3	*Auchincloss, James C.	Rep.	Rumson
	5	*Spence, Brent	Dem.	Fort Thomas		4	*Howell, Charles R.	Dem.	Pennington
	6	*Watts, John C.	Dem.	Nicholasville		5	*Frelinghuysen, Peter, Jr.	Rep.	Morristown
	7	*Perkins, Carl D.	Dem.	Hindman		6	*Case, Clifford P.	Rep.	Rahway
	8	*Golden, James S.	Rep.	Pineville		7	*Widnall, William B.	Rep.	Saddle River
La.	1	*Hébert, F. Edward	Dem.	New Orleans		8	*Canfield, Gordon	Rep.	Paterson
	2	*Boggs, Hale	Dem.	New Orleans		9	*Osmers, Frank C., Jr.	Rep.	Haworth
	3	*Willis, Edwin E.	Dem.	St. Martinsville		10	*Rodino, Peter W., Jr.	Dem.	Newark
	4	*Brooks, Overton	Dem.	Shreveport		11	*Addonizio, Hugh J.	Dem.	Newark
	5	*Passman, Otto E.	Dem.	Monroe		12	*Kean, Robert W.	Rep.	Livingston
	6	*Morrison, James H.	Dem.	Hammond		13	*Sieminski, Alfred D.	Dem.	Jersey City
	7	Thompson, T. A.	Dem.	Ville Platte		14	*Hart, Edward J.	Dem.	Jersey City
	8	Long, George S.	Dem.	Pineville	N.M.		*Fernandez, Antonio M.	Dem.	Santa Fe
							*Dempsey, John J.	Dem.	Santa Fe

State	Dist.	Name	Party	Residence	State	Dist.	Name	Party	Residence
N.Y. ¹¹	1	Wainwright, Stuyvesant	Rep.	East Hampton		7	*James, Benjamin F.	Rep.	Rosemont
	2	Derounian, Steven B.	Rep.	Mineola		8	*King, Karl C.	Rep.	Morrisville
	3	Becker, Frank J.	Rep.	Lynbrook		9	*Dague, Paul B.	Rep.	Downingtown
	4	*Latham, Henry J.	Rep.	Queens Village		10	*Carrigg, Joseph L.	Rep.	Susquehanna
	5	Bosch, Albert H.	Rep.	Richmond Hill		11	Bonin, Edward J.	Rep.	Hazleton
	6	Holtzman, Lester	Dem.	Rego Park		12	*Fenton, Ivor D.	Rep.	Mahanoy City
	7	*Delaney, James J.	Dem.	Long Island City		13	*McConnell, Samuel K., Jr.	Rep.	Wynnewood
	8	*Heller, Louis B.	Dem.	Brooklyn		14	*Rhodes, George M.	Dem.	Reading
	9	*Keogh, Eugene J.	Dem.	Brooklyn		15	*Walter, Francis E.	Dem.	Easton
	10	*Kelly, Edna F.	Dem.	Brooklyn		16	*Mumma, Walter M.	Rep.	Harrisburg
	11	*Celler, Emanuel	Dem.	Brooklyn		17	*Bush, Alvin R.	Rep.	Muncy
	12	Dorn, Francis E.	Rep.	Brooklyn		18	*Simpson, Richard M.	Rep.	Huntingdon
	13	*Multer, Abraham J.	Dem.	Brooklyn		19	Stauffer, S. Walter	Rep.	York
	14	*Rooney, John J.	Dem.	Brooklyn		20	*Van Zandt, James E.	Rep.	Altoona
	15	Ray, John H.	Rep.	Staten Island		21	*Kelley, Augustine B.	Dem.	Greensburg
	16	*Powell, Adam Clayton, Jr.	Dem.	New York city		22	*Saylor, John P.	Rep.	Johnstown
	17	*Coudert, Frederic R., Jr.	Rep.	New York city		23	*Gavin, Leon H.	Rep.	Oil City
	18	*Donovan, James G.	Dem.	New York city		24	*Kearns, Carroll D.	Rep.	Farrell
	19	*Klein, Arthur G.	Dem.	New York city		25	*Graham, Louis E.	Rep.	Beaver
	20	*Roosevelt, Franklin D., Jr.	Dem.	New York city		26	*Morgan, Thomas E.	Dem.	Fredericktown
	21	*Javits, Jacob K.	Rep.	New York city		27	*Fulton, James G.	Rep.	Pittsburgh
	22	*Fine, Sidney A.	Dem.	New York city		28	*Eberharter, Herman P.	Dem.	Pittsburgh
	23	*Dollinger, Isidore	Dem.	New York city		29	*Corbett, Robert J.	Rep.	Pittsburgh
	24	*Buckley, Charles A.	Dem.	New York city		30	*Buchanan, Vera	Dem.	McKeesport
	25	Fino, Paul A.	Rep.	New York city	R.I.	1	*Forand, Aime J.	Dem.	Cumberland
	26	*Gamble, Ralph A.	Rep.	Larchmont	S.C.	2	*Fogarty, John E.	Dem.	Harmony
	27	*Gwinn, Ralph W.	Rep.	Bronxville		1	*Rivers, L. Mendel	Dem.	Charleston
	28	*St. George, Katharine	Rep.	Tuxedo Park		2	*Riley, John J.	Dem.	Sumter
	29	*Wharton, J. Ernest	Rep.	Richmondville		3	*Dorn, W. J. Bryan	Dem.	Greenwood
	30	*O'Brien, Leo W.	Dem.	Albany		4	*Bryson, Joseph R.	Dem.	Greenville
	31	*Taylor, Dean P.	Rep.	Troy		5	*Richards, James P.	Dem.	Lancaster
N.C.	32	*Kearney, Bernard W.	Rep.	Gloversville	S.D.	6	*McMillan, John L.	Dem.	Florence
	33	*Kilburn, Clarence E.	Rep.	Malone		1	*Lovre, Harold O.	Rep.	Watertown
	34	*Williams, William R.	Rep.	Cassville	Tenn. ¹⁴	2	*Berry, E. Y.	Rep.	McLaughlin
	35	*Riehlman, R. Walter	Rep.	Tully		1	*Reece, B. Carroll	Rep.	Johnson City
	36	*Taber, John	Rep.	Auburn	Tex. ¹⁵	2	*Baker, Howard H.	Rep.	Huntsville
	37	*Cole, W. Sterling	Rep.	Bath		3	*Frazier, James B., Jr.	Dem.	Chattanooga
	38	*Keating, Kenneth B.	Rep.	Rochester		4	*Evins, Joe L.	Dem.	Smithville
	39	*Ostertag, Harold C.	Rep.	Attica		5	*Priest, J. Percy	Dem.	Nashville
	40	*Miller, William E.	Rep.	Lockport		6	*Sutton, Pat	Dem.	Lawrenceburg
	41	*Radwan, Edmund P.	Rep.	Buffalo		7	*Murray, Tom	Dem.	Jackson
	42	Pillion, John R.	Rep.	Lackawanna		8	*Cooper, Jere	Dem.	Dyersburg
	43	*Reed, Daniel A.	Rep.	Dunkirk		9	*Davis, Clifford	Dem.	Memphis
	1	*Bonner, Herbert C.	Dem.	Washington		1	*Patman, Wright	Dem.	Texarkana
	2	Fountain, L. H.	Dem.	Tarboro		2	Brooks, Jack B.	Dem.	Beaumont
	3	*Barden, Graham A.	Dem.	New Bern		3	Gentry, Brady	Dem.	Tyler
	4	*Cooley, Harold D.	Dem.	Nashville		4	*Rayburn, Sam	Dem.	Bonham
	5	*Chatham, Thurmond	Dem.	Winston-Salem		5	*Wilson, J. Frank	Dem.	Dallas
	6	*Durham, Carl T.	Dem.	Chapel Hill		6	*Teague, Olin E.	Dem.	College Station
	7	*Carlyle, F. Ertel	Dem.	Lumberton		7	*Dowdy, John	Dem.	Athens
	8	*Deane, Charles B.	Dem.	Rockingham		8	*Thomas, Albert	Dem.	Houston
	9	Alexander, Hugh Q.	Dem.	Kannapolis		9	*Thompson, Clark W.	Dem.	Galveston
	10	Jonas, Charles Raper	Rep.	Lincolnton		10	*Thornberry, Homer	Dem.	Austin
	11	*Jones, Woodrow W.	Dem.	Rutherfordton		11	*Poage, W. R.	Dem.	Waco
	12	Shuford, George A.	Dem.	Asheville		12	*Lucas, Wingate H.	Dem.	Grapevine
N.D.		*Burdick, Usher L.	Rep.	Williston		13	*Ikard, Frank	Dem.	Wichita Falls
		Krueger, Otto	Rep.	Fessenden	Utah	14	*Lyle, John E., Jr.	Dem.	Corpus Christi
Ohio	1	Scherer, Gordon H.	Rep.	Cincinnati		15	*Bentsen, Lloyd M., Jr.	Dem.	McAllen
	2	*Hess, William E.	Rep.	Cincinnati		16	*Regan, Ken	Dem.	Midland
	3	*Schenck, Paul F.	Rep.	Dayton		17	*Burleson, Omar	Dem.	Anson
	4	*McCulloch, William M.	Rep.	Piqua		18	*Rogers, Walter	Dem.	Pampa
	5	*Clevenger, Cliff	Rep.	Bryan		19	*Mahon, George H.	Dem.	Lubbock
	6	*Polk, James G.	Dem.	Highland		20	*Kilday, Paul J.	Dem.	San Antonio
	7	*Brown, Clarence J.	Rep.	Blanchester		21	*Fisher, O. C.	Dem.	San Angelo
	8	*Betts, Jackson E.	Rep.	Findlay			Dies, Martin	Dem.	Lufkin
	9	*Reams, Frazier	Ind.	Toledo	Va. ¹⁶	1	Stringfellow, Douglas R.	Rep.	Ogden
	10	*Jenkins, Thomas A.	Rep.	Ironton		2	Dawson, William A.	Rep.	Salt Lake City
	11	Bolton, Oliver P.	Rep.	Mentor	Vt.		*Prouty, Winston L.	Rep.	Newport City
	12	*Vorys, John M.	Rep.	Columbus					
	13	*Weichel, Alvin F.	Rep.	Sandusky	Wash. ¹⁷	1	*Robeson, Edward J., Jr.	Dem.	Newport News
	14	*Ayres, William H.	Rep.	Akron		2	*Hardy, Porter, Jr.	Dem.	Churchland
	15	*Secrest, Robert T.	Dem.	Senecaville		3	*Gary, J. Vaughan	Dem.	Richmond
	16	*Bow, Frank T.	Rep.	Canton (R.F.D.)		4	*Abbitt, Watkins M.	Dem.	Appomattox
	17	*McGregor, J. Harry	Rep.	West Lafayette		5	*Stanley, Thomas B.	Dem.	Stanleytown
	18	*Hays, Wayne L.	Dem.	Flushing		6	Poff, Richard H.	Rep.	Radford
	19	*Kirwan, Michael J.	Dem.	Youngstown		7	*Harrison, Burr P.	Dem.	Winchester
	20	*Feighan, Michael A.	Dem.	Cleveland		8	*Smith, Howard W.	Dem.	Broad Run
	21	*Cresser, Robert	Dem.	Cleveland		9	Wampler, William C.	Rep.	Bristol
	22	*Bolton, Frances P.	Rep.	Lyndhurst		10	Broyhill, Joel T.	Rep.	Arlington
		*Bender, George H.	Rep.	Chagrin Falls	W.Va.	1	Mollohan, Robert H.	Dem.	Fairmont
Okla. ¹²	1	*Belcher, Page	Rep.	Enid		2	*Staggers, Harley O.	Dem.	Keyser
	2	Edmondson, Ed	Dem.	Muskogee		3	*Bailey, Cleveland M.	Dem.	Clarksburg
	3	*Albert, Carl	Dem.	McAlester		4	Neal, Will E.	Rep.	Huntington
	4	*Steed, Tom	Dem.	Shawnee		5	*Kee, Elizabeth	Dem.	Bluefield
	5	*Jarman, John	Dem.	Oklahoma City		6	Byrd, Robert C.	Dem.	Sophia
	6	*Wickersham, Victor	Dem.	Mangum	Wis.	1	*Smith, Lawrence H.	Rep.	Racine
Ire.	1	*Norblad, Walter	Rep.	Astoria		2	*Davis, Glenn R.	Rep.	Waukesha
	2	Coon, Sam	Rep.	Baker		3	*Withrow, Gardner R.	Rep.	La Crosse
	3	*Angell, Homer D.	Rep.	Portland					
	4	*Ellsworth, Harris	Rep.	Roseburg					
a. ¹³	1	*Barrett, William A.	Dem.	Philadelphia					
	2	*Granahan, William T.	Dem.	Philadelphia					
	3	Byrne, James A.	Dem.	Philadelphia					
	4	*Chudoff, Earl	Dem.	Philadelphia					
	5	*Green, William J., Jr.	Dem.	Philadelphia					
	6	*Scott, Hugh D., Jr.	Rep.	Philadelphia					

State	Dist.	Name	Party	Residence
Wis.—	4	*Zablocki, Clement J.	Dem.	Milwaukee
Cont'd	5	*Kersten, Charles J.	Rep.	Milwaukee
	6	*Van Pelt, William K.	Rep.	Fond du Lac
	7	Laird, Melvin R.	Rep.	Marshfield
	8	*Byrnes, John W.	Rep.	Green Bay
	9	*Hull, Merlin	Rep.	Black River Falls
	10	*O'Konski, Alvin E.	Rep.	Mercer
Wyo.		*Harrison, William H.	Rep.	Sheridan

- ¹Arkansas lost one representative in the new apportionment.
- ²California gained seven representatives in the new apportionment.
- ³Florida gained two representatives in the new apportionment.
- ⁴Illinois lost one representative in the new apportionment.
- ⁵Caused by death of Adolph J. Sabath, Nov. 6, 1952.
- ⁶Kentucky lost one representative in the new apportionment.
- ⁷Maryland gained one representative in the new apportionment.
- ⁸Michigan gained one representative in the new apportionment.
- ⁹Mississippi lost one representative in the new apportionment.
- ¹⁰Missouri lost two representatives in the new apportionment.
- ¹¹New York lost two representatives in the new apportionment.
- ¹²Oklahoma lost two representatives in the new apportionment.
- ¹³Pennsylvania lost three representatives in the new apportionment.
- ¹⁴Tennessee lost one representative in the new apportionment.
- ¹⁵Texas gained one representative in the new apportionment.
- ¹⁶Virginia gained one representative in the new apportionment.
- ¹⁷Washington gained one representative in the new apportionment.

Congress of Industrial Organizations: see LABOUR UNIONS.

Connecticut. This southwesternmost of the New England states, known also as the "Nutmeg state," the "Land of Steady Habits," the "Constitution state" and one of the 13 original states, has an area of 5,009 sq.mi., including 110 sq.mi. (approximately) of water. According to the official census report of 1950, the population was 2,007,280, or a gain of 17.4% over 1940; 77.6% urban, 19.2% rural nonfarm and 3.1% rural farm. Nonwhite inhabitants numbered 54,951, including 53,472 Negroes and 333 Indians. Foreign-born inhabitants numbered 297,859. Population figures for the principal cities were: Hartford, the capital, 177,397; New Haven, 164,443; Bridgeport, 158,709; Waterbury, 104,477; Stamford, 74,293; and New Britain, 73,726.

History.—Since the general assembly meets biennially in the odd-numbered years, there was no regular session in 1952, nor did the governor call a special session, although considerable pressure was exerted to have him call one after the report on the reclassification of state employees was made public. This study had been authorized by the 1951 legislature. The completed report, while it corrected some inequities and recommended some salary increases, did not meet the expectations of the majority of state employees who wanted a general increase.

The Public Utilities commission granted franchises to two natural gas suppliers, and the transmission lines were almost completed. Consumers were to be provided with natural gas before the end of the year at an expected reduction in bills of 8% to 10%. The state's new motor vehicle responsibility law went into effect July 1.

On Sept. 15 Gov. John Lodge dedicated the state's new \$2,000,000 terminal building at Bradley field in Windsor Locks, located about 14 mi. from both Hartford and Springfield, Mass. He officially proclaimed the new building "Murphy terminal" in honour of Francis S. Murphy, chairman of the Aeronautics commission.

On July 28 Brien McMahon, Connecticut's senior U.S. senator (Dem.) and chairman of the U.S. Atomic Energy commission, died. A month later the governor named William A. Purtell of West Hartford to the interim term expiring Jan. 3, 1953.

In state politics the chief interest was in the election of two senators, no state officials coming up for election until 1954. The Republican party nominated William A. Purtell to complete until 1957 the unexpired term of Brien McMahon, and Prescott S. Bush to run against William Benton. The Democrats nominated A. A. Ribicoff to fill the McMahon vacancy and

William Benton to succeed himself. The Republican candidates were elected.

The principal state officers in 1952, all Republicans, were governor, John Lodge; lieutenant governor, Edward N. Allen; secretary of state, Mrs. Alice K. Leopold; treasurer, Joseph A. Adorno; comptroller, Fred R. Zeller; and attorney general George C. Conway.

Education.—The following statistics are for the school year 1951-52. There were at that time 22 colleges and professional schools with 24,798 students; 4 teachers' colleges with 4,615 students; 6 junior colleges with 5,370 students; 12 state vocational-technical schools with 350 teachers and 14,918 students; 8 state-aided schools with 104 teachers and 1,100 students. In public education there were 90 high schools with 2,600 teachers and 62,204 pupils; 35 junior high schools with 928 teachers and 16,461 pupils; 693 public elementary schools with 7,417 teachers and 217,059 pupils. In addition there were 118 parochial schools with 1,200 teachers and 49,563 pupils. The state expended \$12,800,000 for public schools, and the total amount of public expenses for public schools was \$60,200,000. Finis E. Engleman was commissioner of education.

Social Insurance and Assistance, Public Welfare and Related Programs.—The state public welfare department reported that in Dec. 1951 there were more than 65,000 persons receiving public assistance, a reduction of 5.7% from 1950. The cost was \$4,029,382, or 1.6% more than in 1950. The various types of relief were as follows: general local relief to 11,793 persons cost \$526,549; old-age assistance was given to 19,024 at a cost of \$1,305,046; 17,155 dependent children received \$614,239; 364 blind received \$26,011; 12,177 in mental, feeble-minded and tubercular state institutions received \$1,370,360; 3,265 county wards cost \$144,296; and state wards, 2,095 in number, received \$42,251.

Communications.—As of July 1, 1952, there were 838,451 motor vehicles registered in the state and 944,714 drivers licensed. For the state fiscal year ending June 30, 1952, the gasoline tax receipts and the motor vehicle fees were \$33,523,937. The railroad mileage remained stationary at 830.57 mi. The mileage in the state highway system was 2,988, of which 145 was four-way divided lane. There were 26 standard broadcasting stations, 9 frequency modulation stations and 1 television station. There were 41 airports (13 commercial) and 15 seaplane bases (10 commercial).

Banking and Finance.—The state treasurer reported the financial condition of the state as of June 30, 1952, as follows: cash balance, June 30, 1951, \$26,631,087.30; receipts, \$673,168,194.92; making a total of \$699,799,282.22. Disbursements were \$672,751,736.01, leaving a balance of \$27,047,546.21 as of June 30, 1952. The total bonded indebtedness of the state was \$237,725,000, made up of long-term bonds in the amount of \$82,459,000, tax anticipation notes of \$14,750,000 and bond anticipation notes of \$140,516,000.

The bank commissioner reported that as of June 30, 1952, 72 mutual savings banks had assets of \$1,627,748,996; 55 state banks and trust companies had assets of \$1,032,565,751; 48 national banks had assets of \$999,703,000; 7 industrial banks had assets of \$7,623,192; 2 private banks, \$1,922,723; and 31 building or savings and loan associations \$84,027,850.

Agriculture.—The department of farms and markets reported that cash farm income for 1951 was \$171,184,000, compared with \$147,386,000 in 1950.

Table I.—Principal Crops of Connecticut

	Indicated 1952	1951	Average 1941-50
Corn, bu.	1,824,000	1,710,000	1,993,000
Oats, bu.	160,000	124,000	160,000
Hay, tons	438,000	449,000	442,000
Tobacco, lb.	24,138,000	22,353,000	24,416,000
Apples, bu.	1,201,000	1,656,000	1,231,000
Peaches, bu.	152,000	148,000	127,000
Pears, bu.	49,000	53,000	50,000
Potatoes, bu.	2,275,000	2,252,000	3,207,000

Source: U.S. Department of Agriculture.

Manufacturing.—Figures released by the state labour department revealed that total nonagricultural employment in July 1952 was 833,040, which was 12,000 more than in July 1951. Persons engaged in manufacturing were more than 1,000 fewer than in the previous year. Labour disputes were the cause of most of the loss, although vacations and shortages of steel caused some temporary layoffs. In nonmanufacturing industries employment rose more than 13,000 over 1951. Unemployment claims in July reflected unsettled conditions and numbered 36,199, about the same as in July 1951 but more than twice the figures of June 1952. The average weekly wage in manufacturing industries was \$68.11 and in nonmetallic manufacturing, \$62.26. (J. Br.)

Table II.—Mineral Production of Connecticut

Mineral	(In short tons)		1949	
	Quantity	Value	Quantity	Value
Clays	292,000	\$ 236,000	289,000	\$ 217,000
Feldspar	15,000	102,000	14,000	95,000
Quartz	28,000	167,000	16,000	97,000
Sand and gravel	2,998,000	1,862,000	2,648,000	1,587,000
Stone	1,861,000	2,789,000	1,696,000	2,461,000
Other minerals . . . . .	...	519,000	...	430,000
Total		\$5,675,000		\$4,887,000

Mineral Production.—Table II shows the tonnage and value of those mineral commodities produced in Connecticut in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available.

Conservation, Soil: see SOIL EROSION AND SOIL CONSERVATION.

Conservative Party, Great Britain: see POLITICAL PARTIES, BRITISH.

Construction Industry: see BUILDING AND CONSTRUCTION INDUSTRY.

Consumer Co-operatives: see CO-OPERATIVES.

Consumer Credit. During the year 1952 the use of credit by consumers continued to occupy a

normal place in the United States economy; regulation of consumer credit by the federal government came again to an end, and the study of this type of credit gained increasing attention.

During the year, credit sales to household consumers amounted to approximately 34% of the total volume of business done in retail stores. About two-thirds of such credit sales were made on open charge accounts, the remainder on instalment contracts. Consumers resorted to a somewhat greater extent than usual to making cash loans during 1952.

The increased volume of credit sales, resulting from the expansion of the general economy and from the greater use made of credit by consumers in 1952, produced outstanding debts amounting to about \$21,500,000,000. This represented an increase of 11% over the debt outstanding during the previous year. The debt continued, nevertheless, to bear about the same relation to the disposable personal income of consumers, about 9%, that it had over a long period of so-called normal nonwar years.

Whereas during 1951 approximately 67% of outstanding consumer debt was of an instalment character, during 1952 that type of debt amounted to 70% of the total. During the latter year instalment debt increased 15% while total noninstalment debt increased by only 4.5%.

The bulk of the increase in instalment debt appeared to result not from any great increase in the purchase of durable goods but rather from an appreciable increase in the amount of instalment cash loans made to consumers. Debt incurred in the financing of automobiles and other durable goods increased only 12%, in contrast with a 17% increase in instalment loan debt. The explanation of this appears to be that during the year a large number of consumers undertook to get "caught up" with their normal everyday bills by consolidating them and paying them off with money borrowed from cash-lending institutions. There also seemed to be an appreciable amount of refinancing of existing automobile debt to make monthly payments less burdensome.

The relatively small (4.5%) increase in noninstalment debt, consisting largely of charge account debt, reflected the general expansion of the economy during 1952. In that year, disposable personal income increased about 4% and personal consumption expenditures about 5%. The greater percentage increase in instalment debt during the year (12%) reflected in turn the greater variability of that form of credit, attesting the fact that during periods of prosperity people spend a proportionately greater amount on durable goods.

On May 7, 1952, regulation W expired. By congressional authority the federal reserve board had through this regulation prescribed minimum down payments and maximum payment periods for instalment sales and loans. Originated as a wartime measure allegedly for curbing inflation and curtailing the civilian use of critical materials, this regulation had been prolonged after the war as a tool of economic control.

As a result of the critical interest in consumer credit which had arisen in connection with arguments for and against its regulation, much thought was given to clarifying concepts of this type of credit. From one viewpoint, it had been widely and loosely regarded as so many dollars of debt which, by virtue of its magnitude, was presumed to be "safe" or "dangerous," as the case may be, in the economy. On the other hand, it had been conceived not as an isolated debt factor but as an integral part of the dynamic economy. So viewed, consumer debt was related to such other factors as income, prices, population, savings, standard of living and the like, and was shown to bear a normal relation to the whole. In still another way it had been regarded as an effect of general economic conditions rather than a cause. During 1952 another concept of consumer debt as "dynamic thrift" was advanced.

By this concept it was recognized that consumer debt, particularly instalment debt, represents the acquisition by consumers of the many and varied products of industry. Consumer debt represents the exchange of individual earnings for desired commodities, most of which accumulate as personal property in individual estates and thus comprise an increase of individual as well as of social wealth. The term "saving" had commonly been applied only to the retention of balances earned and in excess of expenditures and to the increase of cash deposits and other highly liquid forms of investment. This new concept of credit held expenditures (usually made on credit) for durable personal assets to be not "spending" in the sense of dissipation of wealth, assets and equity, but rather the accumulation of goods, the enjoyment of which is one of the final ends of the economic process. Consumer credit was regarded as a laudable means to this end and one of the business tools by which the people of the United States had created a standard of living exceeding that of all other nations. (See also FEDERAL RESERVE SYSTEM.)

(R. BA.)

Canada.—In Jan. 1952 a government order relaxed restrictions on credit buying by extending the time limit from 12 to 18 months, but the 50% down payment on cars and the 33% down payment on electrical durables were maintained. In May, however, with a drop in the cost-of-living index, the government removed all consumer credit restrictions. By July the Canadian bureau of statistics was reporting, for its sixth successive week, sharp increases in business. On the national average, sales were up 17.1% over 1951; in the eastern part of the country business was up 32.1%; in British Columbia, 25%. Electric stoves, refrigerators and similar instalment-plan durable household goods were the clear leaders in sales.

During the second quarter of 1952, cash sales of automobiles dropped 5.5%, but instalment sales jumped 82.3%; the total amount was \$209,300,000, compared with \$114,800,000 for the second quarter of 1951. On July 1, 1952, Canadians owed \$534,000,000 to retail stores on instalment buying, which was up \$56,100,000 from July 1, 1951, and up \$85,400,000 from the total owed on April 1, 1952.

(C. CY.)

Great Britain.—In contrast with the position in the United States and Canada, restrictive controls in the United Kingdom upon consumer credit before 1952 had either been operated indirectly by control of advances through the joint-stock banks, or had been imposed only upon price-controlled articles to prevent overcharging on such goods. The year 1952 however saw, for the first time in Great Britain, the imposition of direct controls designed to restrict the flow of consumer credit. A series of statutory instruments were issued during the year, prescribing minimum down payments and maximum periods of repayment in credit transactions over a wide range of articles, which had previously been outside the scope of the original credit control orders. For nearly all goods, except bicycles, the

terms imposed were one-third deposit and 18 months' maximum credit. For bicycles the requirements were one-fourth deposit and 12 months' maximum credit. The goods affected by these new controls included among other things radio and television equipment (including radio-phonographs), motor vehicles, cycles, office furniture and equipment, together with a considerable proportion of household appliances, such as washing machines, refrigerators, mixers and similar articles.

At the same time these regulations were introduced, the government also considerably increased its pressure on banks to restrict monies made available for consumer credit purposes. In previous years the restriction had meant that, in general, advances should not exceed a predetermined level (usually the amount outstanding in early 1947); now, however, an actual reduction in balances was to be imposed. This control was in the nature of advice to the banks and, as in previous years, there was no legal directive that compelled bankers to comply. In the event, however, most of the various bankers' customers in this field were requested to reduce their outstanding balances by at least 10% by Sept. 1.

The partial "buyers' strike" apparent throughout the period made it difficult to assess the full effect of the new controls on consumer-credit transactions. Certainly turnover fell abruptly, especially in the radio industry. That this was not however entirely caused by the restrictions was shown by the fact that even in goods unaffected by the control, a considerable decline in consumer credit was generally reported.

Certain minor alterations were also made in the "price control" type of consumer-credit restrictions. These were made necessary since further removal of price controls had reduced the list of goods still affected to utility furniture, office furniture and linoleum.

A limited range of goods (principally in textiles and nonutility furniture) thus came outside the scope of any credit control, for the first time since it was imposed during World War II. (C. McN. G.)

Contract Bridge. A survey published in 1952, taken by the Association of American Playing Card Manufacturers, showed canasta and not contract bridge to be favoured by most U.S. card players, with contract bridge second. The information gathered for this survey was taken late in 1951, however, and by the summer of 1952 there was every indication that contract bridge had not only regained first place but was enjoying a greater popularity than in any year since 1935.

Part of the reason was general acceptance of "point-count" valuation of the hand, instead of honour-tricks. Charles Goren, one of the principal authorities, had espoused this in the autumn of 1949. Ely Culbertson, the other principal authority, turned to it in 1952, publishing a new point-count method differing somewhat from Goren's.

In bridge tournaments, attendance increased as it had regularly for 12 consecutive years. The American Contract Bridge league ended the year with more than 43,000 members, all expert tournament players. The principal U.S. tournaments were played in New York city in February, in Cincinnati, O., in August and in Miami, Fla., in December.

United States team champions for the third consecutive year were Howard Schenken, George Rapee, Samuel M. Stayman and B. Jay Becker of New York city, and John R. Crawford of Philadelphia, Pa. In 1950 and 1951 they had also won the world championship by defeating the champions of the European Bridge league, Great Britain in 1950 and Italy in 1951.

No match was played in 1952, since the Swedish team, 1952 European champions, could not make the trip to the U.S. for

the scheduled date in November, and determination of the 1952 world champions was deferred to a match scheduled to be played in New York city in Jan. 1953.

The principal U.S. tournament champions in 1952 were:

Life masters' individual: Harry J. Fishbein, New York city.

Senior masters' individual: Harry Cohen, Brooklyn, N.Y.

Life and senior masters' pairs: Edgar Kaplan and Ralph Hirschberg, New York city.

Masters' teams: Schenken, Rapee, Stayman, Crawford, Becker.

Open teams, cumulative scoring (Vanderbilt cup): Milton Moss, Jesse Sloan, Ned Drucker, Irving Kass, Sidney Mandell, New York city.

Masters' pairs: Williams E. Joseph, Paterson, N.J., and William W. Jackson, Rochester, N.Y.

Men's pairs: William Rosen, Chicago, Ill., and Arthur Grau, Dayton Beach, Fla.

Women's pairs: Mrs. Shirley Fairchild and Mrs. Sidney Lee, Dallas, Tex. (A. H. Mr.)

Great Britain and Europe.—The 1952 European championship was played at Dún Laoghaire, Dublin county, and was won by Sweden. For the first time the competing teams were divided into two sections. Sweden and Italy qualified from section A, Austria and Great Britain from section B. In the semifinal round Italy beat Great Britain by 13 match points and Sweden beat Austria by 29. Sweden beat Italy in the final by the extraordinarily narrow margin of 2 match points. In the play-off for third place Austria beat Great Britain by 5 points. The British team was: J. T. Reese and B. Schapiro, K. W. Konstam and L. W. Dodds, L. Tarlo and H. Franklin, Maj. G. Fell (non-playing captain). The ladies' championship was won for the third year running by Great Britain, whose team won every match. Norway was second. The British team was: Lady Rhodes and Mrs. R. Markus, Mrs. P. Williams and Mrs. H. R. Evans, Mrs. F. Gordon and Mrs. A. L. Fleming, Capt. E. Kemson (nonplaying captain).

In Great Britain the winners of the principal competition were: Waddington cup for masters' pairs, L. Tarlo and H. Franklin; Gold cup, J. T. Reese (captain), B. Schapiro, A. Meredith, H. Leist, S. Booker and S. Lee; Crockford's cup, L. Ellis (captain), J. Whitby, R. Sharples and J. Sharples.

The Camrose trophy was again won by England, who drew with Northern Ireland and won the remaining matches.

BIBLIOGRAPHY.—Terence Reese, *Modern Bidding and the Acol System* (London, 1952); Iain Macleod, *Bridge Is an Easy Game* (1952); George S. Coffin, *Sure Tricks* (London, 1952); John Brown, *Winning Defence* (London, 1952). (T. REE.)

Co-operatives. In Nov. 1952 the executive director of the Cooperative League of the U.S.A. reported that 19 of the largest regional co-operatives, serving both farm and city consumers, had distributed \$805,000,000 worth of goods during the year, and reported savings on their purchases of \$47,000,000, averaging 5.8%. These savings were passed on to individual members of local co-operatives associated with those regional organizations.

The same 19 regional, or area-wide, co-operatives had distributed only \$183,000,000 worth of goods to their members 10 years before. The 10-year increase was 440%. This fourfold increase was in part the result of an increase in prices of the commodities handled. The growth, however, was still impressive.

Production enterprises owned by consumer and purchasing co-operatives had an even more spectacular growth. In 1936 only 7 of the 19 regional co-operatives manufactured any of their own goods. These produced about \$1,000,000 worth in their own factories. By 1952 the regional co-operatives owned more than 200 factories, refineries and other production enterprises which produced \$275,000,000 worth of goods for distribution through co-operatives. The production of farm supplies was the largest item. The 20 co-operative oil refineries, however, were responsible for a very substantial part of the volume. The biggest new project of the co-operatives was a \$16,000,000 nitrogens plant which was to be built in Lawrence, Kan., by the Consumers Cooperative association.



MEMBERSHIP in U.S. co-operatives, 1952 (Source: The Cooperative League of the USA)

In the consumer goods field a number of new co-operative supermarkets were opened during the course of the year. The business volume of the 1,000 co-operative food stores was estimated at a little more than \$100,000,000 per year at the close of 1952. The biggest new unit of the year was a \$1,000,000 co-operative shopping centre built in Akron, O., with sponsorship of the rubber workers and other organized trade union members. Business was already moving forward at a rate of \$3,000,000 a year.

The International Cooperative Petroleum association, which included 23 central co-operative organizations in 13 countries, had its largest membership in the U.S. where the co-operatives owned 1,600 oil wells producing nearly 150,000 bbl. of refined products a day.

During 1952 co-operative housing made the greatest gains in its history. The co-operative section of the Federal Housing Administration reported that 89 projects had been insured for a total of \$152,000,000 worth of mortgage insurance. These projects would house 16,000 families on completion. The projects ranged from individual homes in small towns and cities in Oklahoma to teacher-owned apartments in Omaha, Neb., and large multifamily projects in New York, N.Y., and other metropolitan areas.

Twelve additional co-operative projects to be built at a cost of \$14,000,000 had commitments for insurance. Total applications for mortgage insurance on new housing projects taken since the creation of the co-operative section of FHA in 1950 amounted to \$334,000,000.

The Insurance Conference of the Cooperative League, made up of 14 insurance companies in the fields of automobile, fire and life insurance, reported 4,500,000 policyholders and more than \$1,000,000,000 of life insurance in force. Premium income of \$90,000,000 a year made these companies a growing factor in the insurance industry.

The group of Farm Bureau Insurance companies, with head-

quarters in Columbus, O., reported that its automobile company had become the second largest mutual casualty company in the country. Growth was so rapid that the Farm Bureau companies started a decentralization program, and by the end of 1952 had opened new, self-contained regional headquarters in New Haven, Conn.; Annapolis, Md.; and Harrisburg, Pa.

This insurance group organized the People's Development company to undertake housing projects, People's Mortgage company to help provide mortgages for co-operative housing projects, a new finance company to finance automobiles and other purchases, and a garage company to cut the costs of accident repair work. The People's Broadcasting company, also owned by the Farm Bureau Insurance group, operated stations in Worthington, O., and Washington, D.C., with plans to expand the radio coverage within the next year.

The co-operative credit unions, in a new campaign of organization, added nearly 1,000,000 new members in the U.S. and Canada during the year. There were 16,000 credit unions serving more than 7,000,000 consumers. Small savings to their members had made possible an accumulation of assets of nearly \$1,000,000,000.

The Cooperative Health Federation of America, with members in the U.S. and Canada, reported a membership of 750,000 persons who were securing medical and hospital care through co-operative associations. Trade union-owned and other semico-operative health services, supported partly by members and partly by health and welfare funds to which employers contributed, were serving another 5,000,000 members.

Rural electric co-operatives continued to add new miles of line and new membership. About 200,000 more farmers became members of electric co-operatives during the year, boosting the total to more than 3,500,000 members. About 55,000 mi. of lines were energized, bringing co-operative ownership of power lines to 1,126,000 mi.

Several new co-operative telephone companies were organized during the year.

Marketing co-operatives with nearly 4,000,000 farmer-owners were responsible for helping their members market \$8,000,000,000 worth of commodities during the year. This business was handled through 7,000 local associations in such fields as grain, dairy products, cotton, fruits and vegetables, livestock, poultry, tobacco and other commodities.

The newest co-operative added to the extensive pattern of co-operative ownership was the American Travel association, organized early in 1952 by eight national organizations including the National Education association, Cooperative League of the U.S.A., Congress of Industrial Organizations, Americans for Democratic Action, National Farmers union, Farm Bureau Insurance companies, General Conference of Seventh Day Adventists and the University of Indiana. The American Travel association was to be devoted to stimulation of low-cost purposeful travel. (See also FARM CREDIT ADMINISTRATION.)

(W. J. CL.)

International.—In general the co-operative movement throughout the world showed many signs of progress in 1952. The well-established European co-operative movements all had to contend with the effects of the general rise in prices, even though the rise was here and there retarded or checked. Business turnovers rose, but expenses increased more than in proportion, financial liquidity became more difficult to maintain and dividends on purchases tended to be small. Outside Europe the greatest interest continued to be manifested by governments as well as by intergovernmental agencies in the development of all kinds of co-operative enterprise as a means of encouraging and accelerating progress in economically and socially backward territories.

The International Co-operative alliance removed its secretariat to a new headquarters in London in Sept. 1952. Throughout the year the meetings of its committees were marked by a less acrimonious tone in the exchanges between representatives from the U.S.S.R. and eastern European countries and those of western co-operative movements. The policy of rejecting applications for membership of the I.C.A. from organizations under rigid state or party control was firmly maintained. The co-operative unions of Byelorussia and the Ukraine, already indirectly affiliated through their membership of the Centrosoyus (Russian Co-operative society) of the U.S.S.R., were refused direct membership in their own right. Rumanian and Bulgarian organizations were not permitted to change their status from that of "individual" to "collective" members which would have increased their representation and voting power.

On the other hand, the Japanese Agricultural and Consumers' Co-operative unions, re-established after World War II, were admitted, as was also the National Centre of Co-operative Studies of Brazil. The I.C.A. now had affiliated bodies in 33 countries. The central committee of the alliance held its annual meeting at Reykjavik where the Icelandic Co-operative union was celebrating its 50th anniversary. The alliance was represented by its director at the first congress of the Indian Co-operative union which met at Bombay in February. A special auxiliary committee on co-operative housing was set up and confederations of co-operative housing societies in Germany and France were affiliated to the I.C.A.

The annual statistical returns based on 1950 showed an increase of 8,000,000 in the aggregate membership of the I.C.A.'s affiliated bodies, which now amounted to 106,000,000, covering 370,443 individual societies. The movement's trading sector had a turnover of £3,735,000,000 and the value of its own production was £942,500,000. Co-operative banks and central unions carried out transactions involving £10,283,000,000 and loans advanced by them and credit societies amounted to £780,000,000. The number of insurance policies running with co-operative insurance societies was 38,000,000. Excluding the U.S.S.R., more than 1,000,000 were employed in the movement.

Great Britain.—Membership of retail societies increased to 10,929,336 at the end of 1951, a net increase of 237,793 on the 1950 figure. Share capital of societies, standing at £223,410,028, showed a decrease of £8,298,793. This decrease, which affected almost all societies, was a matter of concern to the movement. Loan capital of retail societies totalled £63,884,014, a decrease of £350,540. Reserve and insurance funds at the end of the 1951 trading period were £24,595,325, an increase of £1,048,029. Total retail cash trade was £663,908,339, an increase of £50,143,119. This increase, however, was entirely the result of price increases and inflation. The English Co-operative Wholesale society's trade rose from £321,500,000 to slightly more than £359,000,000 and that of the Scottish C.W.S. from £68,000,000 to £75,000,000. An important decision taken by the co-operative congress in June 1952 was to abolish the central board of the co-operative union. This step made the central executive the governing body of the movement between congresses.

(W. P. Ws.)

Copper. World production of copper increased 5% in 1951, bringing the level up to within 6% of the war peak of 3,075,000 tons in 1942.

For comparison with the mine output figures shown in Table I, a corresponding table of smelter output will be found in the article MINERAL AND METAL PRODUCTION AND PRICES.

United States.—The salient statistics of the copper industry of the United States, as reported by the U.S. bureau of mines, are shown in Tables II and III.

Mine, smelter and refinery outputs were at about the same

Table I.—World Mine Production of Copper

	(Thousands of short tons)						
	1945	1946	1947	1948	1949	1950	1951
Belgian Congo	176.6	158.6	166.2	171.4	155.9	193.9	211.6
Canada	237.5	184.0	225.9	240.7	263.6	264.4	270.5
Chile	492.1	395.5	456.9	490.5	409.1	397.4	418.6
Cyprus . . . . .	...	0.1	14.0	17.4	26.4	25.7	25.1
Japan	30.8	18.9	23.4	28.3	36.1	43.3	46.6
Mexico	68.0	67.3	71.4	65.1	63.1	68.0	60.9
Peru	35.2	27.1	24.8	19.9	30.8	33.0	35.9
No. Rhodesia	219.7	211.1	217.5	249.7	285.6	327.9	349.7
South Africa	26.5	29.8	32.4	32.5	33.6	37.5	36.4
U.S.S.R.	154?	165?	182?	198?	220?	240?	280?
United States	772.9	608.7	847.6	834.8	752.8	909.3	928.3
Yugoslavia	13.8	35.6	44.7	58.0	37.5	47.7	39.6
Total	2,380	2,050	2,460	2,570	2,480	2,750	2,891

Table II.—Data of Copper Industry in the U.S.

	(Thousands of short tons)					
	1946	1947	1948	1949	1950	1951
Mine output	608.7	847.6	834.8	752.7	909.3	928.3
Smelter output . . .	599.7	862.9	842.5	757.9	911.4	930.8
Refinery output . . .	878.7	1,160.0	1,107.4	927.9	1,239.8	1,207.0
Domestic ore	578.4	909.2	860.0	695.0	920.7	951.6
Foreign ore	300.2	250.8	247.4	232.9	319.1	255.4
Secondary recovery .	803.5	961.7	972.8	713.1	977.2	975.0
From old scrap . . .	406.5	503.4	505.5	383.5	485.2	496.0
From new scrap . . .	397.1	458.4	467.3	329.6	492.0	470.0
Imports	393.3	413.9	507.4	552.7	690.4	489.4
Refined	154.4	149.5	249.1	275.8	317.4	238.5
Exports	97.5	197.0	207.0	196.0	192.3	166.3
Available for use* . .	1,342.1	1,615.9	1,655.0	1,391.2	1,850.1	1,775.2

* Available for use includes total refinery output, secondary from old scrap, and refined imports less exports; secondary from new scrap is only a turnover of metal in process and does not add to the supply available for use, and other imports have been covered in refined output from foreign ores.

Table III.—Mine Production of Copper in U.S.

	(Thousands of short tons)					
	1946	1947	1948	1949	1950	1951
Arizona	289.2	366.2	375.1	359.0	403.3	415.9
California . . .	4.2	2.4	0.5	0.6	0.6	0.9
Colorado	1.8	2.2	2.3	2.4	3.1	3.2
Idaho	1.0	1.6	1.6	1.4	2.1	2.2
Michigan	21.7	24.2	27.8	19.5	25.6	25.0
Missouri	1.9	1.8	2.4	3.7	3.0	2.4
Montana	58.5	57.9	58.3	56.6	54.5	57.4
Nevada	48.6	49.6	45.2	38.1	52.6	56.5
New Mexico . . .	50.2	60.2	74.7	55.4	66.3	73.6
Utah	114.3	266.5	227.0	197.2	278.6	271.1
Washington . . .	4.5	2.2	5.7	5.3	5.1	4.1
Others	12.8	12.7	14.3	13.5	14.5	16.2
Total	608.7	847.6	834.8	752.8	909.3	928.3

level in 1951 as in 1950, the first two showing a slight increase and the last a small decrease because of a drop in imports of crude copper. There was also a decrease in refined imports that was only partly offset by a decrease in refined exports, leaving a decrease of 4% in the supply available for use.

In 1952 the production rates were slightly lower than in 1951, the following being the totals for the first eight months of the year: mine output 614,671 tons; smelter output 679,370 tons (63,106 tons from foreign ores); refinery output 772,273 tons (158,581 tons from foreign crudes); refined imports, 184,327 tons; refined exports 112,903 tons; consumption 918,268 tons, an increase of 2% over the corresponding period of 1951.

Canada.—Primary copper output was 130,611 tons in the first half of 1952, down from 137,664 tons in the first half of 1951.

(G. A. Ro.)

Corn. Corn (maize) in the U.S. gave an abundant 1952 crop of 3,256,550,000 bu., the second largest on record (3,605,000,000 bu. in 1948) and of excellent quality. The 83,369,000 ac. planted were only 94% of the 89,000,000-ac. officially recommended goal. In spite of drought damage in the south, average yields were the second highest on record.

In Iowa both yield per acre (63 bu.) and production were new high records. Iowa corn production was valued at fully \$1,000,000,000, the first crop in any state to reach that amount.

Table I.—U.S. Corn Crops

	1952*	1951	Average, 1941–50
Total production (thousands of bu.)	3,256,550	2,941,423	3,011,651
Acres harvested (thousands)	82,232	81,306	86,901
Yields (bu. per acre)	39.6	36.2	34.7

* Indicated.

Table II.—U.S. Corn Production by Leading States

(In thousands of bushels)							
State	Indicated 1952	1951	Average 1941-50	State	Indicated 1952	1951	Average 1941-50
Iowa . . .	680,337	471,780	532,801	Texas . . .	39,117	42,143	56,861
Illinois . .	515,816	491,865	436,062	Georgia . .	35,079	49,536	44,673
Minnesota .	269,331	215,038	222,046	Virginia . .	33,880	41,624	38,113
Nebraska .	254,880	187,620	223,532	New York . .	28,755	28,116	25,248
Indiana . .	227,750	241,415	215,425	Mississippi .	27,135	38,141	44,293
Ohio . . .	181,917	169,536	174,250	Alabama . .	27,071	46,303	46,470
Missouri . .	170,840	132,022	145,301	North Dakota	23,982	23,332	26,010
Wisconsin .	124,280	103,759	111,416	Maryland . .	22,419	20,430	17,626
South Dakota	109,740	85,624	97,944	South Carolina	18,750	26,320	26,118
Michigan . .	80,688	69,056	59,155	New Jersey .	16,476	9,712	7,994
Pennsylvania	63,967	60,766	56,703	Arkansas . .	14,471	23,218	28,821
Kentucky . .	61,741	80,662	77,241	Louisiana . .	13,116	16,307	17,493
Kansas . . .	57,960	58,296	71,894	Colorado . .	12,558	15,782	14,622
North Carolina	55,075	67,611	59,560	Oklahoma . .	10,152	21,156	25,052
Tennessee .	39,840	60,360	64,488				

Table III.—Corn Production of the Principal Producing Countries

(In thousands of bushels)							
Country	1952	1951	1950	Average, 1935-39			
United States	3,256,550	2,941,423	3,057,803	2,315,544			
Brazil	—	230,000	228,000	215,153			
Argentina	—	78,500	105,000	301,986			
Mexico	148,000	135,000	98,420	67,523			
Italy	97,000	118,000	98,000	113,000			
China	—	—	—	262,000			
India	—	79,500	68,000	67,240			

Prices to farmers, reflected of course in the major market, Chicago, continued during part of the year at a level slightly higher than in 1951, advancing from an average of \$1.62 per bushel in Nov. 1951 to \$1.73 in the summer of 1952, above the government support level of \$1.57 per bushel. However, the price declined below the new support level of \$1.60 as the 1952 crop began to move to market. It seemed likely that government loans or purchase agreements would eventually be taken out on much more than the 26,300,000 bu. of the 1951 crop so covered. Carry-over on Oct. 1, 1952, was reduced to about 500,000,000 bu., compared with 739,000,000 bu. a year earlier. Holdings of the Commodity Credit corporation on Oct. 1 were approximately 300,000,000 bu., compared with 487,400,000 bu. in 1951. Total supplies thus were 3,758,000,000 bu., compared with 3,681,000,000 bu. in the previous year. Exports of as much as 100,000,000 bu. were anticipated against only 75,000,000 bu. in 1951-52.

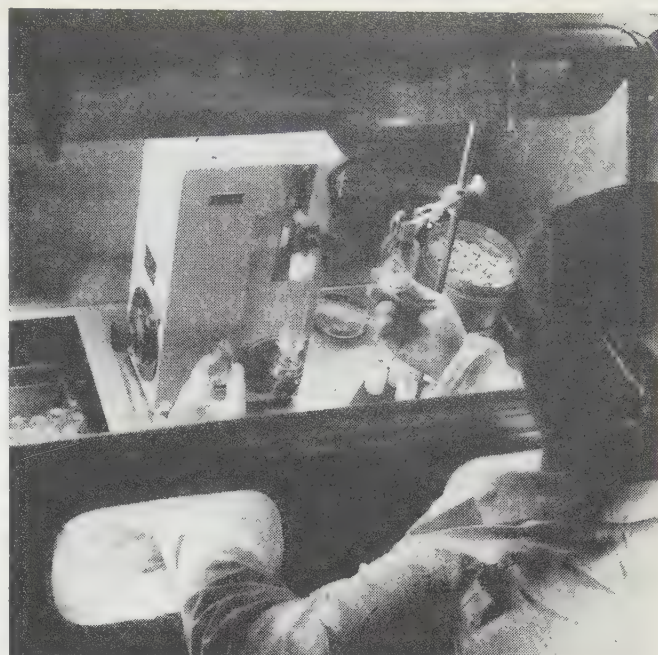
In spite of a partial failure of the corn crop in Yugoslavia, it appeared that the 1952-53 world crop was about 5,600,000,000 bu., 6% larger than the previous year, 18% more than prewar and the second largest on record. Mexico attained an all-time record production. Argentinian exports of corn were 501,563 long tons (about 24,000,000 bu.) in 1951-52, compared with only 155,303 tons in the previous year—however, that level was only about one-tenth of prewar. Early conditions for the 1952-53 crop were the most favourable for several years and planted acreage presumably was stimulated by the announcement of the new basic price to growers equivalent to \$2.24 per bushel in U.S. currency, compared with \$2.04 previously. The South African corn crop harvested in early 1952 was reduced by drought to an estimated 62,000,000 bu., compared with 101,000,000 bu. a year earlier. The domestic price was equivalent to \$1.18 per bushel. (See also LIVESTOCK; VEGETABLES.)

(J. K. R.)

Corporation Income Tax: see TAXATION.

Cortisone, Hydrocortisone and Corticotropin.

Cortisone, a crystalline steroid hormone, was isolated from extracts of the adrenal cortex, along with several other steroids, in 1935 by E. C. Kendall and co-workers and independently by S. Reichstein. In 1946 L. H. Sarett synthesized the substance from a bile acid (desoxycholic acid) which allowed it to be produced in quantities sufficient for clinical evaluation. In 1948 J. S. Hench and colleagues demonstrated that the manifestations



PACKAGING CORTISONE at the Danville, Pa., plant of Merck & Co., Inc., where the antibiotic went into mass production in 1952. Vials are shown being filled with cortisone in sterile suspension

of rheumatoid arthritis and other related nonhormonal conditions were suppressed strikingly by its administration. After 1949 cortisone was found to alter beneficially the course of many apparently disparate pathologic conditions. It then became evident that the adrenal cortex exerted a wide influence on bodily mechanisms, that it was involved in the basic reactions of tissues and that hormones derived from it could be therapeutically applied more broadly than initially anticipated.

Hydrocortisone, designated at first as Kendall's Compound F, was also isolated from extracts of the adrenal cortex in 1935. It is closely related chemically to cortisone, differing in only one structural detail—a hydroxyl radical instead of a ketone group is present at the 11th carbon position in the steroid nucleus. Until 1951 supplies of the hormone were too small to permit trials in patients, but limited laboratory studies were conducted. These demonstrated that hydrocortisone possessed physiologic properties similar to cortisone and that, milligram for milligram, it was distinctly more potent. Laboratory data also suggested that hydrocortisone was the principal adrenal cortical steroid and participated, more than cortisone, in physiologic reactions, at least under conditions of stress.

Methods for producing hydrocortisone in larger quantities were developed in 1951. At first the hormone was made by two very complicated processes of biosynthesis, and later by chemical synthesis. Two forms of hydrocortisone were studied clinically: the pure hormone, hydrocortisone (free alcohol); and an ester, hydrocortisone acetate. Hydrocortisone (free alcohol) was found to be much more soluble than the acetate in various media and almost twice as effective when administered by mouth. The acetate ester, however, proved highly efficient when used locally; *i.e.*, applied to the eyes or injected directly into joints. Tests made with hydrocortisone (free alcohol) in rheumatoid arthritis and in asthma indicated that it was at least 50% more potent than cortisone. Smaller oral doses were needed to control the diseases, and treatment was attended by fewer hormonal complications, suggesting that hydrocortisone (free alcohol) may be superior to cortisone as a therapeutic agent.

Corticotropin (ACTH, adrenocorticotrophic hormone), a complex protein derivative of the anterior pituitary gland, was extracted as an impure compound by J. B. Collip and co-workers

in 1933 and was isolated in pure form in 1943 by G. Sayers and collaborators and by C. H. Li and colleagues. The hormone regulates the function of the adrenal cortices and stimulates them to secrete a number of steroid hormones, principally hydrocortisone and corticosterone (Kendall's Compound B). Its physiologic effects, except for minor variations, are similar to those of hydrocortisone and cortisone. Because its action is mediated through the adrenal cortices, corticotropin is effective only if these glands are functionally responsive. Being a protein substance, it is destroyed when taken orally and must be administered by injection.

The mechanism by which the pituitary-adrenal system functions under physiological conditions was, by 1952, only vaguely understood. Presumably the output of steroid hormones from the adrenal cortices is regulated by the amount of corticotropin secreted by the anterior pituitary gland. A state of reciprocal control was thought to exist whereby a fall in the level of steroid hormones in the blood stream acts as a stimulus for the production of greater amounts of corticotropin. The latter hormone is supplied continuously through the circulation, its concentration ever fluctuating to cope with environmental changes. Under stress corticotropin is discharged in greater amounts, and the adrenal cortices are stimulated to yield more steroid hormones. These, in turn, incite the metabolic changes needed for adequate physiologic adjustment.

How hydrocortisone and cortisone (whether administered directly or produced indirectly by corticotropin) exert their beneficial influence on disease processes was not understood, but authorities agreed on certain general points: (1) The hormones do not destroy pathologic organisms and do not act directly against toxins or allergens. (2) They suppress, in some mysterious way, the reactions of tissues to injuries of various types. (3) Their effects are temporary and last only as long as they are taken—sustained improvement in chronic diseases depends on their continued administration, but in some acute self-limited diseases they may inhibit the process while the disease runs its natural course. (4) Large and apparently supernormal amounts must be given in order to reverse inflammatory or allergic reactions—doses which, when excessive, may produce unwanted hormonal complications.

Cortisone, hydrocortisone and corticotropin stimulate a variety of physiologic functions and metabolic and clinical signs of adrenal cortical hyperfunction may attend their use. Undesirable effects such as the following may appear: (1) retention of salt and fluid (oedema); (2) abnormal fat metabolism manifested by rounding of facial contour, deposits of fat in the neck, and gain in weight; (3) increased androgenic (masculinizing) activity as evidenced by increased hair growth, acne and decreased menstrual function; (4) impaired carbohydrate tolerance; (5) nervous system effects such as euphoria, nervousness, insomnia and alterations in mood or psyche. Hormonal complications, however, are usually mild and are fully reversible, disappearing with reduction of dosage or cessation of administration. Their incidence and severity vary directly with the daily amount of hormone used and most may be controlled or prevented by judiciously employing doses of reasonable size, or by prescribing simple adjunctive measures, or by using both of these procedures. The hormones are contraindicated in the presence of some conditions, including active tuberculosis, severe diabetes mellitus, psychotic tendencies and active peptic ulcer.

Rheumatoid Arthritis.—Cortisone had been used extensively as a treatment for rheumatoid arthritis. Its administration rapidly improves those reversible manifestations resulting from active inflammation (joint pain, stiffness, tenderness, swelling, etc.), and suppression of the disease may be maintained for long periods with continued therapy. Irreversible changes resulting

from joint destruction (fixed deformities, ankylosis, etc.) are not benefited. Cures are not promoted, the basic pattern of the disease is not altered, and symptoms return, usually promptly, when the hormone is withdrawn.

Various dosage plans for cortisone were employed but most rheumatologists preferred continuous treatment with relatively small maintenance doses. Amounts of about 100 mg. a day (given by mouth in four divided doses) are prescribed at first to bring the disease under control. Dosage is then gradually reduced to the smallest daily amount which will uphold adequate improvement. This amount is then continued, the dosage being adjusted from time to time to counteract fluctuations of symptoms. Attempts are made to provide reasonable degrees of relief; complete suppression of the disease is not sought unless this can be accomplished with small and presumably safe doses.

With this scheme satisfactory results had been maintained in approximately two-thirds of the patients. The size of the daily dose required varied in general with the severity of the rheumatoid arthritis. Results were poorest in severe cases with very active disease as they usually required large maintenance amounts of cortisone—amounts which frequently provoked adverse hormonal complications and could not be tolerated. All potential risks from indefinitely continued therapy had not been determined, and many authorities advised, for safety's sake, periodic rest intervals from treatment. While cortisone had been highly successful in the management of many patients with rheumatoid arthritis, most rheumatologists did not consider it as treatment of choice for most cases and recommended that conservative measures be tried first.

Hydrocortisone acetate in small doses injected directly into an affected joint was found to produce marked alleviation of pain, stiffness and swelling. The relief is usually quite temporary, however, and repeated injections at frequent intervals are needed to maintain improvement; sometimes a small series of injections promotes more prolonged relief. As the benefits are entirely local, the procedure is of limited value. It may be used successfully when the arthritis is confined to one or two accessible joints and as an adjunctive measure to suppress, during the course of otherwise satisfactory systemic therapy, flare-ups of the disease in one or two joints.

Rheumatic Fever.—Used in adequate doses, cortisone and corticotropin rapidly suppress the acute manifestations of rheumatic fever (fever, tachycardia, polyarthritis, elevated sedimentation rate, electrocardiographic abnormalities, etc.). With continuation of therapy, the inflammatory changes may be inhibited while the disease runs its natural course; but premature discontinuance of therapy encourages relapse. The drugs were most effective when employed early during an initial acute attack. Investigators hoped that routine treatment with the hormones would prevent or minimize residual heart damage, but follow-up studies for several years would be needed to establish how fully this hope might be justified. Reports were conflicting, and some, based on controlled investigations, indicated that the course of acute rheumatic fever is not influenced more favourably by the hormones than by conventional salicylate therapy, and that their use does not lessen the incidence of valvular heart disease.

Other Collagen Diseases.—Diffuse collagen diseases such as periarteritis nodosa, disseminated lupus erythematosus and dermatomyositis may be temporarily benefited by cortisone or corticotropin administration. The dosages required are usually large and adverse effects are often marked. Use of the hormones during acute phases had prolonged life, but frequently the diseases became unresponsive later, terminating fatally despite treatment.

Osteoarthritis.—Cortisone and corticotropin administered

systemically had not proved worthwhile in the treatment of osteoarthritis. The meagre benefits derived usually did not warrant the risks involved. Hydrocortisone acetate injected locally into an osteoarthritic joint, however, frequently gave temporary relief and the procedure was used to good advantage in suppressing exacerbations of symptoms in large weight-bearing joints.

Asthma and Allergies.—Cortisone and corticotropin proved valuable in the treatment of asthma. For very acute or intractable cases (*status asthmaticus*) some authorities preferred corticotropin administered intravenously. Less severe cases may be controlled readily by cortisone given orally. Short-term therapy is usually sufficient for seasonal asthma, but prolonged administration may be needed for chronic cases. As for rheumatoid arthritis, the smallest maintenance dose possible was employed and some asthmatic patients were maintained satisfactorily on cortisone given continuously for more than two years. A small number of patients eventually became resistant to the drug, but responsiveness returned following rest periods from treatment. Excellent results were reported in sensitivity reactions to various drugs (penicillin, tetanus antitoxin, gold salts, sulfonamides, etc.), in contact dermatitis resulting from poison ivy, and in serum sickness.

Addison's Disease and Other Endocrine Disorders.—Cortisone therapy served as a great advance in the management of adrenal and pituitary insufficiencies. Small doses of the hormone (10 mg. to 25 mg. a day), along with auxiliary measures (dehydrocorticosterone and increased salt intake), allowed patients with Addison's disease to live indefinitely as relatively healthy individuals. In acute adrenal insufficiency resulting from extensive burns, shock from various causes, or following partial or complete removal of the adrenal glands, cortisone often was a life-saving measure. It was highly effective also in the preoperative and postoperative management of patients undergoing surgery of the pituitary gland.

Eye Diseases.—By their favourable action in controlling inflammation and exudation, cortisone and corticotropin earned an important place in the treatment of many eye conditions. They were of special value in suppressing ocular inflammation resulting from acute toxic or physical trauma, and allergic reactions of the external eye and uveal tract (iritis). In inflammations resulting from infection, specific antibiotic or chemotherapeutic agents employed in conjunction with cortisone yielded best results. Diseases of the external eye may be treated successfully by topical application of cortisone, either as an ointment or drops, but when internal structures are involved, both local and systemic administration are recommended.

Blood Disorders.—Cortisone and corticotropin proved disappointing in most haematologic disorders. Some investigators claimed that 40% of their patients with idiopathic thrombocytopenic purpura experienced long remissions following a course of either hormone, but others noted less favourable results and did not consider the drugs as major adjuncts in therapy. A number of reports indicated that about 50% of children with acute leukemia improved dramatically for temporary periods with cortisone therapy; recurrences, however, often failed to respond and lasting remissions were rarely provoked. Cortisone and corticotropin were said to be less effective than other measures in the treatment of chronic leukemia. Some cases of Hodgkin's disease showed dramatic and prompt, but temporary, remission of the disease. (See also ALLERGY; CHEMISTRY; CHEMOTHERAPY; ENDOCRINOLOGY; INTOXICATION, ALCOHOLIC; MEDICINE; PSYCHIATRY; PSYCHOSOMATIC MEDICINE; RHEUMATIC DISEASES; STOMACH AND INTESTINES, DISEASES OF.)

(E. W. BD.)

Cosmic Rays: see PHYSICS.

Costa Rica. A Central American republic, Costa Rica is located between Nicaragua and Panamá. Area: 19,238 sq.mi.; pop. (1950 census of the Americas). 801,000, classified as about 80% white, 16% mixed, 3% Negro and less than 1% Indian; (1951 est.) 825,000. The capital is San José (1949 pop., 79,694); other principal cities are Alajuela (11,187), Cartago (11,624), Guadalupe (15,966), Heredia (10,730), Liberia (3,061), Limón (12,666), Puntarenas (12,329), Tibás (5,227) and Turrialba (5,316). Language: Spanish; religion: predominantly Roman Catholic. President in 1952: Otilio Ulate Blanco.

History.—On the political front, 1952 was an essentially uneventful year for Costa Ricans. President Ulate continued the task of reconstruction following the chaotic civil war of 1948, and the reputation of his government as one of the more democratic in the Caribbean area was strengthened. Col. José Figueres, who had led the pro-Ulate forces in the civil war, and was himself acting president for a time thereafter, drifted into political opposition against the government. On March 9, Figueres announced that he would be a presidential candidate in the election scheduled for 1953. (G. I. B.)

Education.—In 1951 there were 1,139 public and private primary schools with 4,821 teachers and 116,157 pupils. In 1950 there were 8 public secondary schools, 16 private schools and 7 technical schools. University education was available at the University of Costa Rica. About 16% of the 1952 budget was allocated to education. There were 92 motion-picture theatres in 1951 with seating capacity of 43,000.

Finance.—The monetary unit is the colón, valued at 17.64 cents U.S. currency, controlled rate, and 15.04 cents, uncontrolled rate, on Sept. 30, 1952. The national budget for 1952 provided for expenditure of 149,388,795 colones and revenue of 149,612,220 colones. Revenue in 1951 was 160,067,000 colones; expenditure, 140,890,000 colones. The public debt on Dec. 31, 1951, was 367,007,979 colones, of which 164,534,396 colones represented the external debt. Currency in circulation on Aug. 31, 1952, was 110,100,000 colones; commercial deposits 141,600,000 colones; gold reserves \$2,060,000. The cost of living index (San José) stood at 124 in Sept. 1952 (1948=100).

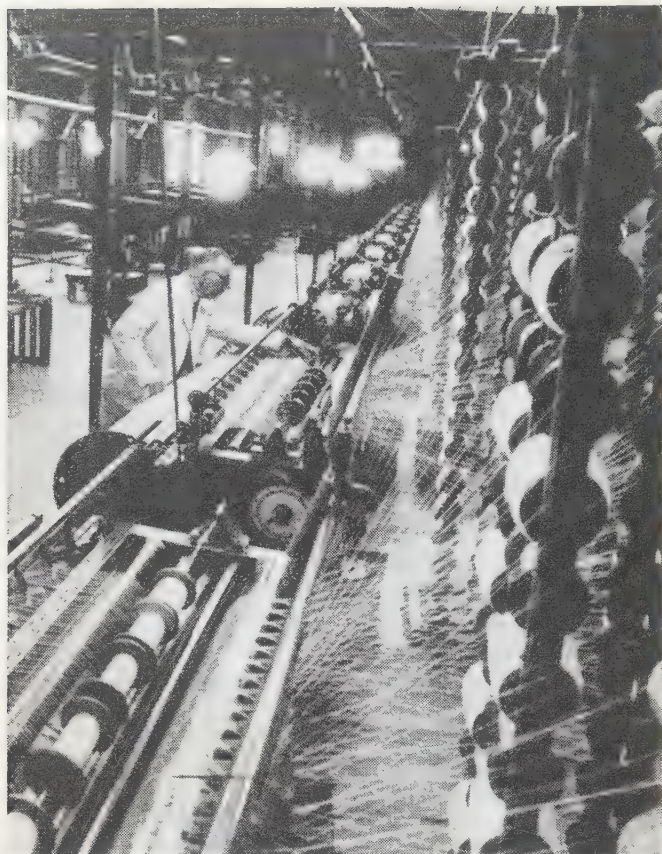
Trade.—Exports in 1951 amounted to \$39,287,464; imports, \$55,740,518. Chief exports were coffee (56%), bananas (27%), abacá (6%) and cacao (5%). Leading customers were the U.S. (75%), Canada (7%), Italy (3%), the Netherlands (2%), and Belgium (2%); leading suppliers, the U.S. (66%), Germany (7%), the United Kingdom (6%), Canada (4%) and the Netherlands Antilles (2%). Important imports included textiles, machinery and vehicles, wheat flour and petroleum products.

Communications.—Railroad trackage included 410 mi. of public railway and 250 mi. of private railway. On Dec. 31, 1948, there were 1,015 mi. of highway, of which 926 mi. were all-weather roads. Registered motor vehicles on Jan. 1, 1951, included 4,645 automobiles, 2,308 trucks and 810 buses. In 1950 domestic air line flights carried 124,000 passengers and 14,700,000 lb. of cargo; international flights, 42,000 passengers and 1,600,000 lb. of cargo.

Agriculture.—Coffee production in the 1951-52 season was 351,049 bags of 132 lb. each (1950-51: 386,449 bags). In 1951, 228,488 bags were exported to the U.S. Costa Rica continued in 1951 to be the world's largest exporter of bananas, exporting 15,254,000 count bunches (50 lb. each), of which 11,712,000 bunches went to the U.S. In 1951-52, 2,000 metric tons of abacá were produced and, in 1950-51, 5,000 tons of cacao. The 1950 livestock census (preliminary figures) showed 592,402 cattle, 112,156 pigs and 77,335 horses. (J. W. Mw.)

Cost of Living: see BUSINESS REVIEW; PRICES.

Cotton. **Cotton Manufacture.**—A year of "recession" in U.S. cotton spinning activities appeared to have ended in the early summer of 1952. Early in the year production of cotton textiles was about 15% below 1951. Prices were still being cut on some items for March and April delivery. New England had about one-tenth of its textile workers unemployed. In April the industry operated at only 114.5% of capacity on a two-shift, 80-hour basis. By September the industry was operating at 135.1% of capacity on a two-shift, 80-hour basis, compared with 128.1% in August and 127.8% in September 1951. Producers were completely booked on fourth quarter denim goods and there were delivery problems regarding sheets and pillow cases. Price ceilings on most textiles had been suspended in May. Fall prices were firm, some strong; some yarns



LANCASHIRE COTTON MILL which operated only three days per week in 1952 during an acute slump in the British cotton industry brought on by a gradual loss of foreign and Commonwealth markets

were three to five cents per pound above spring levels. The New England group continued to press for equalization of the minimum wage level with southern mills.

Exports of cotton piece goods were forecast within the wide range of 600,000,000 to 777,000,000 sq.yd. for 1952, compared with more than 800,000,000 sq.yd., valued at \$468,000,000, in 1951.

British textile exports ceased to fall in July 1952 for the first time in a year, but cotton goods exports for the first seven months of the year were £96,991,000 compared with £120,567,000 in the same months of 1951. In April British cot-

Table I.—Exports of Cotton Piece Goods

(In millions of square yards)

Country	1953*	1952†	1951	1950
India	1,000	550	776	1,109
Japan	1,100	926	1,082	1,088
United Kingdom	1,350	746	865	822
United States	725	777	809	560
Western Europe	1,700	1,724	1,867	1,685
Other Countries	—	97	122	82
Total	—	4,820	5,521	5,346

*Estimated. †Projection of rate for first six months.

ton spinners for the first time in ten years were allowed limited freedom to buy raw cotton direct rather than through the raw cotton commission.

The meeting of the leaders of the world's cotton textile trade at the International Cotton conference, held at Buxton, Eng., in September, apparently solved few or none of the problems confronting the industry. The information in Table I on exports, actual and anticipated, was released. That some of the expectations for 1953 were far above 1952 rates is clear, but pre-World War II rates averaged about 7,000,000,000 yd. in world trade.

United States Production.—The estimated U.S. 1952 cotton

Table II.—U.S. Cotton Production by States

(In thousands of 500-lb. bales)

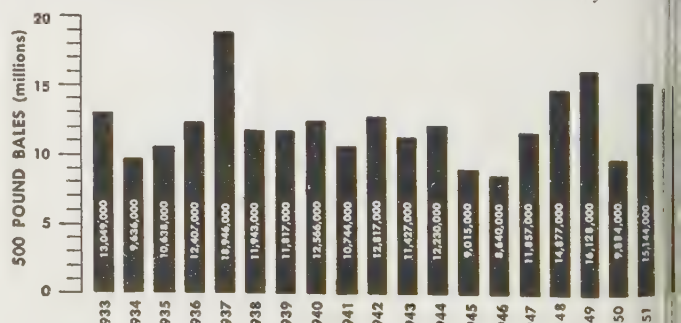
State	Indicated 1952	1951	Average 1941-50
Texas	3,660	4,074	3,020
California	1,900	1,765	627
Mississippi	1,800	1,608	1,652
Arkansas	1,250	1,249	1,373
Arizona	1,050	803	250
Alabama	825	909	899
Louisiana	715	760	524
Georgia	690	931	686
South Carolina	600	871	651
Tennessee	530	534	549
North Carolina	500	542	523
Missouri	385	309	363
New Mexico	300	273	152
Oklahoma	215	462	453
Florida	27	32	13
Virginia	15	14	21
Other states	11	8	14

crop of 14,905,000 bales was a short-fall of the official goal of 16,000,000 bales and the 1951 crop of 15,144,000 bales, but exceeded the 1941-50 average of 11,775,000 bales. Acreage in cultivation on July 1 was indicated at 26,051,000 ac., about 7% less than July 1951 and much below the 28,000,000 ac. official goal. This was interpreted unofficially as indicating a crop of about 14,500,000 bales. The official indication as of Aug. 1 was 14,735,000 bales, but widespread drought and high temperatures after mid-June retarded growth and caused extensive shedding. The estimate as of Sept. 1 was reduced to 13,889,000 bales, after which there was some recovery and excellent harvest weather. The October estimate was 4% above that of September. Acreage for harvest was estimated at 24,639,000 ac., and the lint yield per harvested acre at 289.7 lb., compared with 271.9 lb. in 1951 and an average for 1941-50 of 267.6 lb.

Long staple American Egyptian cotton produced in Arizona, Texas and New Mexico was estimated at 80,800 bales, compared with 47,200 in 1951 and an average for 1941-50 of 28,400 bales. Yields of 280.2 lb. per acre were favourable but not much above 1951 or average.

All in all it appeared that the crop, though smaller than requested, would, with the carryover on Aug. 1 of about 2,500,000 bales, fully provide for estimated 1952-53 domestic consumption of 9,200,000 bales and for exports, probably in the range of 4,500,000 to 5,000,000 bales, rather than about 5,800,000 bales as in 1951-52. Thus it seemed that the carryover might be increased moderately on Aug. 1, 1953.

Prices fluctuated rather sharply with changing crop and demand prospects during the year, but neither reached the ceiling nor dropped to government support levels. The ceiling price of 45.39 cents per pound was suspended in May, with notice, however, that it would be reimposed if cotton should again rise to a point within 2 cents of the ceiling. The average price support rate for 1952-crop middling $\frac{7}{8}$ -inch upland cotton was set at 30.91 cents per pound, compared with 30.46 cents for the 1951 crop. Purchase agreements were made available to cotton producers for the first time as well as loans already used. The price declined somewhat after the more favourable crop report in October, and producers were advised officially to re-



COTTON CROP in the United States. The figure for 1952 is the department of agriculture's estimate

Table III.—Cotton Production of the Principal Producing Countries

(In thousands of 500-lb. bales)

Country	1952	1951	1950	Average, 1935-39
United States	14,413	15,130	10,012	13,149
China (including Manchuria).	2,900	3,100	2,430	2,855
India	2,800	3,000	2,695	5,348*
Egypt	1,750	1,579	1,754	1,893
Brazil	1,400	1,500	1,550	1,956
Mexico	1,100	1,375	1,120	334
Pakistan	1,325	1,225	1,227	
Turkey	800	712	542	249
Argentina		600	482	289
Peru		400	380	379
Uganda		288	289	281
Anglo-Egyptian Sudan		278	442	248

*Includes Pakistan.

strict their marketings until prices firmed. In October it was announced that there would be no restricting acreage allotments or marketing quotas on the 1953 cotton crop, whether of upland or extra long staple type.

World Cotton Production.—World cotton production for 1952-53 was estimated tentatively at 34,200,000 bales, compared with 35,300,000 bales in the previous year and 31,689,000 bales average pre-World War II. However, the world supply was tentatively forecast at 48,700,000 bales, 1,900,000 bales higher than a year earlier, because of an increased carryover on Aug. 1, 1952, of 3,000,000 bales, thus more than offsetting the 1,100,000 bale crop decline.

World cotton consumption in 1951-52 was approximately 32,200,000 bales, compared with 33,000,000 bales during the preceding year.

World trade in raw cotton amounted to about 12,000,000 bales in 1951-52, only 100,000 bales more than in the previous year when supplies were much scarcer. In general, 1952 was a year in which foreign cottons lost much of their previously high premiums over U.S. cotton. The decline, though orderly for the most part, amounted in some cases to 10 to 15 cents per pound in a month's time. In Japan cotton prices declined to a level only one-third as high as the peaks reached after the Korean outbreak. Brazil was reported as offering to buy the entire crop at a minimum price to producers, equivalent to 14 cents per pound for cotton in the boll, and then to sell on the world market. The U.S.S.R., meanwhile, was reported as attempting to expand its production by one-fourth. Pakistan, however, cut the export duty from 300 rupees per bale in 1951 to 180 rupees; then in September reduced it to 90 rupees on long staple cotton in order to clear stocks and earn foreign exchange. India also cut duties by 50% in March, from 400 rupees (\$8.40) to 200 rupees per bale.

Cottonseed.—The U.S. cottonseed crop of 1952 was indicated as probably not more than 6,057,000 tons, compared with 6,325,000 tons in 1951. Cottonseed meal was at its ceiling price during 1952, prior to ginning of the new crop. The oil, however, tended lower. The world cottonseed crop was estimated at 16,170,000 short tons, about 4% less than in 1951-52, but 6% more than pre-World War II. (See also LINEN AND FLAX; RAYON AND OTHER SYNTHETIC FIBRES; TEXTILE INDUSTRY; WOOL.)

(J. K. R.)

Cottonseed Oil: see VEGETABLE OILS AND ANIMAL FATS.

Council of Europe: see EUROPEAN UNION.

Council of Foreign Ministers: see GERMANY.

Counterfeiting: see SECRET SERVICE, U.S.

Countries of the World, Areas and Populations of the: see AREAS AND POPULATIONS OF THE COUNTRIES OF THE WORLD.

Courts: see LAW.

Cranberries: see FRUIT.

Credit, Consumer: see CONSUMER CREDIT.

Credit Unions: see FEDERAL SECURITY AGENCY.

Cricket. Ever since the victorious tour of the West Indians in England in 1950 the prospect of their visit to Australia had aroused the keenest anticipation. In the event, the test matches played between the two teams in the winter of 1951-52 proved disappointing. At no time did the cricket of either side recapture the brilliance that had been seen when the Australian and West Indian teams had last visited England. In the highly charged atmosphere of the test matches the crises, when they came, seemed to reveal something lacking in the leadership and temperament of the West Indians, while the Australian batting still appeared to be missing the lead given to it by Sir Donald Bradman. Australia won by four matches to one. The great match in the series was the fourth when the West Indians came within an ace of making the tally two all.

In the summer of 1952 the fifth Indian touring team to visit England found that, in spite of fine weather, their lack of experience was a fatal handicap. In the first match at Leeds, V. S. Hazare, 89, and V. L. Manjrekar, 133, redeemed a sorry start, only to see the last 7 wickets fall for 29 more runs. The start of the second Indian innings was sensational, 4 wickets falling before a run had been scored. In the second match at Lord's, India was reinforced by V. Mankad. Going in first, he at once played attacking strokes, but only his captain could give him real support to produce a modest total of 235. He then entered upon an astonishing bowling marathon which brought him in 72 overs 5 wickets for 196 runs. The opening English batsmen were tightly pegged down and though L. Hutton accelerated in the later stages of his 150, it was left to T. W. Graveney and T. G. Evans to bring real life into the game, Evans only just failing to reach his 100 within the two hours before lunch on the third day; England's total was 535. Mankad then immediately returned to the field to play another magnificent innings of 184. With Hazare again giving him valiant support the score at one time read 270 for 2 wickets and the English attack seemed verging on the innocuous, but once again the later batting broke down.

In the county championship Surrey won "by the length of a street," with a total of 256 points. Yorkshire and Lancashire were runners-up.

The Gentlemen v. Players game produced a splendid finish, the Players winning by 2 runs in the last over of the day. In the University match, against Cambridge's four test match players, D. S. Shepard, P. B. H. May, J. J. Warr and the South African C. N. McCarthy, with R. G. Marlar, the best amateur spin bowler, to support them, Oxford could field only one player of approximately equal class in M. C. Cowdrey. Fighting dourly, their batsmen achieved a first innings of 272, Marlar taking 7 wickets. But Cambridge was able to declare before lunch on the last day at 408 for 8. With Oxford losing 6 wickets for 94 all seemed over, but A. L. Dowding (52) played admirably and A. Coxon challenged fate with rare courage: a catch or two was missed and the clock won. Harrow beat Eton by 7 wickets, their first victory in the two-day match since 1938. (H. S. A.)

Crime. **United States.**—The nation-wide crime reports compiled by the Federal Bureau of Investigation showed that there was an increase in nearly all crimes during the first half of 1952 to a general level that was 6.4% higher than that recorded in 1950. Thus for the fourth successive year the nation's general crime trend continued upward. These general patterns affected both cities and rural areas in 1952. The largest semiannual increase was in robbery, which jumped 13.8%. Other notable rises were in burglaries, 8.7%, auto thefts, 8.8%, and assaults with a lethal weapon, 9.3%.

As in prior years the east south central states had the highest homicide rates, with the New England states showing rates

only 8% as high. Property crimes—robberies, burglaries and thefts—recorded highest rates on the Pacific coast.

Completed data for 1951 showed that 58% of all robberies were committed on the highway, with 31% directed against commercial establishments. Prominent in the latter category were gasoline stations, chain stores and banks.

Commercial premises also were the favoured objects of attack in burglaries, 90% of which occurred during the nighttime.

Of stolen property, three-fourths of the cases involved losses of less than \$50 in value. As usual, more than 90% of all stolen cars were recovered, but only one auto theft in four was followed by an arrest. Of these, 64.1% were found guilty. These figures have a special bearing because auto thefts represented 60.2% of the dollar loss from crime during the first half of 1952.

Recoveries of other types of property were effected at much lower rates, as follows: jewellery 18.2%, clothing 16.6%, currency 12.9%, furs 3.7% and miscellaneous property 26.0%.

For the limited list of offenses for which national tabulations are made, more than 1,000,000 were committed in the first six months of 1952. Since the FBI recorded more than 423,000 arrested persons whose fingerprints had been taken during the same period, it was believed that the annual total of all major offenses must be close to 5,000,000. This figure would not include minor offenses for which state laws do not permit the police to fingerprint. Participation of youthful offenders in criminal acts is also hard to gauge because of the widespread policy to treat them as juvenile delinquents. But even with most offenders under age 16 removed beyond all possibility of counting, 15% of all persons arrested and fingerprinted during the first half of 1952 were under 21 years of age. An additional 14.3% were between 21 and 24 years of age. The largest number of fingerprinted arrests were recorded for age 18, with ages 23, 21, 22 and 24 following so closely as to place them all in a single outstanding category.

Of the 423,000 persons arrested and fingerprinted during the first half of 1952, three-fifths already were represented in the files of the FBI identification division.

As noted in previous years, the rural crime rates for the first half of 1952 showed crimes against the person to be generally comparable with those recorded in cities. Crimes against property, however, are generally at a lower rate in rural areas, in part because of the difficulties experienced in disposing of stolen property, and in part because the ready availability of costly objects is less in rural areas than in urban. An added factor is the less satisfactory level of crime reporting by rural sheriffs and constables, which is particularly notable with respect to crimes against property.

Sixty-four police officers were killed in line of duty during 1951, showing a heavy increase (78%) over 1950.

The size of police forces in U.S. cities continued to increase more rapidly than the population. As of April 30, 1952, the number of police per 1,000 of urban population had risen another 5 points over 1951, for a national ratio of 1.75. Larger cities showed much higher levels. The Middle Atlantic states had the highest ratio, in part because of the heavy concentration of large cities in that region. (See also FEDERAL BUREAU OF INVESTIGATION; JUVENILE DELINQUENCY; LAW; SECRET SERVICE, U.S.)

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Great Britain.—In 1951 the number of persons in England and Wales found guilty of offenses of all kinds was 723,320 (compared with 688,650 in 1950), of whom 132,817 had committed indictable offenses, 584,454 nonindictable offenses and



WILLIE ("THE ACTOR") SUTTON, notorious bank robber and escaped convict, being photographed at a police station in Brooklyn, N.Y., in Feb. 1952 (note the handcuffs dangling from his wrists). The informant responsible for Sutton's arrest was shot and killed on March 8

6,049 offenses against defense regulations, an increase of 16,796 and 19,610 and a decrease of 1,736, respectively, compared with the figures for 1950. Of those found guilty of indictable offenses 117,004 were males (compared with 100,948) and 15,813 females (compared with 15,073), which showed that male offenders had been responsible for nearly the whole of the increase. Among the indictable offenses that contributed to the increase were larceny (increased 19%), breaking and entering (+5%), receiving (+22%) and sexual offenses (+13%), whereas cases of robbery decreased by 23%.

The number of murderers of 116 persons aged one year or over was 104; in 5 other cases the murderers remained undetected. Sixty-three persons were arrested in murder cases involving 65 victims. Nineteen of them were found unfit to plead, 9 found guilty but insane, and 7 acquitted (1 still awaiting trial). Of the 27 who were sentenced to death, 18 were executed, 5 reprieved, 2 certified insane after sentence and removed to Broadmoor institution, 1 conviction was quashed on appeal and 1 case was still awaiting final disposal. The percentage of executions of those sentenced to death rose, therefore, from 48% in 1950 to 66% in 1951. Thirty-nine murderers or suspects committed suicide before arrest. Suicides declined from 4,324 to 4,282 (2,675 males and 1,607 females), attempted suicides from 4,676 to 4,524 (2,255 males and 2,269 females).

The number of persons found guilty of traffic offenses, accounting for 51.7% of all nonindictable offenses, increased from 357,932 to 370,912; the number of those found guilty of drunkenness from 45,533 to 51,239, i.e., by 13%; and prostitution offenses from 6,843 to 7,872, i.e., by 15%. Persons found guilty of cruelty to, or neglect of, children numbered 30 on

indictment (+20%) and 1,046 dealt with summarily (+10%).

The total increase in indictable offenses was from 461,435 to 524,506, mainly accounted for by an increase in simple and minor larcenies and larcenies from unattended vehicles. Robberies went down from 1,021 to 800 cases. The percentage of indictable offenses cleared up by the police remained at 47.

In the metropolitan police district the number of indictable offenses known to the police rose from 100,304 in 1950 to 111,091, *i.e.*, from 11.9 to 13.3 per 1,000 inhabitants, and the number of arrests from 26,862 to 30,068. Robbery was one of the few categories of offenses to show a decline (from 256 to 214 cases, the lowest figure since 1942). Pocket-picking and hand-bag-snatching also declined (from 1,087 to 950) in spite of 98 cases occurring at the Battersea pleasure park gardens and fun fair during the Festival of Britain. The percentage of crimes cleared up declined from 32.4 to 31.5.

In Scotland, the number of persons against whom a crime or an offense was proved was 99,950 in 1951 compared with 96,271 in 1950, an increase of 3.8%. The percentage of male offenders was 91.8, compared with 91.7% in 1950. The number of crimes and offenses known to the police was 184,756, an increase of 6.4% over 1950; 58% of them were committed in the four counties of cities where the number of crimes was 24.8 per 1,000 of the population, compared with 19.2 in the ten large burghs with separate police forces (13.0 in 1950) and 9.4 in the 19 counties or joint police areas. Only 9 cases of murder became known to the police compared with 21 in 1950; of the 7 persons proceeded against, 1 was convicted of murder and executed.

Germany.—For the first time since the end of World War II criminal statistics for the Federal Republic of Germany began to appear. Information was published for the first six months of 1950 for adult offenders and for the whole of 1950 for juvenile delinquents. The number of adults found guilty of offenses against the criminal code was 69,128 in the first quarter and 63,453 in the second quarter of 1950, of whom 40 and 35 respectively were found guilty of murder. The total for juveniles, *i.e.*, persons between 14 and 18, found guilty of offenses against the criminal code was 20,650.

(See also BETTING AND GAMBLING; POLICE; PRISONS.)

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Crude Oil: see PETROLEUM.

Cuba. The republic of Cuba occupies the entire island lying between 20° and 25° N. lat. and 74° and 85° W. long. The main island and numerous small islands under Cuban sovereignty have an aggregate area of 44,217 sq.mi. The pop. (est.) approximated, in June 1952, 5,523,000; Havana, and nearest large suburban cities, had an aggregate population (est.) of nearly 1,000,000. Two other cities were believed to have populations of 100,000 or more—Santiago, with (est.) 170,000, and Camagüey, 100,000.

Presidents: until March 10, 1952, Carlos Prío Socarrás; after March 10, provisionally, Fulgencio Batista.

History.—The 1952 sugar crop, greatest in Cuba's history, exceeded 7,000,000 tons. The U.S. congress extended the Sugar act of 1948 to Dec. 31, 1956, so that the amount of sugar purchased by the U.S. government as a reserve could be increased. Cuba pressed for international consideration of the working draft intended to be substituted for the Sugar agreement of 1937. A meeting of delegates from countries participating in the 1937 conference took place at London Sept. 30–Oct. 1, 1952, with observers from other countries. It was agreed to request all governments represented in the United Nations to aid in bringing about a new negotiating conference in the spring of 1953, to pass on the working draft and policies involved.

On March 10, 1952, a military rising led to the resignation and exile of Pres. Prío Socarrás. Former President Batista assumed power, his provisional regime being recognized promptly by most foreign powers. An election was announced for a late date in 1953. An extensive investigation of public accounts led

GEN. FULGENCIO BATISTA addressing his troops after seizing power in Cuba, March 10, 1952



to a report from the finance ministry (June 6, 1952) involving both previous administrations (Ramón Grau San Martín and Pío Socarrás) in the malversation of public funds in excess of \$96,000,000, largely in the manipulation of retirement "reserves." Unrest in labour circles, particularly in Havana, continued to stimulate efforts to deal with housing problems and mounting price levels. The rapid concentration of population in the metropolitan area of the capital aggravated the strain on transportation facilities. Nationalizing the Havana United railways was delayed, at least, by the change of government.

Diversification of industry and agriculture alike was a particular concern of the Batista administration. A livestock census was decreed, to be taken in 1952, with a view to increasing the production of meat in the republic. Surveys of new mineral and manufacturing possibilities were undertaken. A maritime commission was established with instructions to devise a plan for building a fleet of small-tonnage ships for trade and passenger service. The perennial problem of high transit costs into and out of Havana was tackled. The government approved the outlay of \$2,000,000 on ferry boats to carry tourists from Florida, with their automobiles, from Key West to Havana. The Cuban sugar interests followed with particular concern research undertaken in 1951-52 with a view to developing paper for newsprint and other uses out of sugar cane waste (bagasse). The industrial alcohol and other by-product markets were likewise given more alert attention than heretofore, in consequence of the great surplus of sugar on hand. (C. E. Mc.)

Education.—In the school year 1944-45 there were 498,286 children in attendance at public schools and 72,000 at private schools. There were 21 institutes for advanced education and a normal school and a commercial school in each province. University education was available at the University of Havana, the Oriente university (Santiago de Cuba) and the Catholic University of Villanova (Havana).

Finance.—The monetary unit is the peso, officially pegged at par with the U.S. dollar. The budget for the fiscal year 1952-53, as decreed on June 28, 1952, was balanced at \$234,069,756. On Dec. 31, 1951, the funded national debt amounted to \$217,700,000; estimates of the floating debt ranged as high as \$180,000,000. Currency in circulation (Dec. 31, 1951) totalled \$918,000,000, of which \$569,000,000 was in U.S. dollars; demand deposits \$512,000,000; gold reserves (June 30, 1952) \$318,000,000. The national income in 1951 was estimated at \$1,860,000,000. The retail food price index (Havana) stood at 96 in May 1952 (1948=100).

Trade and Communications.—Exports in 1951 totalled \$766,000,000; imports were \$640,000,000. The International Monetary fund estimated that exports of sugar and fresh fruits were undervalued by \$20,000,000. The chief exports were sugar (82%), molasses (5%) and tobacco and products (5%). Leading customers were the U.S. (54%), the United Kingdom (14%), Japan (5%), the Netherlands (4%) and Germany (3%). Leading suppliers were the U.S. (77%), the United Kingdom (3%) and Germany (2%).

Railways (1949) included 3,017 mi. of main line, 660 mi. of sidings and yards and 7,870 mi. of industrial trackage. Roads (1949) included 1,720 mi. of paved highways and 600 mi. of improved highways. As of Jan. 1, 1952, there were 86,464 passenger cars, 37,215 trucks and 4,930 buses. The merchant marine had 34 steamers and motor ships (100 tons and over) aggregating 36,135 gross tons on June 30, 1949. At the beginning of 1952 two television stations were in operation, both in the Havana area.

Agriculture.—Sugar cane continued to be by far the most important crop. Production of sugar in the 1951-52 season reached the record figure of 7,963,689 short tons (1950-51: 6,348,660 tons) and that of molasses 397,900,000 gal. Production of other crops in 1951-52 included rice (milled) 166,000,000 lb.; corn 398,000,000 lb.; henequen fibre 18,000 short tons; tobacco 39,000 tons; beans 46,000,000 lb.; coffee (1950-51) 547,000 bags of 132 lb. each. In 1950-51 there were an estimated 4,116,000 cattle, 154,000 sheep and (July 1947) 1,700,000 pigs.

Manufactures.—There were in 1952 more than 160 sugar mills scattered throughout the island. Production estimates for 1951 included cement 422,000 short tons; cotton piece goods 36,295,484 sq.yd.; cigarettes 8,372,000,000 units; rayon staple 7,647,054 lb.; tires 110,213 units; inner tubes 51,309 units; and leather footwear 6,300,000 pairs.

Mineral Production.—Production estimates in 1951 (ores, in long tons) included metallurgical manganese 143,039; chemical manganese 8,618; copper concentrate 59,218 (metal content 32%); refractory chromite 77,816; and nickel 14,406 (metal content 1.35%). (J. W. Mw.)

Curaçao: see NETHERLANDS ANTILLES.

Curling. The United States regained honours in the Gordon medal bonspiel, an international competition dating

back to 1884, by defeating Canada March 14-15 at Schenectady, N.Y. The American skips led their men to victory by a score of 287-264 in a meet that found 16 teams representing each country. Another feature of the season was the fifth international gathering at Utica, N.Y., where Canadian rinks won major laurels. The Lachute, Que., rink, with Del McTavish as skip, defeated Kingston, Ont., by 15-14 for the Mitchell medal; Fred Stetson's Peterboro team won the Allen medal, and Fred Rubbra's Caledonia curlers from Montreal took the Country Club cup. A Utica team, led by Bob Davies, captured the Dewar trophy.

The Ardsley, N.Y., No. 2 rink, skipped by A. B. Hastings, won the annual Douglas medal play at Mount Hope, N.Y. Nashua, N.H., skipped by Carl Hines, won both the Gordon Grand National and Emmet medals, and the Mohawk trophy went to Utica in the annual bonspiel at Schenectady.

Winnipeg's Fort Rouge Curling club, represented by Johnny Watson, Andy Williams and Allen Langlois, took the Canadian playdowns with a record of ten victories and no losses and gained the right to represent Manitoba in the Brier Dominion title bonspiel, which it also won. Jimmy Welsh's Deer Lodge club from Winnipeg was the grand aggregate victor in the Manitoba bonspiel.

A squad from the Grand National club and the Midwest Curling association visited Scotland for a series of matches, marking the first time a United States curling team ever had visited Scotland.

Curling made tremendous gains in the United States, especially in the midwest and west. The upswing was noted in the annual bonspiel of the Midwest Curling association as all records were broken when 64 rinks representing 25 affiliated clubs competed on 8 ices at Portage and Madison, Wis. Top honours in the tourney went to the Glen Harris rink of Superior, Wis., which went through six games without a setback. The victors halted Francis Kleffman's Hibbing, Minn., team by 11-2 in the final. The fourth annual bonspiel of the U.S. Women's Curling association at Utica, N.Y., reflected the growing interest among the feminine players, with 30 rinks from the U.S. and Canada competing for honours. The Wauwatosa Granite trophy, major prize at stake, was won by the Toronto team of Mrs. Robt. Amell, Mrs. L. C. Muir, Mrs. D. H. Easton and Mrs. M. A. Moysey. (T. V. H.)

Currency: see COINAGE; EXCHANGE CONTROL AND EXCHANGE RATES. See also under various countries.

Cycling. Steve Hromjak, United States army sergeant from Cleveland, O., pedalled his way to the senior title in the national amateur meet at Highland Park, N.J., Aug. 30-31, 1952. Capturing the one- and two-mile events, Hromjak scored 17 points, 3 more than did Gus Gatto, of San Jose, Calif., the defending champion, whose only first came in the five-mile grind. Dick Stoddard, Denver, Colo., had ten tallies to finish third. Jeanne Robinson, Detroit, Mich., registered victories in two races to gain the women's open title with 19 points as Detroit's Nancy Nieman was runner-up with 14. Gay Juner, Daley City, Calif., placed third. John Chiselko of Somerville, the New Jersey state boys' champion, was victor among the juniors.

Andy Werth, Columbia university student, led the senior men in the eastern states racing at Highland Park, Joe Sloan of Somerville taking the men's junior laurels. Lorraine Engstrom, New Rochelle, N.Y., was queen among the women and Nick Sostilio, New York city, took the juvenile division title. Earlier in the season, Werth triumphed in the eastern states 75-mile title road race. Andy Blackman, New York, won the Long Island Grand Prix handicap of about 63 mi. over highways in September.

ber although John Macheroni, New York city, earned the fast-time trophy, the scratch starter being clocked in 2 hr. 44 min. 34.8 sec. A crowd of more than 18,000 saw Ernie Seubert of Brooklyn, N.Y., lead a field of 79 rivals in the ninth running of the 50-mi. tour of Somerville, N.J. Ronald Rhoads of Oakland, Calif., won the United States board track laurels. (See also OLYMPIC GAMES.) (T. V. H.)

C.Y.O.: see SOCIETIES AND ASSOCIATIONS, U.S.: *Catholic Organizations for Youth.*

Cyprus. An island in the eastern Mediterranean, Cyprus is a British colony. Area: 3,572 sq.mi. Pop.: (1946 census) 450,114; (1951 est.) 492,000. Language: Greek 80.3%, Turkish 17.8%; 10% also speak English. Religion: Greek Orthodox 80.4%, Moslem 17.9%. Chief towns: Nicosia (cap., 36,306); Larnaca (15,364); Limassol (24,462); Famagusta (17,973). Governor in 1952: Sir Andrew Wright.

History.—With increasingly disturbed conditions in the middle east in 1952, the strategic value of Cyprus became much more important than its *enosis* movement for union with Greece. On one occasion *enosis* meetings were prohibited by the governor to prevent disorder. The church continued to lead the agitation but without noticeable success. The people were more interested in taking advantage of the presence on the island of a large garrison and many troops on leave from the middle east, who did much to make up for the falling off in the tourist trade brought about by the same general insecurity. Early in 1952 more than 4,000 Cypriots went as volunteers to work in the canal zone to replace the Egyptian labour force which had deserted, and large quantities of vegetables and other products from the island were sold to the garrison in the zone.

The Dekhelia power station was opened and the new grid system came into operation in September. A large cement factory was in the planning stage, and mineral production showed an increase over the previous year. In September the building was started of a cantonment to house 10,000 servicemen and their families. (K. G. B.)

Education.—Primary schools (1951) 705, attendance 63,000. Other schools: secondary 52, agricultural 2, trade 1, teachers' training colleges 2.

Finance and Trade.—Monetary unit: piastre (180 piales=£1 sterling = \$2.80 U.S.). Budget (1952 est.): revenue £5,855,880; expenditure £5,572,782. Foreign trade (1951): imports £19,250,000; exports £15,000,000. Main products: citrus, seeds, vine products, carob, wool and copper.

Cyrenaica: see LIBYA.

Czechoslovakia. A people's republic of central Europe, Czechoslovakia is bounded west and north-west by Germany, north and northeast by Poland, east by the U.S.S.R., south by Hungary and Austria. Area: 49,330 sq.mi. Pop. (1950 est.): 12,340,000. Language (1948 est.): Czech 77%, Slovak 25%, German 3.5%, Hungarian 3.5%, Polish 1.7%. Religion (1930 census): Roman Catholic 77%, Protestant (all denominations) 7.5%, Czechoslovak Church 5.6%, Greek Catholic 1.6%, Jewish 1.9%, atheist 6%. Chief towns (pop., 1947 census): Prague (cap., 922,284); Brno (273,127); Moravska Ostrava (180,960); Bratislava (172,664); Pilsen (117,814); Olomouc (58,616); Košice (58,089). President of the republic, Klement Gottwald; prime minister in 1952, Antonín Zápotocký.

History.—The main problem in Czechoslovakia during 1952 was labour shortage and resistance by the working class to the general economic policy, designed both to subject the Czechoslovak economy to the soviet economy and to reduce the Czechoslovak standard of living to the soviet level. Official propaganda

unceasingly emphasized the need to work harder and urged the trade unions to remember their duties to the state before all else. Labour shortage was a particularly serious problem. In the first two five-year plan periods in the Soviet Union, at least some of the difficulties were overcome by drafting into industry vast numbers of unskilled labourers from the villages. The surplus of rural labour was to some extent an advantage to the soviet economy at this stage. In Czechoslovakia however there had never been a surplus of rural labour on this scale. The only part of the country where it had existed was the most backward part of Slovakia, whose population was not large. Even in Slovakia the planners had difficulty in 1952. The plan of labour recruitment for heavy industry in Slovakia was achieved in 1951 to the extent of only 66%. In the Czech lands the labour surplus did not exist. The only hope was, therefore, to increase the output per worker for the same wage, that is, to lower his standard of living. Among the forms of resistance which this had encountered was the phenomenon of "flitting," well-known in the Soviet Union during the 1930s. According to the official organ of the trade unions the rate of change of jobs was 1,000,000 workers a year.

The climax of the struggle between government and workers came at the plenary session of the Trade Union Central council of July 17-18. Zápotocký, a trade union veteran himself, told his audience that though the visible enemy, the former bosses, had been crushed, the struggle had by no means been won against the hidden enemy, "the remnants of the capitalist bourgeoisie and their servants, capitalist prejudices and outlived views, which still exist in the ranks of our own working people." Trade unions had neglected socialist competition and other means of extracting higher output from the workers. They had failed to unmask and eliminate malpractices of the managerial staff. The unions ought to maintain closer contact with the ministries, and not let themselves be preoccupied with petty issues. At the same time the premier insisted that the party must not interfere in the management of the unions.

Collectivization of agriculture continued. According to Viliam Siroky, the vice-premier, at the end of August 25% of the arable land in Slovakia was collectivized. In June it was stated that there were 7,669 collective farms in the whole republic, comprising 19% of its arable land. With the land held by state farms, this probably brought the "socialist sector" up to nearly 30%. A government resolution of April 19 provided for stricter discipline on state farms, and stressed the part to be played by the Communist party's political departments attached to the farms. At the beginning of the year there was a serious meat shortage. A government statement of Feb. 19 attributed this partly to insufficient attention to livestock by collective farms and partly to defects in the meat processing industry. In April a trial was held of a group of kulaks, one of whom had been a member of parliament for the Agrarian party before 1938. They were accused of sabotage of government agricultural policy and of conspiring with the International Peasant union in exile.

In August the minister of security, Karel Bacilek, announced the creation of an auxiliary security police force. Its tasks would be to safeguard state property and to unmask saboteurs. Another step was taken toward the Stalinization of justice when Stefan Rais, the minister of justice, announced that a bill would be introduced to remodel the institution of procurator, to make it, as in the Soviet Union, independent of the courts.

On May 30 Jan Sevcik, leader of the rump of the Slovak Rebirth party and a vice-premier in the central government, was purged from government and party, on the ground of "continued violations of the policy of the National front." The same fate overtook the secretary of the same party, Jan Valek.

On Feb. 27 Vaclav Kopecky, minister of information, in a

speech to an ideological conference of scientific workers held in Brno, fiercely attacked the memory of Jan Masaryk and Eduard Beneš. Both men, he declared, had been sworn enemies of the Soviet Union. "Under the spell of the cosmopolitanism of Masaryk and Beneš, the Czechoslovak bourgeoisie had despised its own tradition and culture." However, "the most important sections of the nation had remained loyal to their people's roots, sentiments, manners, national tradition and culture, patriotism and their love for the great fraternal Russian nation, love for the Soviet Union and comrade Stalin." (H. S-W.)

Education.—Schools (1951-52): elementary 12,433, pupils more than 1,000,000; higher grade 2,280, pupils 473,000; secondary 292, pupils 75,000; technical 1,243, pupils 96,000; institutions of higher education 17, students 54,900.

Finance.—Budget (1951 est.) revenue 166,520,000,000 koruny, expenditure 166,100,000,000 koruny; (1952 est.) revenue 324,282,000,000 koruny, expenditure 323,529,000,000 koruny. Monetary unit: koruna, with official exchange rates of 12.50 koruny to the rouble, 140 koruny to the pound and 50 koruny to the U.S. dollar.

Foreign Trade.—(1950): Imports U.S. \$653,000,000, exports U.S. \$800,000,000. Main sources of imports (1950): U.S.S.R. 29.4%; Poland, Rumania, Hungary and Bulgaria 26.0%. Main destinations of exports: U.S.S.R. 28.0%; four other eastern European countries 21.1%.

Transport and Communications.—Roads (1946): 43,969 mi. Licensed motor vehicles (Dec. 1950): cars 165,000; commercial 65,000. Railways (1947): 8,161 mi. Air transport (1949): flights 16,833; miles flown 4,884,000. Telephones (1950): 380,000. Radio receiving set licences (1949): 2,280,000.

Agriculture.—Main crops (metric tons, 1950): wheat 1,540,000; barley 1,062,000; oats 818,000; rye 1,140,000; maize 235,000; potatoes 7,500,000. Sugar, raw value 880,000. Livestock: cattle (1951) 4,100,000; pigs (1951) 3,700,000; sheep (1950) 480,000; horses (1950) 640,000. Food production (metric tons, 1949): milk 2,618,000; butter 30,000; factory cheese 13,900; meat 290,000 of which beef 104,000.

Industry.—Persons employed in manufacturing industries (Nov. 1949): 1,477,700. Fuel and power (1950): coal 18,500,000 metric tons; lignite 27,500,000 metric tons; crude oil 275,000 metric tons; electricity 9,120,000,000 kw.hr. Raw materials (metric tons, 1950): pig iron, 1,800,000; steel ingots and castings 2,900,000. Manufactured goods (metric tons, 1949): cement 1,740,000; sheet glass 135,500; cotton yarn 75,800; wool yarn 35,400; rayon filament yarn 5,500; rayon staple fibre 20,500. Production of motor vehicles (1949): 29,500.

Dahomey: see FRENCH UNION; FRENCH WEST AFRICA.

Dairy Industry, Bureau of: see AGRICULTURAL RESEARCH ADMINISTRATION.

Dairy Products. Total U.S. milk production for 1952 was estimated at 114,800,000,000 lb., only 99% as much as in 1951 and even more of a deficit compared with the recommended goal of 120,000,000,000 lb., but nevertheless 108% of pre-World War II production.

Exports of dairy products in 1952 dropped to the lowest level since 1940. Imports were up to the highest level since 1937. Embargo on imports of butter, butter oil and nonfat dry milk was discontinued and import quotas were in effect on American cheese, several foreign cheeses and casein. Curbs on some foreign cheese were eased in September.

Though butterfat was officially supported at 69.2 cents per pound and manufacturing milk at \$3.85 per hundredweight, both higher than in 1951, it did not appear that either would be much used, if at all. Fresh milk used as fluid milk and cream was in demand at higher prices. More than half (51.6%), or 57,064,000,000 lb. of the total production, was so used. This amounted to about 400 lb. per person, against 395 lb. in 1951. Retail fresh milk, delivered, averaged about 24 cents per quart, compared with 23 cents in 1951. Prices were expected to be slightly higher in 1953.

Of the 110,600,000,000 lb. of milk utilized (other than as feed for calves), 27,738,000,000 lb. were utilized for butter, whereas 29,270,000,000 lb. were so utilized in 1951 and 44,930,000,000 lb. as recently as 1940. This gave an estimated 1952 production of 1,380,000,000 lb. of farm and factory butter, 95% as much as in 1951 and 64% of the prewar average. Civilian consumption per capita in the U.S. was estimated at 8.7 lb. (9.6 lb. in 1951), as against 7.7 lb. of margarine. Average retail

Milk Production in Principal Producing Countries

Country	In millions of pounds)		Average 1934-38
	1951	1950	
United States	116,591	117,602	105,416
France	36,350	34,080	33,000
Western Germany	33,444	30,556	18,424
United Kingdom	22,074	23,062	15,789
Canada	16,392	16,449	11,180
Netherlands	12,499	12,723	11,684
Denmark	11,541	11,931	11,780
Australia	11,357	12,848	10,176
New Zealand	11,025	10,416	10,233
Sweden	10,525	10,789	

butter prices in 1952 were estimated at 85 cents per pound, compared with 30.3 cents for margarine. Exports were smaller than the 21,900,000 lb. of 1951.

Cheese production, 1,135,000,000 lb. in 1952, required approximately 11,341,000,000 lb. of milk, or 10.3% of the total. Consumption was about 7.5 lb. per person, mostly cheddar cheese, with Wisconsin the leading producer. Prices, which averaged about 60 cents per pound, were slightly higher than a year before and above government supports. Stocks, of about 250,000,000 lb., were below the previous year. Exports were 81,000,000 lb. in 1951-52, compared with only 54,600,000 lb. in the previous year, but annual amounts as large as 308,000,000 lb. during the war period. Imports, about which there was much legislative discussion, amounted to 52,300,000 lb., compared with 56,200,000 lb. in the previous year.

Condensed and evaporated milk required 5.9% of the 1952 production, or 6,505,000,000 lb., the smallest amount in recent years and 92% of the 1951 utilization, but 34% above prewar. Stocks too were lower, and exports, very sharply reduced compared with the peak years since the war, were 28,900,000 lb. of condensed and 203,400,000 lb. of evaporated milk. Dried skim milk totalled about 785,000,000 lb., compared with 702,000,000 lb. in 1951. Consumption of 4.2 lb. per person equalled the record level of 1951. Exports, large in recent years, declined to 224,100,000 lb. in 1951-52, compared with 331,100,000 lb. in the previous year.

Ice cream used 7,230,000,000 lb., about 6.5% of all milk, or the fat from it. The product amounted to about 16.4 lb. per person, compared with 16.1 lb. in 1951, and sold at slightly higher prices than in 1951. A frozen dessert, looking and tasting much like ice cream but substituting lower priced vegetable oil for some or all the butterfat and selling at one-third to one-half the ice cream price, became a serious competitor in 1951 in Texas, Illinois, Missouri and Oklahoma.

Milk production in most of the major producing countries reached its postwar peak in 1950; though 8% above prewar in 1951 there was, nevertheless, a decline of 1% compared with the previous year. Stability, even slight declines, ruled in 1952 though some areas, particularly southern hemisphere areas hard hit by drought in 1951, increased. Consumption in 1950 per person was still 5% below prewar, but showed increased emphasis on use of fluid milk.

World total butter production, including ghee, was estimated at 8,200,000,000 lb. in 1951, compared with 8,300,000,000 lb. in 1951 and 9,600,000,000 lb. prewar. World exports of butter in 1951 amounted to about 940,000,000 lb., 10% less than in 1950 and 18% below prewar.

Trade in cheese in 1951 was 775,000,000 lb., slightly below 1950 but an increase of 30% over the prewar level. Trade declined further in 1952, the first half of the year showing a drop by 14% of imports into the United Kingdom, mostly because of smaller shipments by the U.S. and New Zealand. The ration in the U.K. was reduced from 1½ oz. per person per week to 1 oz. and the price increased.

(J. K. R.)

Dakar: see FRENCH WEST AFRICA.

Chief Dams Completed or Under Construction During 1952

Name of Dam	River	Place	Type	Maximum Height, Ft.	Crest Length, Ft.	Volume (Cu. yd.)	Purpose*	Built by	Progress†
Varo Obregón (Oviachic)	Yaqui	Sonora, Mexico	Earth fill	187	—	11,143,300	I	Secretaría de Recursos Hidráulicos	U
Shoals	White	Arkansas, U.S.	Concrete gravity	283	2,256	2,100,000	F,P	U.S. army engineers	C
Chastang	Dordogne	France	Concrete arch	280	1,150	332,000	P	Electricité de France	C
Chief Joseph	Columbia	Washington, U.S.	Concrete gravity	220	1,500	960,000	F,N,P	U.S. army engineers	U
Fort Randall	Missouri	South Dakota, U.S.	Earth fill	160	10,000	30,000,000	F,N,P,W	U.S. army engineers	U
Gal Oya	Gal Oya	Ceylon	Earth fill	154	4,000	6,000,000	I,P	—	U
Garrison	Missouri	North Dakota, U.S.	Earth fill	210	12,000	68,511,000	I,F,N,P	U.S. army engineers	U
Marlan County	Republican	Nebraska, U.S.	Earth fill	107	11,828	13,400,000	F,I,N	U.S. army engineers	U
Longfellow	Flathead, S. Fork	Montana, U.S.	Concrete arch gravity	564	2,115	3,331,000	I,F,P	U.S. bureau of reclamation	C
McNary	Columbia	Oregon-Washington, U.S.	Concrete gravity	—	—	1,850,000	F,N,P	U.S. army engineers	U
Erriman	Rondout	New York, U.S.	Earth fill	200	2,500	6,600,000	W	N.Y. board of water supply	U
Mullardoch	Loch Mullardoch	Scotland	Concrete gravity	160	2,385	310,000	P	North of Scotland Hydroelectric board	U
Oahe	Missouri	South Dakota, U.S.	Earth fill	230	9,300	78,000,000	F,I,N,P	U.S. army engineers	U
St. Mary	St. Mary	Alberta, Canada	Earth fill	191	2,536	4,500,000	I	Prairie Farm Rehabilitation administration	U
Al Gallina	Piave	Italy	Concrete arch	305	—	128,000	P	Società Adriatica di Elettricità	C

*F—Flood Control, I—Irrigation, N—Navigation, P—Power, W—Water Supply. †C—Completed in 1952, U—Under Construction.

Dams. Governments throughout the world continued their efforts during 1952 to develop their water resources through the construction of dams, although in some countries expansion of such efforts was reduced by increased military expenditures.

The accompanying table lists 15 of the important dams of the world under construction during 1952.

In the United States the federal government projects in the Columbia river basin were pushed to develop more power in the northwest. For the first time in more than 20 years, construction of dams by privately owned public utilities reached significant proportions in 1952, particularly in the northwest. The 323-ft.-high, 4,000,000 cu.yd. earth fill for the Yale dam on the Lewis river in Washington was completed. The 3,222-ft.-long earth fill for the C. J. Strike dam on the Snake river in Idaho was also completed. Also in Idaho, the 200-ft.-high arch dam on the Clark Fork river was under construction.

On the Missouri river, a thaw in early April sent melting snow surging down upon construction work at the federal government's tremendous multipurpose dams, Garrison, Fort Randall and Oahe, to slow down construction and flood the valley downstream. At Garrison, although one cofferdam was overtopped, construction work passed the halfway mark during 1952. Following the flood, closure of Fort Randall dam was carried out by the unique method of placing a chalk-fill diversion dam across the river, using a hydraulic dredge. The fill rose above the water surface on July 20, diverting the river through the twelve 22-ft.-diameter tunnels. Pieces of chalk as large as 18 in. in size were

pumped by the 30-in. dredge "Western Chief," and nearly one-third of the chalk was larger than 6 in. in size.

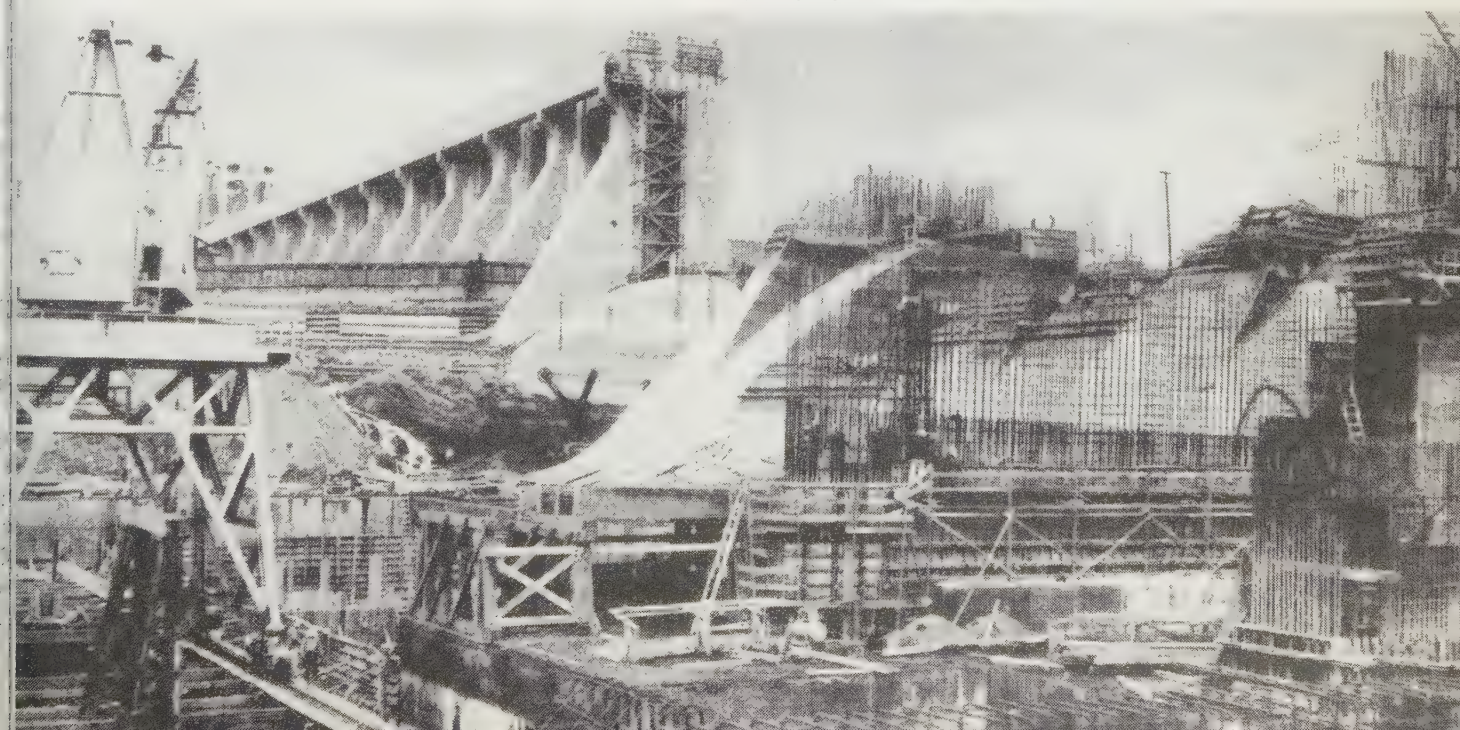
In Europe, Electricité de France, the nationalized power industry of France, continued work in 1952 on large dams such as Chastang on the Dordogne river, Châtelot on the Doubs river on the border with Switzerland, and Tignes on the Isère river. The latter was the highest arch dam under construction in Europe and would be 592 ft. high and 1,400 ft. long, containing more than 900,000 cu.yd. of concrete.

At Owen Falls on the headwaters of the White Nile river in Africa, two miles downstream from Lake Victoria, construction was underway by the Uganda Electricity board on a gravity dam 85 ft. high and 2,725 ft. long to generate power and provide storage for power and irrigation. The level of Lake Victoria would be raised three feet.

The tremendous irrigation and hydroelectric dams under construction in India made progress in 1952, although hampered by lack of large construction equipment. Bhakra dam, on the Sutlej river, under construction in 1952, was India's largest, and would be 680 ft. high. Nangal dam, downstream, a 95-ft.-high, 1,029-ft.-long concrete masonry structure, was 50% complete in 1952.

Construction of Eildon dam on the Goulburn river in Australia was slowed down during 1952 by curtailment of funds. The dam, a 260-ft.-high earth fill to contain 13,000,000 cu.yd., was to replace the existing Eildon weir, increasing the existing 300,000

McNARY DAM at Walla Walla, Wash., as it looked in the spring of 1952 with 13 spillway bays completed (background) and 8 bays still to be built



ac.ft. of storage by more than 2,000,000 ac.ft. for irrigation and power.

In Japan, construction was under way in 1952 on the 290-ft.-high, 800-ft.-long Maruyama dam on the Kiso river. Largest hydroelectric plant in Japan, it would have more than 100,000 kw. installed capacity.

(See also AQUEDUCTS; IRRIGATION.)

(B. O. M.)

Dance. **Ballet.**—The equality of ballet with opera and symphony was recognized in the important European music festivals. General appreciation of ballet increased. Many commendable new works were produced in 1952, but none achieved overwhelming significance.

United States.—The New York City Ballet toured Europe, appearing at Covent Garden, London, at the Paris, Berlin, Florence, Edinburgh and Holland festivals, and in Belgium, Switzerland and Spain. Lew Christensen replaced Lincoln Kirstein as administrative director, Kirstein becoming general manager of the entire City Center of Music and Drama. The company produced *Bayou*, with music by Virgil Thomson, and *Caracole*, music by Wolfgang Amadeus Mozart, both choreographed by George Balanchine; *Ballade*, choreography by Jerome Robbins, music by Claude Debussy; *La Gloire*, choreography by Antony Tudor, music by Ludwig van Beethoven; and *Picnic at Tintagel*, choreography by Frederick Ashton, music by Arnold Bax. Principal dancers were Maria Tallchief, Nora Kaye, Janet Reed, Tanaquil LeClerq, Melissa Hayden, Patricia Wilde, Diana Adams, André Eglevsky, Herbert Bliss, Todd Bolender, Nicolas Magallanes, Hugh Laing and Francisco Moncion.

Ballet Theatre toured the United States. At the Metropolitan Opera house, New York city, it produced *The Harvest Accompanying*, with choreography by Agnes de Mille, music by Thomson, and *Triptych*, choreography by Edward Caton, music by Johannes Brahms. *Graduation Ball* was revived. Alicia Alonso, Igor Youskevitch, Mary Ellen Moylan and John Kriza headed the company, with Alicia Markova, Tatiana Riabouchinska and David Lichine as guest artists.

The Sadler's Wells Theatre Ballet made its New York city debut, presenting ballets choreographed by Ashton, Ninette de Valois, John Cranko, Celia Franca and Andrée Howard. Leading dancers were Elaine Fife, Svetlana Beriosova, David Blair, Patricia Miller, Maryon Lane, David Poole, Donald Britton and Pirmin Trecu.

Alexandra Danilova and Frederic Franklin resigned from the Ballet Russe de Monte Carlo, which toured the United States and South America with Nina Novak, Leon Danielian, Gertrude Tyven and Yvonne Chouteau as stars. The Ballet Russe de Monte Carlo Concert company was organized to tour smaller communities.

The Mia Slavenska-Frederic Franklin Ballet was organized, and toured the United States and Canada with Danilova as guest artist. The company produced *A Streetcar Named Desire*, with choreography by Valerie Bettis, music by Alex North, and *Mille Fifi*, choreography by Zachary Solov, music by Theodore LaJarte.

The Jacob's Pillow Dance Festival company, directed by Ted Shawn, with La Meri, Myra Kinch, Tatiana Grantzeva, Ralph MacWilliams, Nicholas Polajenko, and Richard Stuart and Vanya, toured extensively and danced at Jacob's Pillow, where other festival artists included Peter di Falco, Carol Frishman, Nina Fonaroff, Josefina Garcia, Juana, Albia Kavan, Iva Kitchell, José Limón, Katherine Litz, Anthony Mordente, Lillian Moore and Ruth St. Denis. Choreographers' Workshop presented ballets choreographed by Robert Joffrey, Bill Hooks and Duncan Noble.

The fifth American Dance festival was held at New London,

Conn. New works included *The Queen's Epicedium*, with music by Henry Purcell, and *The Visitation*, music by Arnold Schönberg, both choreographed by Limón; *Snow Queen*, choreographed by Sophie Maslow, with music by Sergei Prokofiev; *Family Portrait*, choreographed by Jane Dudley to music by Meyer Kupferman; an abstract work by Doris Humphrey to music by Mozart; and solos by Ronne Aul.

The Dancers of Bali made their American debut. In New York city, Martha Graham choreographed *Canticle for Innocent Comedians*, with music by Theodore Ribbink. Merce Cunningham, Angna Enters, Jean Erdman, Nina Fonaroff, Emil Frankel, Erick Hawkins, Letitia Jay, Pearl Lang, May O'Donnell, Pearl Primus, Mark Ryder and Uday Shankar appeared in concerts. Choreographers' Workshop and Theatre Dance, Inc., produced experimental works, and the Dance Film society presented *Fifty Years of the Dance on Film*.

Zachary Solov began his second season as director of the Metropolitan Opera ballet. John Butler was appointed choreographer of the New York City Opera, where Charles Weidman was re-engaged. Robert Alton received the Antoinette Perry award for Broadway choreography. Florence Rogge resigned as choreographer of Radio City Music hall and was replaced by Margaret Sande. The American Fashion Critics award went to Ben Sommers for adaptation of ballet slippers for offstage wear.

In Chicago, the Stone-Camryn Ballet produced *Foo-Foo Rara*, choreographed by Bentley Stone, music by Johann Strauss. The Ballet Guild produced *The Theme*, with choreography by Charles Bockman, and revived works by Stone, Ruth Page and Walter Camryn. Loretto Rozak and Gary Roberts presented new ballets. Janet Collins, Harriette Ann Gray, Eve Gentry, Iva Kitchell, José Limón, Lillian Moore and Marina Svetlova toured extensively. The 1952 grant of the dance section of the University of International Education (Rockefeller and Ford foundations) was awarded to Haruhi Yokoyama of Japan.

For the first time, a dance script (Hanya Holm's *Kiss Me Kate*, in Laban notation) was accepted by the register of copyrights of the Library of Congress.

England.—Margot Fonteyn returned to the stage after six months' absence. At Covent Garden, London, the Sadler's Wells Ballet, directed by Ninette de Valois, produced *Sylvia*, with choreography by Ashton, music by Leo Delibes and Fonteyn in the title role. Other new ballets were *Bonne-Bouche*, choreography by Cranko, music by Arthur Oldham, and *A Mirror for Witches*, choreography by Howard, music by Dennis ApIvor. *The Three-Cornered Hat* and *Scènes de Ballet* were revived. Beriosova, transferred from the Sadler's Wells Theatre Ballet, made her Covent Garden debut. Other leading dancers included Beryl Grey, Violetta Elvin, Nadia Nerina, Michael Somes and Alexander Grant. Fonteyn received the honorary degree of Doctor of Letters from Leeds university.

The Festival Ballet, directed by Anton Dolin, appeared in London, Monte Carlo and Italy. Leading dancers were Dolin, Nathalie Leslie-Krassovska, Sonia Arova, Belinda Wright, John Gilpin and Oleg Briansky, with Colette Marchand, Yvette Chauviré and Tamara Toumanova as guest artists. The company produced *Concerto Grosso*, with choreography by Lichine, music by Antonio Vivaldi; *Vision of Marguerite*, choreography by Ashton, music by Franz Liszt; *Symphony for Fun*, choreography by Michael Charnley, music by Don Gillis, and other ballets.

The original Ballet Russe produced *Femmes d'Alger*, with choreography by Vladimir Dokoudovsky, music by Joseph Horowitz, before disbanding in January.

Peggy van Praagh was appointed assistant director of Sadler's Wells Theatre Ballet. At the Edinburgh festival, this company produced *Reflection*, with choreography by Cranko, music by John Gardner. *Île des Sirènes*, choreographed by Alfred Rodri

gues, was added to the repertoire, and *Fête Étrange* was revived.

International Ballet, headed by Mona Inglesby, toured England and danced in Verona, It. Ballet Workshop, London, produced new ballets choreographed by Cecil Bates, Jack Carter, Michael Charnley, Peter Darrell, Michael Holmes, Bert Stimmel and others.

The Dancers of Bali, Katherine Dunham, Carmen Amaya, Hima Kesarcodi, Marcel Marceau and the Yugoslav State company appeared in London, while the Continental Ballet, Ram Gopal Indian Ballet and Ballet Rambert toured England. A season of ballets choreographed entirely by Cranko was presented at Henley-on-Thames.

France.—The Paris Opera Ballet produced *Les Indes Galantes*, with music by Jean Philippe Rameau and choreography by Serge Lifar, Harald Lander and Albert Aveline. *Fourberies* was choreographed by Lifar, with music by Gioacchino Rossini, arranged by Tony Aubin. *Les Caprices de Cupidon* had choreography by Lander after Vincenzo Galleotti, and music by Jens Lolle. *Les Deux Pigeons* was revived. Principal dancers were Lifar, Liane Daydé, Lycette Darsonval, Nina Vyroubova, Alexandre Kalioujny and Michel Renault. Toumanova danced *Phedre*, *Giselle* and *Swan Lake*.

Ballets Janine Charrat presented several new works, all choreographed by Charrat: *Le Massacre des Amazones*, *Rumba Classique* and *Danseuse de Degas*, all with music by Ivan Semennoff, *Concerto*, music by Edvard Grieg, *Étrangère à Paris*, music by Jean Wiener, and *Le Rêve*, music by Liszt. This company, headed by Charrat, Ethery Pagava, René Bon and Claire Sombert, with Milorad Miskovitch as guest artist, toured France, Italy, Switzerland, Spain and North Africa.

The Marquis de Cuevas' Grand Ballet toured Europe and appeared at the Edinburgh festival and in Brazil. Headed by Rosella Hightower, Jacqueline Moreau, George Skibine, George Zoritch and Wladimir Skouratoff, the company produced *Cordelia*, with choreography by John Taras, music by Henri Sauguet; *Coup de Feu*, with choreography by Aurel Milloss and music by Georges Auric; and *Ines de Castro*, with choreography by Ana Ricarda and music by Joaquin Serra.

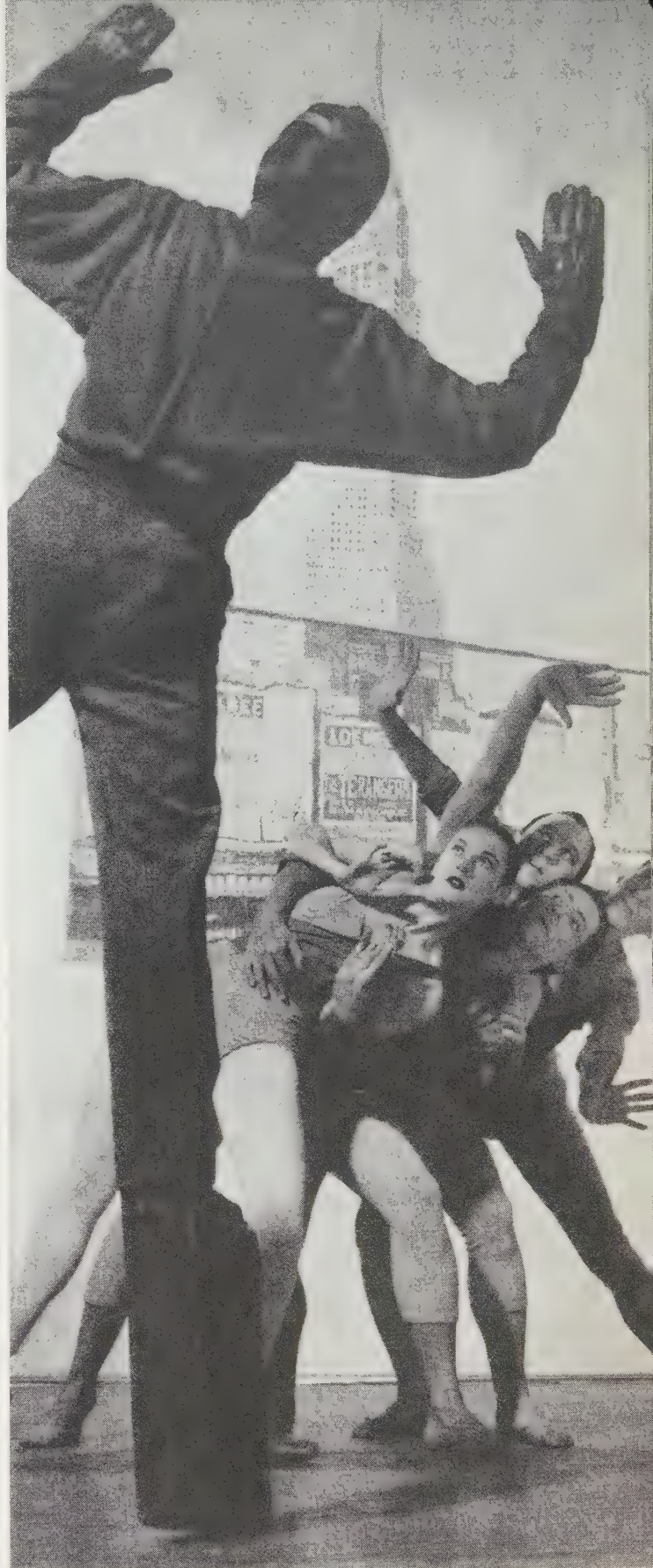
The Paris Opéra Comique revived *Capriccio Espagnol*. In the autumn the ballet group was dissolved, a few dancers being retained to appear in the operas.

Ballets de Marigny, headed by Yvette Chauviré, Irene Skorik, Milorad Miskovitch and Youly Algaroff, presented several ballets choreographed by Chauviré. Paul Draper and Rosario and Antonio danced in Paris. Xenia Palley received the Prix René Blum, awarded to the most promising young French dancer. The collections of the Archives Internationales de la Danse, which was dissolved, were transferred to the Paris Opera library.

Australia.—The Australian National Ballet was reorganized. Joyce Graeme and Rex Reid resigned and returned to England. Walter Gore and Paula Hinton replaced them, but later resigned. Leading dancers were Henry Danton, Arvid Fiebig, Aine Reega, Hinton and Gore. Danton produced *Pas de Quatre*, Kira Bousloff revived Lichine's *Protée*, Gore choreographed *Antonia* and *Theme and Variations* and revived *Giselle*. The company toured New Zealand.

The Kousnetzova Ballet company produced *Coppélia*, *Prince Igor* and other works. The Borovansky Ballet presented *The Sleeping Princess*, choreographed by Milo Zloch. Ballet Guild presented *The Sentimental Bloke* and *Sonata*, both choreographed by Laurel Martyn.

Austria.—The Vienna Opera Ballet produced three ballets. all choreographed by Erika Hanka: *Sylvia* (excerpts), music by Delibes, *Rondo of the Golden Calf*, music by Gottfried von Einem, and *Scheherazade*, music by Nicholas Rimsky-Korsakov. The ballet toured western Germany.



"AGE OF ANXIETY," a satiric ballet, being performed by members of the New York City Ballet in Paris, representing the U.S. in the 1952 International Exposition of the Arts

Canada.—The Winnipeg Ballet toured western Canada and presented new works by Joy Camden and Gweneth Lloyd. Participating in the annual Canadian Ballet festival, at Toronto, Ont., were the Ottawa Classical Ballet, the Elizabeth Leese

Ballet, the Gotshalks Halifax Ballet, Kay Armstrong's Ballet Concert, Toronto Ballet, Winnipeg Ballet and others.

Denmark.—The Royal Danish Ballet revived Auguste Bouronville's *Fair in Bruges*, and presented Lichine's *Graduation Ball*, Taras' *Designs with Strings* (renamed *Variationer*) and Balanchine's *Symphony in C*. The company was headed by Margarethe Schanne, Boerge Ralov, Inge Sand, Mona Vangsaa, Stanley Williams, Fredbojern Bjoernsson and Frank Schaufuss, with Niels Bjoern Larsen and Hans Brenaa as ballet masters. Fifield, Poole, Riabouchinska and Lichine appeared as guest artists.

Germany.—Ballets Jooss (Essen) produced *The Misty Way*, with choreography by Kurt Jooss, music by Aleida Montijn, and *Dithyrambus*, originally choreographed by Jooss in Chile. *Le Bosquet* and *Ball in Old Vienna* were revived, and the company toured Belgium and Switzerland.

The Berlin State Opera Ballet presented *Apollon Musagètes*, music by Igor Stravinsky, and *The Idiot*, music by Hans Werner Henze, both choreographed by Tatiana Gsovsky. The New York City Ballet, Sadler's Wells Ballet, Ram Gopal and Harald Kreutzberg appeared at the Berlin festival.

The Hamburg Opera Ballet produced *Hamlet*, with music by Boris Blacher, and *Rondo of the Golden Calf*, music by Einem, both choreographed by Helga Swedlund. For the Hanover Opera Ballet, Otto Kruger choreographed *The White Rose*, and José Undaeta choreographed *The Three-Cornered Hat*.

Greece.—Two new ballets, *Heliogenniti* and *Le Sorcier Musicien*, were presented by the company of Polyxeni Matey-Rossopoula. Choreographers were Yvonne de Kyriko and Robert Saragas.

Italy.—The La Scala Ballet, Milan, presented Balanchine's *Ballet Imperial* and produced *Reflections*, choreographed by Milloss to music by Ottorino Respighi. Ethery Pagava appeared in *Coppélia*, choreographed by Milloss. Toumanova was guest artist during the Como festival, where the repertoire included *Giselle*, *Les Sylphides*, *Daphnis and Chloe*, *The Three-Cornered Hat* and *Gaité Parisienne*.

The Rome Opera produced *Giselle*, choreographed by Boris Romanoff, with Daydé as guest artist.

Leonide Massine produced a pageant, *Laudi Evangelici*, in Perugia, and staged Rossini's *Armida* for the Florence festival.

Netherlands.—In Amsterdam, the youth ballet Scapino presented *The Tiger-Princess*, with choreography by Hans Snoek and music by Gabriel Grovlez, and *The Snowman*, choreography by Albert Mol, music by Cobie Langkester. The New York City Ballet danced at the Holland festival.

South Africa.—Nadia Nerina and Alexis Rassine, of Sadler's Wells Ballet, toured South Africa, presenting excerpts from classical ballets.

South America.—Michael Borovsky, ballet director of the Teatro Colon, Buenos Aires, Arg., choreographed *Estancia*, with music by Alberto Ginastera, and revived *The Sorcerer's Apprentice*. Alicia Markova and Roman Jasinsky appeared as guest artists in classical repertoire.

At La Plata, Arg., Nina Verchinina choreographed *Salome*, with music from Richard Strauss's opera.

In Rio de Janeiro, Braz., Vaslav Velteck choreographed *Sinho do Bonfim*, with music by Camargo Guarnieri, and *Papagaio do Moleque*, with music by Heitor Villa-Lobos. Tatiana Leskova choreographed *Salamanca do Jarau*, with music by Luiz Cosmé, and *Aurora's Wedding*, *Prince Igor* and *Les Sylphides* were revived.

In Santiago, Chile, the Sulima Classical Ballet produced *The Fountain of Bakhchisarai*, with choreography by Vadim Sulima and music by Boris Asafiev. The University of Chile Ballet, directed by Ernst Uthoff, produced his version of Stravinsky's

Petrouchka, as well as *Redes*, with choreography by Octavio Cintolesi, music by Domenico Scarlatti, and *Orpheus*, choreography by Heinz Pols, music by Stravinsky. The repertoire also included works by Kurt Jooss.

In Montevideo, Urug., Tamara Grigorieva produced *Prince Igor*, with choreography after Michael Fokine.

Sweden.—Marianna Orlando was named premiere danseuse of the Royal Opera, Stockholm, where other leading dancers were Elsa-Marianne von Rosen, Ellen Rasch, Gunnel Lindgren and Bjoern Holmgren. Serge Lifar and Nina Vyroubova appeared as guest artists in *Giselle*.

Switzerland.—At the Municipal theatre, St. Gall, Mara Jovanovits choreographed *Phoebidas und die Nymphe*, with music by Max Lang.

The Rome Opera Ballet, headed by Attilia Radice, the La Scala Ballet, the New York City Ballet and the Paris Opera Ballet visited Switzerland. For the "Semaine de la Rose," at Geneva, Harald Lander choreographed *Printemps*, with music by Grieg, and Lycette Darsonal choreographed *Reverie et Passion*, music by Hector Berlioz.

Turkey.—The Turkish National Ballet school, directed by Beatrice Appleyard, produced *Hansel and Gretel*, with music by Bulent Arel, and excerpts from *Les Sylphides*, *Swan Lake* and *Coppélia*. (LN. M.)

Ballroom Dancing.—During 1952, square dancing had a new upswing in popularity. In England this was undoubtedly the result of the interest shown by Queen Elizabeth II and Prince Philip after their visit to Ottawa, Ont., in Oct. 1951. By 1952 the British Broadcasting corporation was broadcasting square dance music, and the square dance figures were being shown and taught on television. In the United States, square dancing maintained and even increased its established popularity.

The tango continued its steady rise in popularity. Many of the old musical favourites were rerecorded and reached Hit Parade listing. The most notable tango tune revival was "Kiss of Fire," which, with new lyrics, was heard repeatedly on radio and television.

Rumba was represented everywhere in its syncopated version, known as mambo. The popular rumba tunes of 1952 were all of mambo tempo and style. Thus, rumba dancers continued to adapt syncopated jitterbug or swing step patterns to fit the mambo music.

Fox trot and waltz showed little change during the year. There were no outstanding new samba musical compositions, but the dance held its popularity with the public. This was partly because of the infectious gaiety of the music and partly because it was the easiest of all the Latin dances to learn. (A. MU.)

Dates: see FRUIT.

Daughters of the American Revolution, National Society of: see SOCIETIES AND ASSOCIATIONS, U.S.

DDT: see AGRICULTURAL RESEARCH ADMINISTRATION.

Deafness: see HEARING.

Deaths (of prominent persons in 1952): see OBITUARIES.

Death Statistics. For the first seven months of 1952, the number of deaths in the United States was estimated at 890,000, with a corresponding annual death rate of 9.9 per 1,000 population, the same as the rate for the like period of 1951. Since mortality is generally higher during the first half of the calendar year, which contains the heavy winter months, than in the second half, the complete annual records would be better than indicated by the figures just cited. Thus, for the whole of 1951, the United States had a death rate of 9.7 per 1,000 population, the total number of deaths being 1,486,000. This may be compared with a death

rate of 10.5 per 1,000 in 1941 and 11.1 in 1931.

Canada experienced an appreciable reduction in mortality in 1952 from the year before according to provisional data covering the first six months of both years, the decrease in deaths amounting to 5.4%. Canada reported 126,500 deaths for the entire year 1951, the death rate being 9.1 per 1,000 population. Even better than the record for Canada was that for England and Wales, where the urban communities had 17.4% fewer deaths in the first eight months of 1952 than in the like period of 1951. Total deaths for the whole of England and Wales in 1951 came to 548,918, with a death rate of 12.5 per 1,000 population. In the same year, the death rates per 1,000 in other English-speaking countries were: Scotland, 12.9; Northern Ireland, 12.9; Europeans in the Union of South Africa, 9.2; Australia, 9.7; Europeans in New Zealand, 9.6. These and other international comparisons of crude death rates are obscured by differences in the age and sex composition of their populations. A clearer picture would be obtained from a comparison of death rates for specific ages, treating each sex separately.

The death rate for the total world had been estimated to lie between 22 and 25 per 1,000 population in 1946-48 (United Nations, *Population Bulletin*, no. 1, Dec. 1951, p. 3). Within Asia (excluding Asiatic U.S.S.R.), the rate was 15 per 1,000 in Japan, between 25 and 30 per 1,000 in south-central Asia and between 30 and 35 per 1,000 in the rest of the continent. Africa had a rate that fell within a range of 25 to 30 per 1,000. In America north of the Rio Grande, the death rate was 10 per 1,000, while the countries to the south averaged 17 per 1,000. A death rate of 12 per 1,000 was reported for Oceania, north-west-central Europe and southern Europe.

Eastern Europe and Asiatic U.S.S.R. had a death rate of 18 per 1,000.

The available death rates per 1,000 population for European countries in 1951 were: the Netherlands, 7.6; Norway, 8.3; Denmark, 8.8; Sweden, 9.9; Finland, 10.0; Italy, 10.3; Switzerland, 10.5; Federal Republic of Germany, 10.6; Spain, 11.6; Portugal, 12.3; Belgium, 12.6; Austria, 12.8; and France, 13.2.

According to provisional data for the United States in 1951, the death rates per 100,000 from the leading causes of death were: diseases of the cardiovascular-renal system, 513.7; malignant neoplasms (principally cancer), 142.1; pneumonia and influenza, 31.7; tuberculosis, 19.6; diabetes mellitus, 16.5; congenital malformations, 12.2; motor vehicle accidents, 22.5; all other accidents, 38.7; and suicide, 10.4. The mortality records for the first seven months of 1952 among industrial policy holders of the Metropolitan Life Insurance company compared with the like period of 1951 showed sizable reductions in death rates for tuberculosis, diabetes mellitus and pneumonia and influenza. There were rather small reductions in death rates for diseases of the cardiovascular-renal system, suicide and accidents other than motor vehicle, which showed a rise. Cancer mortality remained practically unchanged.

The death rates per 1,000 according to age in the United States in 1951, on the basis of a 10% sample of death certificates, were: under 1 year, 31.6; ages 1-14 years, 0.8; ages 15-24 years, 1.2; ages 25-34 years, 1.8; ages 35-44 years, 3.7; ages 45-54 years, 8.4; ages 55-64 years, 18.5; ages 65-74 years, 43.5; ages 75-84 years, 94.9; and ages 85 and over, 239.5. White persons of all ages had a death rate of 9.5 per 1,000 population, compared with a rate of 10.9 for nonwhite persons. As to sex, the rate for males was 11.2 per 1,000, but that for females only 8.2 per 1,000.

A survey of reductions in mortality among the aged in the United States from 1930 to 1948 showed some very remarkable decreases (*Statistical Bulletin* of the Metropolitan Life Insurance company, July 1952). Thus, at ages 65-74 years, the death



DEATH MARCH in Munich, Ger., to protest the rising death toll from traffic accidents. Each hooded marcher behind "death on horseback" represented a person killed in Munich traffic that year

rate from pneumonia and influenza fell by 60% among white males and 73% among white females; at ages 75-84 years, the respective decreases were 51% and 64%. In the case of the cardiovascular-renal diseases, the death rate for white males at ages 65-74 years remained practically level from 1930 to 1948, but white males at ages 75-84 years and white females at ages 65-84 years experienced considerable reductions. The cancer death rate rose rather sharply among white males at ages 65-84 years; among white females there was some improvement at ages 65-74 years, but little change at ages 75-84 years. The accident fatality rate was generally down among both sexes at ages 65-84 years.

A comparison of cancer mortality according to sex among white persons carrying industrial insurance in the Metropolitan Life Insurance company showed the ratio of male to female death rates to be 1.27 at ages under 75 (*Statistical Bulletin*, June 1952). This ratio was as high as 1.42 at ages 55-64 years

and 1.48 at ages 65-74, but only .96 at ages 45-54 years. The ratio of male to female death rates at ages under 75 years was 6.5 for cancer of the buccal cavity and pharynx; 1.5 for the digestive organs and peritoneum; 7.7 for the respiratory system; 0.39 for the genital organs; and 2.5 for the urinary organs. (See also ACCIDENT PREVENTION; CENSUS DATA, U.S.; DISASTERS; INFANT MORTALITY; SUICIDE STATISTICS.) (M. Sp.)

Debt, National. The national debt of the United States at the end of fiscal year 1952 amounted to \$259,105,000,000, about \$4,000,000,000 higher than a year earlier. (See Table I.) In a statement dated Aug. 19, 1952, reviewing the 1953 budget submitted to congress the previous January, Pres. Harry S. Truman reported that the national debt would be further increased to an estimated \$267,505,000,000 by June 30, 1953. The increase was attributed very largely to a sharp prospective rise in the budget deficit.

Table I.—National Debt of the United States

	June 30	(Millions of dollars)		June 30	(Millions of dollars)
1915		1,191	1945		258,682
1920		24,298	1946		269,422
1925		20,516	1947		258,286
1930		16,185	1948		252,292
1935		28,701	1949		252,770
1940		42,971	1950		257,357
1941		48,961	1951		255,222
1942		72,422	1952		259,105
1943		136,696	1953		267,505
1944		201,003			

Source: Data from 1915 to 1952 are from U.S. Department of the Treasury, daily treasury statement (revised); 1953 is estimate from "Statement by the President Reviewing the 1953 Budget" (Aug. 19, 1952).

The marked rise in public debt after fiscal year 1951 followed a substantial reduction during the 1946-48 period and an irregular, moderate increase over the 1949-51 period. The public debt as of June 30, 1952, was about \$20,000,000,000 below the peak total of \$279,214,000,000 reached at the end of Feb. 1946.

The post-World War II debt-retirement program of the U.S. treasury involved a large reduction in marketable interest-bearing securities. From March 1946 through June 1952, the reduction in such securities amounted to \$59,400,000,000. (See Table II.)

Table II.—Decrease in Marketable Interest-Bearing Public Debt*

	March 1946- June 1947	1948	Fiscal year ending 1949	1950	1951	1952
Treasury bills	1,257	2,018	2,221	—1,997	—81	—3,605
Certificates of indebtedness	16,117	2,708	—6,840	11,009	8,909	—18,914
Treasury notes	11,409	—3,232	7,779	—16,808	—15,402	16,843
Treasury bonds— bank restricted	3,791	0	0	0	13,576	8,601
Treasury bonds—bank eligible	—1,479	6,861	2,036	7,630	10,387	—5,429
Postal savings and other bonds	14	2	2	2	4	14
Total marketable interest- bearing public debt	31,108	8,356	5,199	—162	17,393	—2,490

*Negative figures denote increases.
Detail will not necessarily add to totals because of rounding.
Source: U.S. Department of the Treasury.

Table III furnishes data on the sources of funds for the reduction in the marketable interest-bearing public debt. During the last ten months of 1946, the funds used to retire aggregate maturities of \$23,197,000,000 were obtained chiefly from the general fund cash balance accumulated by the Victory Loan drive. In the period Jan. 1947-June 1951, funds for reducing the marketable public debt were derived mainly from the growth in nonmarketable issues.

With respect to federal debt management, a matter bound up closely with monetary policy, developments in 1952 reflected continued effective functioning of the agreement reached in March 1951 between the treasury and federal reserve, the agen-

cies charged with responsibility in this general area. The nature and significance of this agreement and of subsequent developments can best be viewed against the background of previous debt management operations.

Table III.—Sources of Funds for Reduction in Marketable Interest-Bearing Public Debt

	March 1946- June 1947	1948	Fiscal Year Ending 1949	1950	1951	1952
1. Reduction in general fund balance	22,650	—1,624	1,462	—2,047	—1,839	388
2. Net budgetary surplus*	—386	7,912	—1,445	—2,639	3,296	—4,418
3. Net receipts in trust accounts, etc.*	—1,344	—294	—495	99	679	1,477
4. Increase in nonmarketable public debt	10,186	2,361	5,676	4,423	15,256	1,394
Savings bonds	2,675	1,907	2,986	1,277	36	113
Special issues	6,469	2,845	2,564	—420	2,297	3,086
Other debt	1,042	—2,391	125	3,566	12,924	—1,806
5. Decrease in interest-bearing marketable public debt (1, 2, 3, 4)	31,108	8,356	5,199	—162	17,393	—2,490
6. Net decrease in total public debt (5, 4)	20,927	5,994	—478	—4,587	2,135	—3,883

*Transactions of Foreign Economic Cooperation Trust fund are consolidated with budget expenditures.

Detail will not necessarily add to totals because of rounding.
Source: U.S. Department of the Treasury.

The maintenance of order and stability in the government bond market—a policy initiated in the pre-World War II period—was a primary objective of the debt management program in the war and postwar periods. In line with this objective, the pre-war structure of interest rates was maintained with only minor variation during the war, permitting the authorities to finance cheaply the huge requirements of war finance.

In the postwar period, the stabilization of the government bond market, a joint treasury-federal reserve function, required different policies to meet changing conditions. Beginning in the spring of 1947, for example, several steps were taken to control an incipient boom in the government bond market. But in 1948, when a downward pressure on government bond prices developed, the federal reserve system supported the market through substantial purchases of government bonds from investment institutions and other nonbank holders seeking to acquire funds for lending. The prices of the longest-term issues were stabilized at slightly above par.

While pursuing the broad policy of stabilizing the market for government securities, treasury and federal reserve authorities adopted numerous measures designed to combat postwar inflation. Among them may be noted: (1) the substantial reduction effected in bank ownership of federal securities (see Table IV); (2) permitting interest rates to rise on short-term government securities from mid-1947 until the fall of 1948; and (3) raising by approximately \$3,000,000,000 in 1948 the amount of reserves required to be held by member banks to prevent the additional reserves created by federal reserve support purchases from becoming the basis for multiple credit expansion.

Table IV.—Estimated Ownership of Federal Securities—Public Debt and Guaranteed Securities

	June 1947	June 1948	June 1949	June 1950	June 1951	June 1952
Total federal securities outstanding	258.4	252.4	252.8	257.4	255.3	259.2
Total held by banks	91.9	85.9	82.4	83.9	81.4	84.1
Commercial banks	70.0	64.6	63.0	65.6	58.4	61.2
Federal reserve banks	21.9	21.4	19.3	18.3	23.0	22.9
Total held by nonbank investors	166.5	166.5	170.4	173.4	173.9	175.1
Individuals	66.2	65.4	66.3	66.4	64.0	63.2
Insurance companies	24.6	22.8	20.5	19.8	17.1	15.7
Mutual savings banks	12.1	12.0	11.6	11.6	10.2	9.6
Other corporations	13.9	13.6	15.7	19.0	21.1	20.3
State and local governments	7.1	7.8	8.0	8.7	9.4	9.9
U.S. government investment accounts	32.8	35.8	38.3	37.8	41.0	44.3
Miscellaneous investors	9.8	9.1	10.0	10.1	11.1	12.2

Detail will not necessarily add to totals because of rounding.
Source: U.S. Department of the Treasury.

In 1949, with the abatement of inflationary pressures and moderate downturn of business activity, the federal reserve board reduced the reserve requirements of member banks in

order to make credit more freely available. The ensuing strong bank demand resulted in sharp increases in the prices of government securities. To maintain orderly conditions in the money markets, the federal reserve sold short-term securities in considerable volume; but it discontinued the practice of freely selling government bonds. This compromise policy moderated the decline in yields on short-term government securities but permitted market forces to depress sharply the yields on medium and long-term government bonds, thereby encouraging investors to seek municipal and corporate securities and mortgage loans as outlets for their funds.

After the Korean outbreak in mid-1950, several steps were taken to restrict credit expansion without disturbing the stability of the government bond market. Nevertheless, in this period the total demand for long-term credit considerably exceeded the supply of funds becoming available from new savings and repayment of outstanding loans. Insurance companies and banks sold government bonds in heavy volume in order to meet this surplus demand, and the federal reserve system purchased the excess not bought by private investors so as to prevent declines in government bond prices.

Such support purchases by the system increased both the money supply and the reserves available to banks for expanding credit.

The treasury-federal reserve "accord" achieved in March 1951 marked a major shift in debt management (and monetary) policy. In its government security transactions the federal reserve system began placing greater emphasis on the supply and availability of bank reserves and less emphasis on maintaining fixed prices of government bonds. The system restricted its purchases of government securities and thereby reduced the supply of reserves made available to the banks. The prices of government securities were permitted to decline with market evaluations, and several of the long-term issues fell below par. Banks and other investors became less willing to convert their government securities at a market loss. The federal reserve regained considerable control over the availability of bank reserves and a firmer money market and gradual rise in interest rates consequently developed.

Also in accordance with the March 1951 agreement, the treasury acted to immobilize part of the publicly held debt. It offered in exchange for the two longest-term $2\frac{1}{2}\%$ bonds an issue of nonmarketable bonds with a longer term and higher interest coupon. The purpose was to encourage long-term investors such as insurance companies to retain their government securities, and thereby to minimize monetization of the public debt.

Table V.—Debt of State and Local Governments, U.S.

June 30	(Millions of dollars)				
	Total	State	County	City and township	School district and special district
1929	17,234	2,300	2,270	9,259	3,405
1933	19,985	3,018	2,521	10,577	3,869
1937	19,594	3,276	2,345	10,067	3,906
1940	20,246	3,526	2,156	10,189	4,375
1941	20,226	3,413	2,046	10,210	4,557
1942	19,690	3,211	1,846	10,079	4,554
1943	18,692	2,909	1,634	9,784	4,365
1944	17,471	2,768	1,694	8,826	4,183
1945	16,589	2,425	1,545	8,589	4,030
1946	15,922	2,358	1,417	8,267	3,880
1947	18,825	2,978	1,481	8,275	4,091
1948	18,702	3,722	1,408	9,135	4,437
1949	20,875	4,024	1,603	9,806	5,442
1950	24,191	5,361	1,707	11,247	5,876
1951	27,040	6,373	1,875	12,132	6,660

Source: U.S. Department of Commerce.

The effect of the change in debt management and monetary policy was evident in the methods of financing the large cash deficits of the second half of 1951 and of 1952. These deficits, stemming from the concentration of federal tax collections in the first half of the year and the uptrend in defense spending,

were financed with the aim of minimizing increases in bank deposits and reserves so as to hold down the potential inflationary impact. In general, the financing methods entailed, in addition to drawing on the general fund balance, the sale of securities (1) to nonbank investors (such as the sale of tax anticipation bills to corporations for use as tax payments the next March and June) and (2) to banks without, however, accompanying federal reserve open-market purchases that serve to create new bank reserves.

In President Truman's Aug. 1952 statement reviewing the 1953 budget, it was estimated that total payments of interest on the public debt in fiscal 1953 would amount to \$6,350,000,000—\$500,000,000 more than outlays in fiscal 1952.

U.S. State and Local Government Debt.—The latest official estimates available in 1952 of the aggregate debt of state and local governments in the U.S. are shown in Table V. State and local debt in 1951 was 70% higher than in 1946 and 40% higher than in 1940. It was evident that such indebtedness showed a further marked rise in 1952. New capital (over and above funds for refunding purposes) raised by state and local authorities in the year ending June 30, 1952, amounted to \$4,000,000,000.

Table VI.—National Debt of Various Countries

Country (Unit of currency)*	Date	Total debt (000,000s)	Date	Total debt (000,000s)
Argentina (peso)	12/31/39	4,794	12/31/49	20,643
Australia (pound-Aust.)	6/30/39	1,215	6/30/51	3,061
Austria (schilling)	12/31/37	3,495	12/31/49	10,986
Belgium (franc)	12/31/39	47,544	12/31/50	248,362
Bolivia (boliviano)	12/31/39	4,192	12/31/49	7,976
Brazil (cruzeiro)	12/31/39	18,885	12/31/49	25,862
Bulgaria (lev)	12/31/39	22,864	12/31/46	162,049
Burma (rupee)	9/30/40	574	9/30/51	944
Canada (dollar-Canadian)	3/31/39	3,710	3/31/51	16,935
Ceylon (rupee)	9/30/39	141	9/30/50	520
Chile (peso)	12/31/39	4,227	12/31/50	7,526
China (dollar-C.N.)	12/31/39	4,190†	12/31/46	9,910‡
Colombia (peso)	12/31/39	180	12/31/50	520
Costa Rica (colón)	12/31/39	133	12/31/49	425
Cuba (peso)	2/28/39	229	6/30/44	180
Czechoslovakia (koruna)	12/31/39	38,449	12/31/46	108,758
Denmark (krone)	3/31/39	1,506	3/31/49	4,760
Dominican Republic (peso)	12/31/41	20	12/31/50	24
Ecuador (sucra)	12/31/39	426	12/31/50	680
Egypt (pound-Egyptian)	4/30/39	95	4/30/50	160
Finland (markka)	12/31/45	87,752	12/31/50	122,160
France (franc)	12/31/39	482,967	12/31/50	4,133,000
Germany (reichsmark)	3/31/39	30,847	9/30/44	323,615
Greece (drachma)	3/31/39	52,138	3/31/41	52,996
Guatemala (quetzal)	6/30/39	13	6/30/49	15
Haiti (gourde)	9/30/39	48	9/30/50	36
Honduras (lempira)	6/30/39	18	6/30/50	10
Hungary (pengő)	6/30/39	1,937	12/31/43	6,501
Iceland (króna)	12/31/39	56	12/31/50	279
India (rupee)	3/31/39	11,851	3/31/52	25,582
Iran (rial)	3/20/40	2,111	3/20/49	6,768
Iraq (Iraqi dinar)	1/1/39	2	1/1/48	3
Ireland, Republic of (pound)	3/31/39	61	3/31/50	141
Italy (lira)	6/30/39	145,795†	6/30/51	2,851,500‡
Japan (yen)	3/31/39	17,921	3/31/51	279,700
Mexico (peso)	12/31/39	1,500	12/31/49	2,498
Netherlands (guilder)	12/31/39	4,218	12/31/50	20,519
New Zealand (pound-N.Z.)	3/31/39	313	3/31/51	667
Nicaragua (córdoba)	6/30/42	26	6/30/48	54
Norway (krone)	6/30/39	1,528	6/30/50	4,753
Panamá (balboa)	12/31/39	21	12/31/50	33
Paraguay (peso)	10/31/39	3,340	12/31/47	9,990
Peru (sol)	12/31/39	833	12/31/49	1,690
Philippines (peso)	6/30/46	146	6/30/50	761
Poland (zloty)	3/31/39	5,318	9/30/47	29,380‡
Portugal (escudo)	12/31/39	7,145	12/31/49	10,259
Rumania (leu)	3/31/39	107,716§	3/31/42	94,697§
Salvador (colón)	12/31/39	38	12/31/50	26
Siam (baht)	3/31/39	73	3/31/46	166
Spain (peseta)	12/31/39	24,127	12/31/47	53,173
Sweden (krona)	6/30/39	2,634	6/30/51	12,421
Switzerland (franc)	12/31/39	3,376†	12/31/50	9,444†
Turkey (pound-Turkish)	5/31/39	557	2/28/50	2,149
Union of South Africa (pound-S.A.)	3/31/39	279	3/31/51	776
Union of Soviet Socialist Republics (rouble)	12/31/37	28,766†		
United Kingdom (pound)	3/31/39	7,269	3/31/50	25,986
United States of America (dollar)	6/30/39	40,440	6/30/52	259,105
Uruguay (peso)	12/31/39	410	12/31/47	708
Venezuela (bolívar)	6/30/39	3†	6/30/50	15†

*For approximate value of various currencies see Exchange Control and Exchange Rates.

†Domestic debt only.

‡Not strictly comparable with the 1939 figure.

§Long-term domestic debt and foreign debt.

Source: United Nations, Department of Economic Affairs.

Other Countries.—In Table VI are presented data on the national debts of many countries of the world. Insofar as permitted by available information, the data are shown for 1939

and for a late postwar year, affording a comparison of national debts before and after World War II. (See also BUDGET, NATIONAL.) (C. F. Sz.)

Defense, U.S. Department of: see BUDGET, NATIONAL; GOVERNMENT DEPARTMENTS AND BUREAUS, U.S.

Defense Mobilization Agencies, U.S.: see DEFENSE PRODUCTION ADMINISTRATION; ECONOMIC STABILIZATION AGENCY; PRICE STABILIZATION, OFFICE OF; RENT STABILIZATION, OFFICE OF; WAGE STABILIZATION BOARD.

Defense Production Administration. The Defense Production Administration (DPA) was created by executive order on Jan. 3, 1951, under authority of the Defense Production act of 1950, to exercise general direction of the nation's defense production program. It functions under the Office of Defense Mobilization.

Primarily a policy-making agency, DPA directs, co-ordinates and reviews defense production activities performed by the appropriate departments and agencies within the framework of the executive branch. DPA performs its varied functions by assigning responsibility to three groups: delegate agencies, who have been given authority by DPA to take actions within their governmental jurisdiction to further the needs of the defense mobilization program; claimant agencies, who have been designated by DPA to submit materials requirements for programs for which they are assigned responsibility; and financing and procurement agencies, who implement approved programs for the expansion of capacity.

Delegate Agencies.—Four delegate agencies, in meeting the responsibilities assigned to them by DPA, issue priorities and allocations of materials and make recommendations for issuance of certificates of loans to private business for expansion of production, for issuance of tax amortization certificates and for approval of voluntary agreements. The department of the interior has jurisdiction with regard to petroleum, gas, solid fuels and electric power; the department of agriculture, with regard to food for industrial needs; the Interstate Commerce commission, domestic transportation, storage and port facilities, or the use thereof, excluding air transport, coastwise, inter-coastal and overseas shipping; and the department of commerce, with regard to all materials and facilities not elsewhere assigned. The fifth delegate agency, Defense Materials Procurement agency, has the responsibility of certification of essentiality of loans to the Reconstruction Finance corporation and the Export-Import bank to the extent that such loans are a part of and in accordance with the terms of programs certified by the defense production administrator.

Claimant Agencies.—The claimant agencies have the responsibility of determining the materials requirements for meeting the needs of the military establishment and the civilian economy within the area of their individual limitations.

The department of the interior, a delegate agency as well as a claimant, acts through the secretary in requesting materials for departmental programs such as production, preparation and processing of solid fuels. Within the department of the interior, the Petroleum Administration for Defense acts as claimant for the production, processing, refining and distribution of petroleum and gas.

The department of commerce contains three claimants: the office of international trade, acting with respect to all exports with certain exceptions; the National Production authority, claimant for production of materials and products not elsewhere assigned, related production equipment, related industrial facility construction, civilian communications, water and sewage facilities and other NPA programs; and the secretary of com-

merce, who acts as claimant for the maritime administration, bureau of public roads; civil aviation programs for which the Civil Aeronautics administration and the Civil Aeronautics board are responsible, and other department programs except as otherwise specified above.

The department of defense acts as claimant through its secretary for all of its programs, including military equipment and supplies under the Mutual Defense Assistance program, military construction and all housing on military bases and reservations, stock pile and civilian requirements of foreign areas under military administration, program requirements of the National Advisory Committee for Aeronautics, coast guard and central intelligence agency. The department of the army is claimant for civil construction projects under its jurisdiction except projects having electric power generating capacity or facilities, which are otherwise assigned.

The department of agriculture acts as claimant for farm production and construction, food processing and distribution.

The independent agencies in government who act as claimants within their jurisdiction are: Mutual Security agency; Veterans administration; Federal Civil Defense administration; Atomic Energy commission; Defense Transport administration; Housing and Home Finance agency; Federal Security agency; Defense Materials Procurement agency; and General Services administration.

Financing and Procurement Agencies.—The primary functions of these agencies is to administer the programs approved by the congress to provide incentives to private industry to expand industrial production to meet the demands of the defense mobilization program and maintain, simultaneously, a healthy civilian economy.

The Defense Materials Procurement agency purchases and makes commitments to purchase metals, minerals and other materials for government use or resale; encourages exploration, development and mining of critical and strategic minerals and metals; makes subsidy payments necessary to maintain essential production; and makes installation in government-owned and private plants, factories and facilities.

The Export-Import Bank of Washington acts as financing agent for foreign loans to implement the defense mobilization program.

The Reconstruction Finance corporation serves in the same capacity for domestic loans.

The major emphasis in 1952 was on expanding the nation's production to meet the demands of the defense mobilization program. Expansion goals were set for approximately 170 products and materials and the majority of the necessary expansion was aided by incentives to private industry provided by congress. By making a determination of the required expansion within an industry to meet the demands of the defense mobilization program and thus establishing an expansion goal, a clear concept was reached of the over-all requirements of the program. Goals remained to be set for about 100 materials and products. When all expansion goals were reached, the nation would have the capacity needed, when fully utilized, to meet military, defense-supporting and essential civilian requirements under the defense mobilization program. The problem at the close of 1952 was to identify the specific gaps which still remained through use of increased knowledge and ability to estimate the nature of full mobilization. (See also ECONOMIC STABILIZATION AGENCY; PRICE STABILIZATION, OFFICE OF; RENT STABILIZATION, OFFICE OF; WAGE STABILIZATION BOARD.)

(H. H. F.)

Defense Transport Administration: see RAILROADS.
De Gasperi, Alcide: see GASPERI, ALCIDE DE.

Delaware. Delaware, on the middle Atlantic seaboard, one of the original 13 states of the United States, is called the "First state," having been the first to ratify the federal constitution, Dec. 7, 1787. The "Diamond state" is also a popular name. Area 2,057 sq.mi. (land 1,978 sq.mi.; inland water 79 sq.mi.). Population (1950 U.S. census) 316,715 compared with (1940) 266,505. Of the latter, native white numbered 215,695; foreign-born 14,913; Negro 35,876.

History.—A special session of the Delaware general assembly called by Gov. Elbert N. Carvel in Dec. 1951, appropriated \$1,743,840 to increase the uniform state-supported salary schedule for all public school staffs and employees in 1952.

The chief state officers in 1952 (preceding the November election) were: governor, Elbert N. Carvel; lieutenant governor, Alexis I. du Pont Bayard; secretary of state, Harris B. McDowell, Jr.; tax commissioner, Howard S. Abbott; bank commissioner, Randolph Hughes; chancellor, J. Collins Seitz; attorney general, H. Albert Young; insurance commissioner, William L. Murphy; state treasurer, Ralph W. Emerson; state auditor, George Daniel Enterline; adjutant general, Brig. Gen. Joseph J. Cannell; director, legislative reference bureau, Robert W. Gunnell.

Education.—The \$16,500,000 school building and plant improvement program provided for in 1951 was well advanced on Oct. 1, 1952.

The cost of operating the public schools in the fiscal year, June 30, 1951, to June 30, 1952, was \$13,700,000, compared with \$11,816,938 the previous year. The expenditure per pupil in average daily attendance was \$314.14 compared with \$280.65 in 1950-51. Elementary schools had an enrolment of 31,506 and a teaching staff of 1,107. Secondary schools had an enrolment of 18,061 and teaching staff of 959. From Jan. 1 to Oct. 1, 1952, the state board of vocational education placed 315 disabled persons in earning jobs. The state superintendent of public instruction in 1952 was George R. Miller, Jr.

Social Insurance and Assistance, Public Welfare and Related Programs.—State unemployment compensation paid for the fiscal year ending June 30, 1952, was \$1,038,706; active claims on that date were 1,237. The cost outside relief, Jan. 1 to Sept. 30, 1952, was \$351,950 for an average 800 cases per month. The cost was shared half by the state and half by the county in which the relief was given. In Oct. 1952, 1,757 persons were receiving old-age assistance.

During the fiscal year ending June 30, 1952, 847 children were cared for in their own or foster homes at a cost of \$342,083; the number of dependent children aided was 3,152 at a cost of \$773,761. The state appropriation for public welfare was \$3,887,573, exclusive of grants to semi-public institutions and agencies. The New Castle County Workhouse which accepts long-term prisoners from the other counties (there is no state prison) received 2,656 prisoners and discharged 2,634 during the fiscal year. On June 30, 1952, there were 344 inmates.

Communications.—The mileage of all highways and rural roads was 926. The income of the state highway department for the fiscal year was \$1,030,906, including federal aid of \$1,646,773. Railroad mileage was approximately 270.

For the nine months, Jan. through Sept. 1952, tonnage at the port of Wilmington was 479,067; value of cargoes, \$30,340,634. On Oct. 1, 1952, the state had 133,717 telephones in use.

Banking and Finance.—On June 30, 1952, there were 54 state banks, trust companies, branch banks and offices having total resources of \$614,410,173. The assets of the eleven national banks were \$35,784,790.84, making the total resources of all Delaware banks \$650,645,808.14. (Two national banks had been purchased by two state banks.)

Total state receipts for the year ending June 30, 1952, were \$56,000,000, of which \$25,000,000 was from taxes and \$30,000,000 from special and receipts. The cash balance at the beginning of the year was \$30,000,938. Expenditures were \$63,776,657. The gross debt was \$42,937,000, and total debt service (interest and redemptions) amounted to \$2,618,768.

Agriculture.—The estimated total cash income from agricultural production in 1952 was \$105,682,000, of which \$83,402,000 was from live-

Table II.—Principal Industries of Delaware

Industry	1952	1951
Food	\$79,555,197	\$53,664,188
Clothing	115,394,061	19,782,981
Household supplies	6,938,235	961,488
Auto supplies	5,308,584	8,568,939
Drugs and medical supplies	3,119,507	16,923
Tobacco	3,769,944	3,598,239
Miscellaneous	239,624,642	128,283,488

Manufacturing.—Gross receipts of 709 licensed manufacturers for the year ended June 30, 1952, were \$453,790,170, compared with 710 for the previous year with gross receipts of \$214,876,246. The total number of employees under the unemployment compensation law June 30, 1952, was 117,038. Total wages paid for the year ended June 30, 1952, were \$399,622,143. The Wilmington area quarterly survey of employment, Aug. 15, 1952, showed 68,312 employed by 583 employers compared with 65,977 by 550 employers on the same day in 1951. New corporations chartered at Dover for the year ended June 30, 1952, were 2,767, compared with 2,592 the previous year. Corporations that became void numbered 965 compared with 1,171 the year before. (J. EN.)

Mineral Production.—Delaware has the smallest mineral output of any state, and that entirely in building materials. In 1949 the output included 33,212 short tons of clays (\$46,293), 233,977 tons of sand and gravel (\$196,541), and 37,240 tons of stone (\$92,100); total value \$334,844. In 1950 output increased to 41,000 tons of clays (\$40,375), 367,524 tons of sand and gravel (\$291,715) and 77,050 tons of stone (\$190,113); total value \$522,203. Data for 1951 were not yet available.

Democracy. The term democracy in this article means that form of government and way of life which was developed, following the example of 17th century England, in the constitutional struggles of western Europe and North America in the 18th and 19th centuries. Democracy in this sense is based upon a multiparty representative system in which the voters have the choice among alternative and opposed administrations, upon respect of individual liberty and freedom of discussion and expression in the political and cultural fields, and upon the independence of the judiciary from political or administrative influence.

Democracy in the western sense represented an entirely new departure in history by not treating opposition as a hostile force but by striving to make it a constructive part in the process of government. Communists and fascists reverted to a predemocratic strictly authoritarian form of government, suppressing all political and cultural opposition and even diversity. They not only insisted upon the "immorality" of western democracy which they called "plutocracy," but also upon its inability to cope with the problems of modern technological mass civilization. They predicted the early and inevitable decay of western democracy as the result of social disintegration, of party strife and slowness of parliamentary deliberations, and of the supposedly inevitable economic crises in a not entirely planned and centrally directed society.

Contrary to these predictions, democracy in 1952, as in the preceding years, showed no sign of collapse. The weakness of democracy in certain attitudes, which had been apparent before and immediately after World War II and which had much encouraged fascists and Communists to expect an easy victory over democracy, was due not to any intrinsic defect but to a lack of understanding of the nature and intentions of the antidemocratic forces, and therefore to a lack of that vigilance which is indispensable for the preservation of liberty. This awareness was largely absent before World War II with regard to the threat of fascism, and immediately after World War II with regard to the threat of communism. All this changed after 1947 through the increased co-operation of the democracies and the revitalization of their faith in their own way of life. Even in Italy and France, where communism continued in 1952 to exercise a strong appeal among a large part of the working class, of the peasants and of the intellectuals, Communist influence was not strong enough, in spite of all its efforts, to impede the rearmament of these nations with the help of the United States and their co-operation in the North Atlantic Treaty organization. Mass strikes called in these countries as a protest against the disembarkment of U.S. weapons and against the visit of Gen. Matthew B. Ridgway, who was

Table I.—Leading Agricultural Products of Delaware

Crop	Indicated 1952	1951	Average 1941-50
Corn, bu.	6,012,000	5,735,000	4,219,000
Wheat, bu.	171,000	316,000	508,000
Oats, bu.	95,000	100,000	100,000
Barley, bu.	1,160,000	1,189,000	1,178,000
Beans, bu.	975,000	884,000	604,000
Peas, bu.	99,000	148,000	261,000
Alfalfa, bu.	224,000	256,000	165,000
Hay, bu.	341,000	341,000	288,000
Straw, bu.	848,000	700,000	330,000
Apples, tons (processed)	17,100	30,000	
Apples, crates	72,000	85,000	
Peas, tons shelled	13,500	18,340	

Source: U.S. Department of Agriculture.

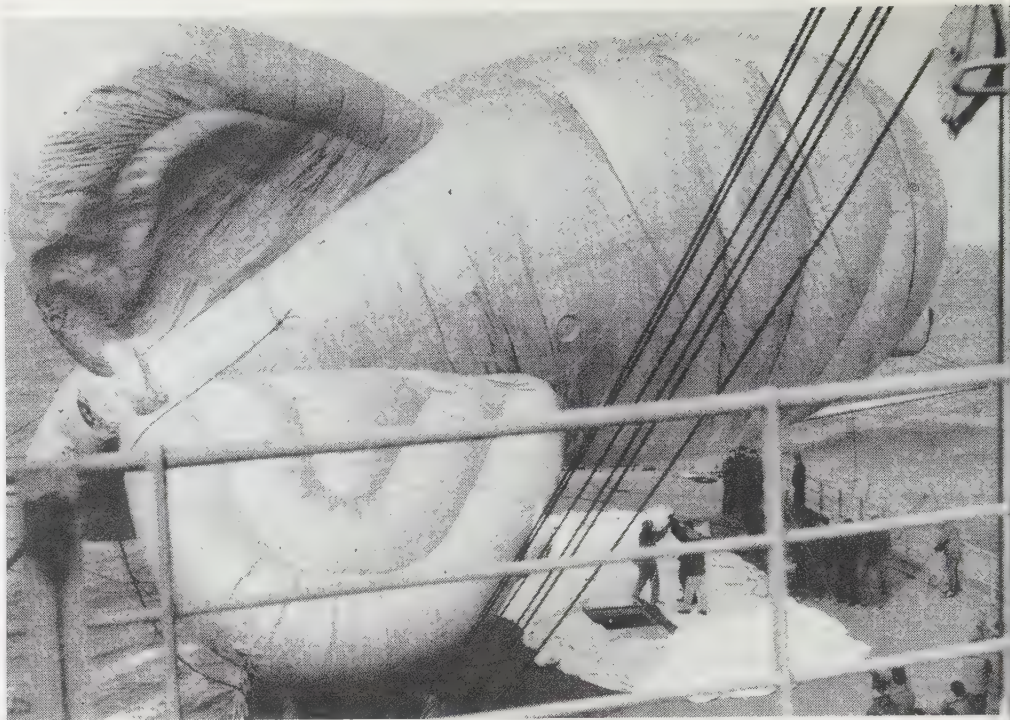
stock, \$21,918,000 from crops and \$362,000 government payments—compared with actual figures for 1951: total cash income \$112,958,000, restock \$89,078,000, crops \$23,409,000, government payments \$471,000.

appointed commander in chief of the North Atlantic forces as successor to Gen. Dwight D. Eisenhower, petered out ineffectually. The French government felt encouraged to adopt stronger measures against the Communist party.

Outside Italy and France, no other European country which was not directly under soviet control showed any appreciable strength of antidemocratic forces. Even countries "in the shadow" of the soviet military machine like Finland and Austria clung staunchly and defiantly to the democratic way of life. The few elections held in European countries during 1952 witnessed everywhere a strong decrease of Communist votes. In Germany, elections were held in March 1952 for the constituent assembly of the newly formed state of Baden-Württemberg. The Communists received 119,631 votes or 4.3% of the total, compared with 175,910 votes or 6.4% of the total at the last elections held in 1949. In the new assembly they formed the smallest party with four deputies out of 121. The neofascist party, the Sozialistische Reichspartei, received only a little more than 2% of the vote and did not elect any deputy.

Elections in countries with a firmly rooted democratic tradition, in the Netherlands in June and in Sweden in September, brought no surprises. In the Netherlands the Labour party emerged as the strongest single party, closely followed by the Catholic People's party. The Labour party received almost 300,000 votes more than at the last elections in July 1948, and gained this added strength at the expense of the Communists, whose vote represented only 6.2% of the total compared with 7.7% in the last elections and who lost two of the eight seats which they formerly held in the chamber. The Swedish elections were won by the ruling coalition of Social Democrats and Agrarians, but by a smaller margin. The Liberals and the Conservatives made appreciable gains, while the Communists lost heavily, having in the new parliament only 5 deputies among 230 compared with 8 in the previous chamber.

Less encouraging was the picture for democracy in Latin America, where semifascist nationalist forces, influenced by the example of Peronism in Argentina, frequently combined forces with Communist and Communist-inspired movements. On the other hand, two key countries in Asia showed in their elections that the democratic process was slowly striking roots there. At the beginning of the year elections in India not only brought success to the Congress party under the leadership of prime minister Jawaharlal Nehru, but they were held in a surprisingly orderly way, notwithstanding the fact that many of the voters were illiterate people becoming familiarized for the first time with the democratic voting system. Japan held its first elections under the newly gained sovereignty on Oct. 1. Though the Liberals who had been in power in the preceding chamber lost 45 seats, they still remained, with 240 deputies out of 466, the majority party. The Progressives, who were perhaps the most outspoken party for rearmament on the side of the democracies, gained 18 seats and became the second strongest party. These victories and the complete defeat of the Communists pointed to a Japanese determi-



ABOARD THE U.S. COAST GUARD cutter "Courier," first U.S. sea-going radio station for the "Voice of America." The floating transmitter began operation in 1952, beamed mainly at nations in the soviet bloc. A barrage balloon shown being readied to lift the antenna for the ship's main transmitter

nation to stand with the democracies. The Communists, who had 22 representatives in the former chamber elected in 1949 and U.S. occupation, were unable in 1952 to gain even one seat; the total vote fell from 3,000,000 in 1949 to 837,000 in the 1952 election. The young Japanese democracy rejected not only the Communists but also the extreme nationalist candidates.

Less surprising was the strength of the democratic forces shown in the elections in Ceylon. This former British colony had under the leadership of D. S. Senanayake achieved a moderate peaceful transition to an independent member of the British Commonwealth. After Senanayake's death in the spring of 1952 his Cambridge-educated son, Dudley Senanayake, formerly minister of agriculture, became the leader of the United National party. It gained 54 of the 101 parliamentary seats and with the help of some smaller parties formed a government disposing of 70 votes. The Communists suffered a loss, the Stalinists retaining only 3 seats, and a semi-Trotskyite party receiving only 10 seats instead of the 18 which it had had in the previous parliament.

One of the most important elements in the growing strength of democracy in 1952 was the progressive development of democratic federalism in the movements aiming at the creation of a European Union and, on a wider scale, of an Atlantic union which would include the democratic countries of western Europe and North America. This democratic federalism, a development which began only in 1948, had its foundation in the need for common defense against totalitarian aggressiveness. In spite of the novelty of the movement, which implied everywhere a break with long-standing traditions of national policy and sentiment, it had by 1952 not only led to initial successes but began to extend beyond its immediate purpose toward the goal of closer cultural and economic integration of the various nations with a common democratic heritage. The fact that in the presidential elections of the fall of 1952 in the United States both candidates and both parties stressed the need for a closer cooperation among the democratic nations, strengthened the trend toward democratic federalism on a wider basis. Due recognition was given to the importance of this movement by the sov-

premier Joseph Stalin in his article published at the beginning of Oct. 1952, in which he based the hope for Communist victory on a split between the United States and its chief European allies. (See also COMMUNISM; EDUCATION; ELECTIONS, U.S.; EUROPEAN UNION; FASCISM; GREAT BRITAIN; SOCIALISM; UNITED STATES.)

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Democratic Party: see POLITICAL PARTIES, U.S.

Denmark. A monarchy of north central Europe, Denmark has an area of 16,569 sq.mi. Pop.: (1950 census) 4,281,275; (1951 est.) 4,303,000. Capital: Copenhagen (768,105, or including suburbs 1,168,340). Other principal cities (1950 census): Aarhus (116,167); Odense (100,940); Aalborg (79,806). Religion: Lutheran Christian. Ruler in 1952: King Frederick IX; prime minister: Erik Eriksen.

History.—In 1952 Denmark, like many other countries, was waging two major campaigns—one for economic security, one for political security.

Denmark's financial reserves were small, but by May 1952 the country could look forward to equilibrium in its balance of payments, possibly a slight surplus by the end of the year. Exports to the dollar lands of the western hemisphere were up compared with 1951, and import policies were liberalized. Of the 1948 list of imports, 76% were on the free list by 1952 (though for certain textiles a percentage deposit in the National bank was required). Coffee went off rationing leaving only sugar restricted by October. Employment remained at a high level. The price front, however, could not be held. An increase on the state subsidy kept milk at the old price, but ceilings were raised on butter and eggs. Government allowances were increased for grain and children's footwear. The higher governmental costs then had to be met by a shipping tax and a raise in postal rates.

The Danes fought for their outside market, the most important move being new negotiations on prices of farm products sold to Britain.

The government also urged the U.S. to ease restrictions on cheese imports into that country. The Danish argument was that the U.S. did not need such protection when it sold to Denmark (in 1950) \$54,000,000 worth of goods, but bought from that country a total of only \$12,277,000. In January the U.S. senate shelved this question in committee, but on July 3 slight modifications were granted through setting new quotas by varieties.

Denmark's total cost for maintaining about 200,000 refugees after World War II was 429,000,000 kroner (180,000,000 kroner for the period up to May 1, 1946); the Danish delegation to a conference in London on the problem of repayment agreed to accept 160,000,000 kroner in 20 annual payments.

A dilemma confronted the government when the time came, in July, to deliver a 13,200-ton tanker to the Soviet Union. A Copenhagen firm had built the tanker on a contract of 1948, prior to any restrictions on sales to the east. But the U.S. government protested that the ship came in the category of strategic materials, and that such shipments to "iron curtain" countries were banned for all countries receiving U.S. aid (by the Battle act). Danish parliamentary leaders of all five parties held a special session on the question and approved the governmental decision to carry out the contract. Delivery was made on July 7. Pres. Harry S. Truman accepted the situation as being a special case, and ruled that aid to Denmark should not be cancelled; cancellation, he said would but weaken the North Atlantic

Treaty organization and strengthen the U.S.S.R., but he deplored the delivery and expressed his opinion that the aggressive intentions and actions of the Soviet Union should override the legal Danish argument of contract fulfilment.

Foreign Minister Ole Bjørn Kraft continued to promote proposals for intimate co-operation among the Scandinavian states, including a plan for a permanent Scandinavian parliamentary council. One practical step was consummated in July with the abandonment of passports among the northern countries.

For the strengthening of Danish collaboration in NATO the term of military service was (Dec. 12, 1951) extended from 12 months to 18 months. This would provide an additional division of 18,000 men, and would give Denmark by the end of 1952 an army of 100,000, a navy of 25,000, an air force of 15,000. local and home defense forces of 70,000 and a home guard of 40,000.

Denmark was an eagerly interested participator in the manoeuvres of the North Atlantic Treaty forces in Sept. 1952, much of which took place in or around its lands and seas. It continued to be disturbed by soviet captures of Danish fishing ships in the Baltic, and reacted strongly when the Russians shot down two Swedish planes. Discussions continued regarding the stationing of U.S. Thunderjet fighter planes in Jutland, a step which the U.S.S.R. threateningly condemned.

King Frederick IX and Queen Ingrid made a state visit in the summer to Greenland. Greenland's connection with Denmark was again emphasized when information was published about the U.S. air base at Thule; the Scandinavian Airlines system quickly announced its interest in using Thule as a base on a route from Copenhagen to California, and hoped to begin scheduled flights by June 1953. (See also GREENLAND.) (F. D. S.)

Education.—Schools (1950-51): elementary, middle and secondary 4,107, pupils 532,184; technical 371, pupils 60,224; commercial 208, pupils 32,680; agricultural 27, pupils 2,721. Teachers' colleges 21, pupils 3,603. Universities 2, professors and lecturers 275, students 5,683; other institutions of higher education 8, students 5,465.

Finance and Banking.—Budget: (1951-52 est.) revenue 2,569,000,000 Kr., expenditure 2,573,000,000 Kr.; (1952-53 est.) revenue 2,511,000,000 Kr., expenditure 2,507,000,000 Kr. Real public debt (1951): 4,970,400,000 Kr. Currency circulation (Aug. 1952) 1,643,000,000 Kr. Bank deposits (Aug. 1952) 6,135,000,000 Kr. Gold and foreign exchange (July 1952) U.S. \$110,000,000. Monetary unit: krone, with an exchange rate of 19.34 Kr. to the pound and 6.92 Kr. to the U.S. dollar.

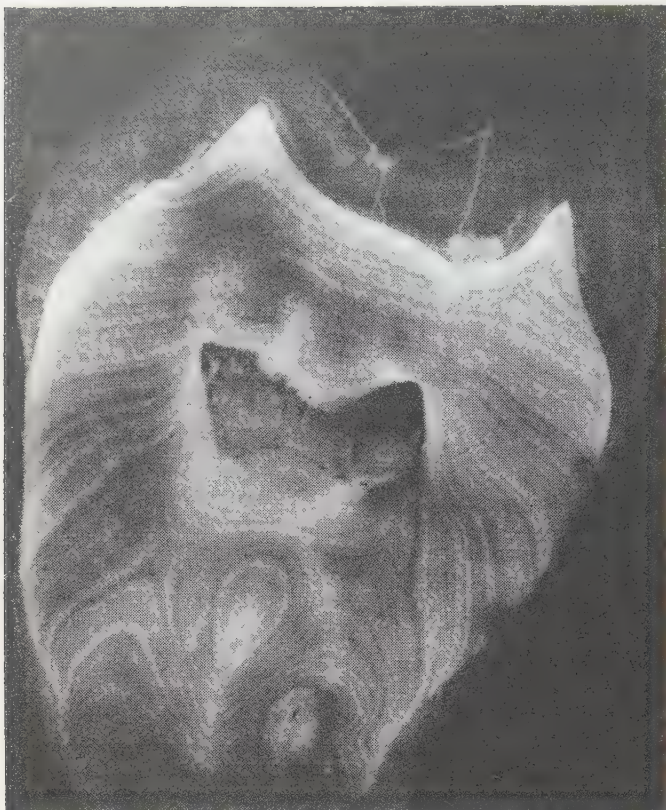
Foreign Trade.—(1951) Imports 6,976,000,000 Kr., exports 5,784,000,000 Kr. Main sources of imports (1951): U.K. 26%; Germany 14%; U.S. 11%; Sweden 8%; France 6%. Main destinations of exports: U.K. 38%; Germany 15%; Sweden 5%; Norway 4%. Main imports: coal, petroleum and products 18%; textiles 15%; machinery and vehicles 11%; wood, paper and manufactures 9%. Main exports: dairy products 27%; meat and products 24%; machinery 8%; live meat animals 7%.

Transport and Communications.—Roads (1952): 33,165 mi. Licensed motor vehicles (Dec. 1951): cars 189,288, of which commercial 73,407. Railways (1951): 2,962 mi.; passenger-miles 2,050,000,000; freight, ton-miles 814,000,000. Shipping (merchant vessels of 100 gross tons and over, Dec. 1951): 767; total tonnage 1,389,000. Air transport (1951): passenger-miles 370,000,000; cargo, ton-miles 47,000,000. Telephones (1951): 723,443. Radio receiving set licences (1951): 1,162,154.

Agriculture.—Main crops (metric tons, 1951): wheat 275,000; barley 1,730,000; oats 780,000; rye 230,000; potatoes 1,952,000; sugar, raw value 350,000. Livestock (July 1952): cattle 3,057,000, including 1,473,000 dairy cows; sheep 51,000; pigs 3,632,000; horses 423,000; goats (July 1949) 3,820,000; poultry 23,411,000. Dairy products (metric tons, 1951): milk 5,232,000; butter 168,000; cheese 74,400. Meat production (metric tons, 1951) 603,000, of which beef and veal 207,000, pork 395,000. Index of livestock production (on basis of 1949=100, 1951): 123. Fisheries (1951): total catch 292,450 metric tons.

Industry.—Industrial establishments (June 1948): 102,303; persons employed 684,939. Fuel and power (1951): coal, distributed 10,762,000 metric tons; manufactured gas 386,400,000 cu.m.; electricity 2,137,200,000 kw.hr. Cement production (1951) 987,600 metric tons. New dwelling units completed (1951) 21,538. Index of total industrial production (1948=100; 1951) 120.

Dentistry. The Eleventh International Dental Congress of the Federation Dentaire Internationale met in London, Eng., in July 1952. Representatives of about 40 countries of the free world attended. During the meeting, emphasis was placed on the prevention of dental diseases and the need for a better understanding of their causes, on research, on dental



PHOTOMICROGRAPH of a tooth section using the natural phosphorescence of human teeth to reveal new details of tooth structure. The technique, developed at the national bureau of standards in 1952, was expected to help in explaining the mechanism of tooth decay

health procedures and on education. Operative techniques received less emphasis than in the past.

The fluoridation of public water supplies continued to be a highly controversial subject, particularly in certain areas. On Aug. 25, San Francisco, Calif., began to fluorinate its water. An estimated 80% or 650,000 of the city's population was to be served by this procedure.

On Oct. 1, an estimated 429 communities in 42 states and the District of Columbia were fluoridating their water supplies. Nearly 300 additional communities had approved the measure and were making plans to place it in operation. Among large cities where fluoridation was in operation was Chattanooga, Tenn., which also supplied water to five near-by communities. Chattanooga was the 16th city of more than 1,000 persons to add fluorides to its water supply.

It had been shown that this procedure reduces the incidence of dental caries up to 60%.

The airbrasive technique for removing decay in teeth and preparing them for filling continued to arouse interest and its use had increased. However, the question was raised whether some of the fine particles of the abrasive that escape the exhaust apparatus does harm to patients who have respiratory infections. The question also arose as to whether the operator who works with the apparatus constantly may be subjected to an occupational hazard.

No data on either of these questions existed but investigations were going on to determine the hazards. Much depended on the ability of the operator successfully to make use of the exhaust end of the appliance.

Cracks at corners of the mouth had long disturbed patients and had challenged both the medical and dental professions. It had been rather generally accepted that true cheilitis is associated with a riboflavin deficiency. But false or pseudocheilitis seemed to appear in people who wore full dentures and where

the vertical dimension of the occlusion had been reduced and also where the dentures were not worn at night. It was reported that lesions resulting from reduced intermaxillary space slanted downward and outward, whereas the true cheilitis associated with riboflavin deficiency was more horizontal.

In the false variety where the lesions are produced by a reduction of the vertical dimension, the upper lip overhangs the lower, producing a fold at the corners of the mouth. It was believed that moisture from retained saliva in the fold, together with bacterial and mechanical irritation, produced the lesions.
(L. M. S. M.)

Dermatology. Psoriasis is a disease that afflicts thousands of persons and interests thousands more because of its tendency to be familial. In 1952 recent study of the genetics of psoriasis, based on information obtained from 464 consecutive patients with the disease, showed: a predominance of male patients essentially the same as the predominance of males in these families; no relation between the sex of the patient and that of his or her affected parent or sibling; and no relation between birth order and the occurrence of psoriasis. The incidence of psoriasis among patients with nonpsoriatic parents was 2.45%, with one psoriatic parent 9%. There were no patients in the group with two psoriatic parents. The incidence of psoriasis among the patients' parents was 5.9%. The data indicated the presence of a hereditary component in the causation of psoriasis, a minimum of two genes.

Estrogenic substances had been used with success for the treatment of such widely different diseases as hereditary haemorrhagic telangiectasia, diseases affecting the sebaceous glands (especially senile sebaceous adenoma) and some fungal infections.

Persons with hereditary haemorrhagic telangiectasia, because of the presence of tiny dilated capillaries in the skin and mucous membranes, suffer from repeated nosebleeds and occasionally from rectal bleeding, haemorrhagic spots on the lips, tongue, etc. In one patient, because there was an apparent relationship between the recurrent haemorrhages and the menstrual cycle, treatment with estrogenic substances was instituted and effected control of the bleeding. Similar treatment then was used successfully in four other patients, two of them men who required concomitant treatment with male sex hormones to combat feminizing side effects of the estrogens. All of the patients were in their 40s or 50s. In all of them there was an apparent restoration of normal texture to the nasal mucous membrane and a tendency for the dilated capillaries to disappear during treatment.

The use of estrogenic substances to ameliorate cancer of the prostate in two men led incidentally to the development of chemically related compounds for the treatment of blastomycosis, a higher type fungal infection that sometimes resists treatment stubbornly. The first two patients both had inoperable cancer of the prostate and chronic blastomycosis. Treatment with diethylstilbestrol was instituted for the carcinoma and it was noted later that in both cases the blastomycosis without "specific" treatment apparently had been eradicated. Two other patients with the systemic type of blastomycosis (without carcinoma) then were treated with stilbamidine, which is not a hormone but which is related chemically to diethylstilbestrol. These two patients also responded dramatically and apparently were cured. All four patients previously had failed to respond to orthodox treatment. The mode of action of the drug is not known, although in vitro studies indicate the effects to be chemotherapeutic and not hormonal. There also was a case of actinomycosis which was treated successfully with stilbamidine. What effect this group of drugs would have upon other fungal

infections was not known by the close of 1952, although preliminary studies indicated that the spectrum of effectiveness probably would be narrow.

It appeared that ringworm of the scalp might occur in adults more often than was generally realized. This had always been considered a disease of childhood which was cured spontaneously with the onset of puberty. However, about 70 cases of ringworm of the scalp in adults or postpubertal persons were reported from Texas alone. The infections produced a variety of bizarre clinical pictures which often mimicked other inflammatory diseases of the scalp so that the diagnosis could be determined only by recovering the organisms from infected scalps and by culture studies. Examination with Wood's light was unreliable as a diagnostic procedure in the cases observed in Texas. (See also MEDICINE.) (H. RA.)

Detroit. Detroit, Mich., fifth United States city in population according to the 1950 federal census, when the count was 1,849,568, had an estimated 1952 population of 1,915,000 and an area of 137.9 sq.mi. The 1952 population of the metropolitan area, embracing the city and adjacent suburbs, was estimated at 3,250,000.

Founded in 1701 as a French post, Detroit stands on the Detroit river, part of the international border waterway linking Lakes Huron and Erie. Windsor, Ont., is directly opposite Detroit, to the south.

Hub of southeastern Michigan's manufacturing complex, Detroit and its close environs had a 1952 industrial output estimated at \$10,000,000,000. As an international port, Detroit in May attained a place second only to New York city in dollar value of exports and imports. That month's total was \$144,400,000. In October customs receipts reached an all-time monthly high of \$5,725,683. While largely attributable to transborder rail and truck shipping, a considerable part of the gain came from growth of Detroit's direct ocean traffic.

Inadequately equipped as to general cargo-handling facilities, Detroit nevertheless attracts many seagoing vessels of tonnage small enough to permit navigation of the St. Lawrence river from the Atlantic ocean to the Great Lakes. As the lakes navigation season drew to a close, Detroit had seen more than 130 arrivals and departures of foreign flag vessels.

The year saw extensive progress in the construction of a system of depressed vehicular expressways, the letting of contracts for a city-county skyscraper to replace antiquated public buildings, major public housing developments and preliminaries toward creation of a third principal airport for the area.

The outstanding civic accomplishment of 1952 was the raising of \$12,453,000 (\$553,000 more than the minimum sought) by the United foundation, whose funds support about 150 welfare and service agencies, both local and national.

Business and residents continued to disperse from the city's central portions to outlying areas and suburbs, a characteristic often attributed to the size of the city combined with the absence of high-speed public transportation.

The city is served by the Detroit Street Railways, a municipally owned but not tax-supported system consisting wholly of surface vehicles. In October, for the first time in 21 months, it showed an operating profit. This revenue increase derived largely from a fare raise (15 cents to 20 cents) and heavy patronage because of high industrial employment.

The city government is nonpartisan, with a nine-man council elected at large. Detroit is the county seat of Wayne county, which elects under the party system and whose officials for the previous 20 years had been, with few exceptions, Democratic. (R. Ho.)

Evaluation: see EXCHANGE CONTROL AND EXCHANGE RATES.

Dewey, Thomas Edmund (1902—), U.S. governor, was born on March 24 in Owosso, Mich. He was graduated from the University of Michigan, Ann Arbor, in 1923, and received his law degree from Columbia university in 1925. He began to practise law and joined the New York Republican organization. In 1931 he was appointed chief assistant to the U.S. attorney for southern New York, and in 1935 special prosecutor to investigate gambling and other rackets in the state. He was elected district attorney in 1937, and campaigned for governor of New York in 1938 but was defeated. He was elected governor of New York in 1942 and re-elected in 1946 and 1950. In 1944 Dewey was nominated Republican candidate for president, but was defeated by Franklin D. Roosevelt. Again Republican candidate in 1948, he lost the election to Pres. Harry S. Truman.

Dewey generally supported the bipartisan foreign policy, and in Feb. 1951 he testified before the joint session of the senate foreign relations and armed services committees that he believed there should be no limit to the number of U.S. troops that could be sent overseas. As the 1952 presidential elections approached, Dewey said he would oppose any move to make him the Republican nominee again. Instead he backed the candidacy of Dwight D. Eisenhower, and during the Republican convention at Chicago in July, Dewey was one of the leaders credited with securing Eisenhower's nomination on the first ballot.

Diabetes. Convincing substantiation of the thesis that control of diabetes prevents, lessens and defers complications multiplied during 1952, from various sources and in many ways. One of these was the growing number of diabetics who after 20 to 25 years of the disease had given birth to healthy children. Although pregnancy is usually inadvisable for women with a duration of 25 years, the fact that such pregnancies could end successfully in those who had controlled their diabetes well was notable.

The word "cure" entered upon the diabetic horizon when it was found that hyperglycaemia could be counteracted in an experimental animal by a low diet, by insulin or by phlorhizin. Treatment of the disease within the first three months, but not later, resulted in the restoration, recovery and regeneration of the islands of Langerhans of these animals. This had been known for several years but was more recently applied with some success by R. F. Ogilvie to the persistent alloxan diabetes of rabbits. The improvement consisted in the replacement of a marked hyperglycaemia and glycosuria by an almost or completely normal blood sugar and urine reaction, which, however, was of temporary duration. Such animals treated with anterior pituitary extract experienced enlargement and budding and a suggestive growth of new islands from the ducts. The mechanism of this action was obscure, but it was thought it might take place through stimulation of the thyroid gland and ovaries. Various estrogens were known to be effective in hastening or retarding the development of diabetes in Folgia's 95%-depancreatized rats, as reported by B. A. Houssay in 1951.

A knowledge of the insulin content of the blood in diabetes obviously would be of great value. Determinations had been attempted, but without marked success, because of the small content of insulin present. However, J. Bornstein and his collaborators, in Australia and England, devised a new technique for the analysis. They used for this work, as sensitive test animals, alloxan-diabetic, hypophysectomized, adrenalectomized rats. From results already obtained with known amounts of injected crystalline insulin, Bornstein reached the conclusion that the method was sufficiently sensitive to determine from $\frac{1}{20.000}$ to $\frac{1}{2.000}$ unit. From studies on humans, Bornstein and R. D. Lawrence attempted to differentiate two types of diabetes; namely,

those with and without available plasma insulin. Those in the first group were characterized by hyperglycaemia, together with ketosis and weight loss, and in the second group were those often controlled without insulin after weight is reduced. This work opened up possibilities for research into the nature and aetiology of diabetes.

Another diabetic mystery apparently was solved by the discovery that cobalt destroys the alpha cells of the islands of Langerhans in a fashion similar to that in which alloxan destroys the beta cells. It had formerly seemed strange that, when the pancreas was removed after the beta cells were destroyed with alloxan, less rather than more insulin was needed to control the experimental animal. It had been suspected that the alpha cells might exert a diabetic, anti-insulin effect, and that they were responsible for the temporary rise in blood sugar when certain types of insulin were injected. C. A. Vuylsteke, Cornelis and C. de Duve attacked the problem and reported that the daily subcutaneous injection of 30 mg. of cobalt chloride to male guinea pigs produced after six days not only histological lesions of the alpha cells of the pancreatic islands but also a significant decrease in the content of the hyperglycaemic factor. A detailed discussion of their work was presented by De Duve in the Banting lecture at the Diabetic association in England and at the first International Diabetes congress in Leyden, Neth.

The term "triopathy" was applied to a growing number of diabetic patients who had shown evidences first of involvement of the nervous system, then of retinitis and finally of nephropathy or diabetic glomerulosclerosis. In a group of 70 such patients more than one-half were patients whose diabetes began under the age of 20 years; about one-third had diabetes which began between the 20th and 40th year; in the remainder, diabetes began shortly after the 40th year of age. Among the latter, diabetes was characteristically of the more severe type found in younger patients. The neuropathy consisted chiefly of the development of acute, painful neuritis involving the legs, but in some cases also caused the typical diabetic diarrhoea and in a few patients the typical pseudo-Charcot joints. The nervous involvement usually did not occur until diabetes had been present for from 5 to 15 years, but occasionally it was found at nearly the same time with the retinitis. The retinal lesions consisted of the retinal haemorrhages and exudates seen in diabetes, but usually advanced to severe retinitis proliferans. At the same time or soon thereafter were discovered albuminuria, oedema and hypertension of diabetic glomerulosclerosis. Death from uraemia resulting from renal failure occurred in nearly one-half these patients. Autopsies in a few cases showed the typical diabetic nephropathy characterized by the presence of the Kimmelstiel-Wilson lesions in the glomeruli, intensive arteriolar sclerosis, various degrees of chronic pyelonephritis and extensive atherosclerosis.

Shields Warren and Philip M. LeCompte propounded the theory that most of the pathologic lesions in diabetes may have a common denominator in a disturbance of polysaccharide metabolism.

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Diamonds. An increased output of 10% in 1951 brought the total to another new record high. Outputs are shown in Table I, as reported by the U.S. bureau of mines, the 1951 data being broken down to show the proportion of the total (83%) that was industrial stones.



SORTING newly mined diamonds at a jungle clearing in French Equatorial Africa in 1952 before shipping to the U.S. stock pile

Table I.—World Production of Diamonds

	(Thousands of carats)						1951
	1946	1947	1948	1949	1950	Total	
Angola	808*	799	796	770	539	751	32
Belgian Congo .	6,033	5,474	5,825	9,650	10,147	10,565	10,03
French Africa .	139	161	197	218	338	237	28
Gold Coast . .	653	852	850*	433	950*	1,600*	1,36
Sierra Leone .	559	606	466	494	655	476	31
South Africa . .	1,282	1,205	1,200*	1,254	1,748	2,256	1,46
S.W. Africa . .	164	179	201	280	488	478	9
Tanganyika . .	119*	92	148	192	195	109	5
Brazil	325*	275*	250*	250*	200*	200*	10
Others	53*	90*	115*	94*	40*	108	3
Total	10,135	9,734	10,047	13,635	15,300	16,780	14,00

*Estimated.

Table II.—U.S. Diamond Imports

	(Carats)			
	Rough	Cut	Industrial	Total
1946	1,044,517	604,638	4,705,118	6,354,222
1947	996,514	347,810	4,112,189	5,456,513
1948	909,871	388,499	10,648,250	11,946,620
1949	633,731	335,487	6,381,476	7,350,694
1950	673,699	492,741	11,201,045	12,367,485
1951	697,981	480,516	12,225,380	13,403,877

Total sales by the sales syndicate also made another record high, at £65,057,965, of which £46,780,632 was gem stones and £18,277,333 was industrial stones.

The stock of industrial stones, accumulated in the earlier years when industrial consumption was low, had been exhausted, and future industry demands would be met by current production.

United States Imports.—The dollar value of diamond imports in 1951 was the highest on record, with the exception of 1946.

The total value of imports rose from \$139,362,975 in 1950 to \$157,302,813 in 1951, compared with \$181,127,581 in 1946.

(G. A. Ro.)

Dietetics: see NUTRITION, EXPERIMENTAL.

Diplomatic Services: see AMBASSADORS AND ENVOYS.

Dirksen, Everett McKinley (1896–), U.S. senator, was born on Jan. 4 at Pekin, Ill. He studied at the University of Minnesota, Minneapolis, from 1913 to 1917 and served with the United States expeditionary forces during World War I. In 1932 he was elected to the U.S. house of representatives on the Republican ticket, and he served in the 73rd–80th congresses (1933–49). Although he attracted attention in congress for his heated criticism of the New Deal, he generally supported Pres. Franklin D. Roosevelt's foreign policy after Sept. 1941. In 1950 he was elected to the U.S. senate. On Jan. 12, 1951, Dirksen was appointed chairman of the senate Republican campaign committee. In the senate he frequently criticized U.S. involvement in the support or defense of foreign countries. In 1951 he voted against universal military training and service, against sending additional U.S. divisions to Europe and in favour of reducing foreign economic aid funds by \$500,000,000. In 1952 he opposed ratification of the Japanese peace treaty without modification, and also voted against the Bonn peace pact with western Germany and the North Atlantic treaty protocol which extended mutual defense agreements to the new European Defense Community (France, west Germany, Italy and the Benelux nations). Dirksen was a prominent supporter of Sen. Robert A. Taft's candidacy for the Republican presidential nomination in 1952 and made the nominating speech for Taft at the Republican convention, July 10.

Disabled American Veterans: see VETERANS' ORGANIZATIONS.

Disasters. During 1952 loss of life and property in disasters included the following:

Evacuation

- Jan. 10 Near Bangor, Wales. Irish air liner hit Moel (mountain) Siabod; 23 persons were killed.
- Jan. 19 Near Sandspit airport, British Columbia. Airlift plane with U.S. veterans returning from Japan and Korea fell into Pacific ocean; 36 were killed and 7 rescued. Search plane sent out the same day crashed into Tyler peak, Washington, killing three of eight air force men aboard.

APARTMENT HOUSE IN FLAMES at Elizabeth, N.J., Feb. 11, 1952, after a north-bound plane crashed into it taking a toll of more than 30 lives. It was the third crash in eight weeks involving planes arriving or departing from the nearby Newark airport

- Jan. 22 Elizabeth, N.J. Twenty-nine persons, including former U.S. secretary of war, Robert P. Patterson, were killed and 1 died later when air liner hit apartment homes while trying to land at Newark, N.J., airport; 7 of dead were residents of apartments hit.
- Feb. 4 Near Kikwit, Belgian Congo. Belgian air liner crash killed 15.
- Feb. 7 Near Yokota airport, Japan. Superfort crash killed 13 of U.S. crew and 3 or more Japanese passengers.
- Feb. 11 Elizabeth, N.J. Air liner taking off from Newark, N.J., airport crashed into apartment building, fatally injuring 33. This air disaster, the third in Elizabeth within two months, resulted in the closing of Newark airport.
- Feb. 16 Near Burgio, Sicily. British air liner hit mountain; 34 bodies were found, but only 31 passengers were listed on air line records.
- March 3 Nice, Fr. French air liner crashed after engine failure; 37 persons were killed, including U.S. ballet dancer Harriet Toby.
- March 12 Near New Braunfels, Tex. Two B-29 bombers collided in midair; 15 air force crewmen died.
- March 22 Near Frankfurt, Ger. Dutch air liner crashed in an attempted landing; 45 of 47 on board were killed.
- March 26 Moscow, U.S.S.R. According to unverified report, about 70 were killed when Russian air liner collided with air force plane over Tula airport.
- April 4 Near Mobile, Ala. Midair collision of two U.S. air force planes killed 15.
- April 5 Jamaica, L.I., N.Y. Cargo plane crashed into street, killing two crewmen and three persons on ground.
- April 9 Oshima Island, Japan. First accident since resumption of Japanese civilian air flights in Dec. 1951 claimed 37 victims when air liner crashed into Mihara volcano.
- April 11 San Juan, P.R. U.S. air liner fell into the harbour after take-off; 52 were killed. Seventeen survived, including the pilot, Capt. John C. Burn, husband of Jane Froman, singer.
- April 15 Spokane, Wash. B-36 bomber take-off crash killed 15; 2 lived.
- April 18 Near Los Angeles, Calif. Crash of nonscheduled air liner killed 29.



- April 29 Brazil. Air liner bound for New York city crashed in jungle; 50 persons died.
- May 28 Ft. Worth, Tex. Crash of B-36 bomber at Carswell air force base killed seven U.S. air force men and injured ten.
- June 5 Off Den Helder, Neth. Dutch jet fighter plane crashed into British minesweeper during NATO naval manoeuvres; pilot and 14 aboard ship were killed.
- June 24 Near Lakenheath, Eng. Crash of U.S. bomber killed 11 crewmen.
- July 11 Off Salvador, Braz. Brazilian air liner crashed into Atlantic; 5 persons died, 13 were missing.
- July 22 Marianna, Fla. Jet bomber exploded; four crewmen died and two children were killed in home by falling debris.
- July 22 Near Topeka, Kan. Crash of B-29 bomber killed all eight of crew.
- July 23 Kyushu Island, Japan. U.S. army transport crash killed five of crew and two women on ground.
- Aug. 12 Near Goiânia, Braz. Crash of Brazilian air liner killed 24.
- Aug. 25 Off western Sicily. British chartered air liner fell into Mediterranean; 7 persons were dead or missing; 50 were rescued by Italian fishermen.
- Aug. 25 Shreveport, La. Air force bomber crashed at Barksdale air force base, killing seven of eight-man crew.
- Aug. 26 Off Panama City, Fla. Fighter pilot mistakenly fired at air force bomber instead of a drone target plane during firing practice; bomber crashed into Gulf of Mexico with six of crew of eight reported lost.
- Sept. 6 Farnborough, Eng. R.A.F. jet fighter exploded over crowd at air show, killing 27 spectators and pilot John Derry and observer.
- Sept. 24 Saigon, Indochina. Crash of U.S. navy plane killed 13 French sailors aboard.
- Oct. 8 Near Portland, Ore. U.S. air force plane crash killed 11.
- Oct. 26 Luzon Island, Philippines. U.S. air force weather plane with 15 aboard disappeared in typhoon.

Fires and Explosions

- Jan. 7 Atlantic City, N.J. Fire on boardwalk caused damage estimated at \$4,000,000.
- Jan. 14 Stellarton, N.S. Coal mine blast killed 19.
- Feb. 2 Near Greensburg, Pa. Six were killed in coal mine explosion.
- April 19 Near Zwickau, Ger. (Soviet zone). Explosion in coal mine killed 47.
- May 23 Tahlequah, Okla. Fire caused by lightning killed nine children and one adult.
- Aug. 31 Salamis, Gr. Explosion at Greek naval base killed 14 and injured 40 or more.
- Sept. 5 Welkom, U. of S. Af. Truck loaded with dynamite exploded, killing 12.
- Oct. 31 Hillsboro, Mo. Fire in nursing home killed at least 18 persons; about 20 were injured.

Marine

- Jan. 9 North Pacific ocean. U.S. freighter "Pennsylvania" was abandoned by crew of 45 about 465 mi. northwest of Vancouver Island, Canada. There was no trace of ship or crew.
- Jan. 10 Off Lizard Point, England. U.S. freighter "Flying Enterprise" sank within 50 mi. of the southwest tip of England, after heroic 12-day effort of her captain, Henrik Kurt Carlsen, to save ship. Carlsen had ordered ship abandoned on

- Dec. 29, 1951, and remained on board alive until he was joined by a British seaman, Kenneth Dancy, a week later.
- Feb. 18 Off Cape Cod, Mass. U.S. tankers "Pendleton" and "Fort Mercer" broke apart in storm; crewmen were drowned.
- March 8-9 North sea. Storms claimed lives of more than 50 seamen.
- April 21 Off northeast Korea. Explosion of ammunition on U.S. cruiser "St. Paul" killed 30 seamen; ship was shelling North Korean coast at the time.
- April 26 Atlantic ocean. U.S. aircraft carrier "Was" collided with minesweeper "Hobson" during night manoeuvres; "Hobson" sank with loss of 176 men, including captain; 61 were rescued. "Wasp."
- May 25 Near Wilmington, Del. Collision of two tankers "Dodge" and "Michael," in Delaware river killed ten seamen.
- Sept. 3 Near Lucknow, India. About 80 were reported dead after overloaded boat capsized in Gangetic river.
- Sept. 9 Belgrade, Yugos. Ferryboat on Danube capsized; 86 persons were drowned.
- Sept. 24 Off Toulon, Fr. French submarine "La Sibylle" failed to surface after anti-submarine manoeuvres in Mediterranean; crew of 48 was lost.
- Oct. 22 Off Puerto Quintero, Chile. Chilean naval transport boat "Brito" exploded after running aground; 21 of crew died.

Miscellaneous

- March 6 Baltimore, Md. Temporary stands at SoHo Henie ice show collapsed, injuring approximately 275 persons.
- April 6 Caracas, Venez. Panic in church following false fire alarm killed 53.
- May 10 Belle Ville, Arg. Wall of sports arena collapsed; more than 25 were killed, 100 injured.

Natural

- Jan. 3 Eastern Turkey. Sixty-two persons were killed and 250 injured in an earthquake.
- Jan. 12-19 California and Nevada. Snowstorms and floods killed more than 20. Southern Pacific train was more than 200 aboard was snowbound Donner pass, Sierra Nevada, for three days.
- Jan. 22-23 Minnesota, North Dakota, South Dakota. More than 20 persons died in blizzards.
- Feb. 18-19 New England. Almost 50 died in snowstorms.
- March 4 Hokkaido Island, Japan. Earthquake followed by tidal waves killed approximately 30 and injured almost 200.
- March 21-22 Southern U.S.A. Tornadoes killed almost 100 and injured an estimated 2,500 in Missouri, Arkansas, Tennessee, Kentucky, Mississippi, Alabama. More than 45 were killed in Judson, Ark., which was almost completely razed by tornado.
- April 3-30 Missouri-Mississippi valleys, U.S. Flooding of Missouri and Mississippi rivers and tributaries caused damage estimated at more than \$3,000,000 in ten states.
- July 2-3 Philippine Islands. About 85 persons were reported dead and more than 100 missing in typhoons; 10,000 were left homeless.
- July 6-12 Western Japan. Eighty-four persons were reported killed, 92 missing and 94 injured as a result of rainstorms and landslides.
- July 21 California. Earthquake with epicentre near Tehachapi, Calif., killed 12 and injured several hundred.

- ig. 16 Lynmouth, Eng. Flash flood killed about 20 persons; another 20 were missing.
- ig. 22 Bakersfield, Calif. Earthquake killed two and caused damage estimated at \$20,000,000.
- ig.-Sept. Southeastern Mexico. Month-long floods left more than 100 dead and caused \$25,000,000 damage.
- pt. 6 Near Chamba, Himachal Pradesh state, India. Postmonsoon storm in the Himalaya mountains was reported to have taken the lives of 350 religious pilgrims.
- pt. 21 Tebessa, Alg. Flash flood caused about 25 deaths.
- t. 15 Tabasco state, Mex. More than 40 persons were reported dead in floods, which also destroyed \$35,000,000 worth of crops.
- t. 20-22 Indochina. Typhoons and tidal wave killed more than 500 along Indochinese coast; about 350 of casualties were in Panthiet port.
- t. 21-22 Philippine Islands. Typhoon struck central Philippines, killing more than 400; more than 350 were missing.
- t. 22 Southern Turkey. Earthquake which shook region around Adana killed at least 18.
- ilway
arch 4 Near Rio de Janeiro, Braz. Collision of two trains 20 mi. from Brazilian capital was reported to have killed about 120 persons.
- ay 17 Near Adana, Turk. Train jumped tracks, killing 26.
- ay 18 Near Bikaner, India. Train wreck killed 45, injured 35.
- ay 28 Madrid, Sp. Trolley plunged into river, killing about 30 and injuring 50.
- ly 9 Near Rzepin, Pol. Unconfirmed report said that about 160 Soviet troops, including a general, were killed when train plunged down an embankment into a lake.
- t. 8 Harrow-Wealdstone, Eng. Two express passenger trains crashed into commuter train; 112 were killed or died later.
- t. 20 Near Ladysmith, U. of S. Af. Train derailment killed 25.
- fficc
n. 1 United States. About 350 persons were killed in traffic accidents during four-day period ending New Year's day.
- n. 26 Near Puebla, Mex. Bus crash into ravine killed 49.
- ril 8 Near Catemaco, Mex. Truck carrying holy week pilgrims plunged into ravine, killing 40 or more.
- ay 25 Near Chonomas, Mex. More than 25 persons were killed when a truck turned over.
- ly 4-6 United States. A total of 366 persons died in traffic accidents over Independence day week end.
- ig. 4 Near Waco, Tex. Two passenger buses crashed head-on, killing 28. This was highest death toll of any bus accident in U.S. history.
- pt. 2 Near Chiclayo, Peru. Truck fell into ravine; more than 20 persons were killed.

were: local expense \$38,987,800, and missions and benevolence \$12,362,216, a total of \$51,350,016.

The 1952 annual assembly of the International Convention of Disciples of Christ was held in Chicago, Ill., May 19-23, with a registered attendance of 4,885. Howard Thomas Wood of Memphis, Tenn., was elected president. Mrs. Charles F. Bailey, Ballinger, Tex., John Paul Pack, Seattle, Wash., and W. B. Pearce, Shreveport, La., were elected vice-presidents. Gaines M. Cook, executive secretary, was re-elected for a six-year term. The American Baptist convention was held simultaneously in the same city. Three joint sessions, highlighting common beliefs, concerns and fellowship, were held, and a united communion service was attended by 11,000 worshippers from both groups.

The Disciples of Christ were in 1952 members of the World Council of Churches, the National Council of Churches of Christ in the U.S.A. and the American Conference on Church Union. They were also members of the World Convention of Churches of Christ, meeting at intervals of five years. The 1952 session was held at Melbourne, Austr., Aug. 5-10.

Missionary work during the year was conducted in ten foreign fields as follows: Africa, Argentina, India, Jamaica, Japan, Mexico, Paraguay, Philippines, Puerto Rico and Thailand, with 213 missionaries and 2,319 national leaders. The United Christian Missionary society, a board of missions and education located in Indianapolis, Ind., is the major administrative office for missions, Christian education and church development.

The pension fund of Disciples of Christ reported a total active membership of 4,313, with assets of \$13,513,910.

National headquarters are located at 516 K. of P. building, Indianapolis, Ind.; Gaines M. Cook was executive secretary during 1952; Gertrude Dimke, recording secretary; Robert L. Lewis, assistant secretary. (See also CHURCH MEMBERSHIP.) (G. M. Ck.)

Displaced Persons: see IMMIGRATION AND EMIGRATION; REFUGEES.

District of Columbia: see WASHINGTON, D.C.

Divorce: see MARRIAGE AND DIVORCE.

Dodecanese: see GREECE.

Dog Shows: see SHOWS.

Dominica: see WINDWARD ISLANDS.

Dominican Republic. The Dominican Republic occupies 19,129 sq.mi., about two-thirds of the total area of the island of Hispaniola. Pop. (census Aug. 6, 1950) 2,121,000, (1951 est.) 2,167,000; that of the capital, Ciudad Trujillo (known from the beginning of the 16th until the second quarter of the 19th century as Santo Domingo, whence the name of the nation), 181,000 (with about 250,000 in the metropolitan area); and that of the principal provincial cities, Santiago de los Caballeros, 56,000; San Pedro de Macoris, 20,000; San Francisco de Macoris, 16,000; San Felipe de Puerto Plata, 14,000; Barahona, 14,000; and La Romana, 11,500. Presidents in 1952: until Aug. 16, Rafael Leónidas Trujillo y Molina; after that date, Héctor B. Trujillo y Molina.

History.—More than two decades of uninterrupted rule by Gen. Rafael Leónidas Trujillo, either as president or commander of the armed forces, ended in 1952 with the election of his younger brother, Gen. Héctor B. Trujillo, as president on May 16, for the five-year term commencing Aug. 16. The new president had served many years as minister of war, navy and aviation.

Agricultural prosperity continued unabated. Again, large sugar and coffee crops were sold in Europe; and Dominican-European trade continued to grow more rapidly than that between the Dominican Republic and the United States. Foreign investment in commerce and industry continued to grow. The number of ships

Disciples of Christ. The world membership of this movement for Christian unity in 1952 was 945,607; the total membership in the United States and Canada was 1,802,157. The total number of churches in the world was 8,739, and in the U.S. and Canada, 7,915. Illinois churches reported the largest number of baptisms with a total of 4,928 for the year; Indiana churches, 4,768 baptisms; Texas churches, 3,593 baptisms. Cash receipts reported for the U.S. and Canada

and of aircraft calling at Dominican ports of entry showed a small increase, as did the volume of tourist expenditure. Public works programs were advanced at a reasonable rate. Price levels showed a tendency to rise, but wage levels changed only slightly. No significant increase in unemployment was noted. The management of the public finances continued to follow the pattern of previous years—the avoidance of new indebtedness, the accumulation of cash reserves and a moderate tax policy.

The foreign relations of the Dominican Republic in 1952 were marked by no unpleasantness with neighbour states. The fall of Carlos Prío Socarrás in Cuba, in March, terminated years of tension that had begun in 1944. The return to power in Cuba of Gen. Fulgencio Batista was expected to assure accommodation in Caribbean affairs. Relations with Haiti continued cordial.

(C. E. Mc.)

Education.—In June 1951 there were 2,749 schools (including 1,208 emergency schools), all of which were maintained by the state except 107 semiofficial (state-aided) and 95 private schools. The total number of pupils was 262,499. The University of Santo Domingo had 2,254 students and 172 faculty members. The 1951 budget allocated \$4,629,398 for education. The 74 motion-picture theatres had a seating capacity of 30,963.

Finance.—The monetary unit is the peso, officially pegged at par with the U.S. dollar. The 1952 budget provided for revenue of \$82,796,500 and expenditure of \$82,749,503. The internal debt amounted to \$22,987,361 on Dec. 31, 1951; there was no external debt. Notes in circulation on Aug. 31, 1952, totalled \$26,940,000; gold reserves \$12,100,000; checking accounts in commercial banks \$36,500,000; government deposits \$23,090,000; time deposits \$13,900,000. The cost of living index at Ciudad Trujillo stood at 110 in Sept. 1952 (1948=100).

Trade and Communications.—Exports in 1951 were valued at \$108,454,681; imports were \$51,200,000. Leading exports were sugar (47%), coffee (16%), cacao (15%), tobacco (5%) and chocolate (4%). Leading customers were the United Kingdom (46%), the U.S. (43%) and the Netherlands and possessions (3%). The U.S. was by far the leading supplier; others were the Netherlands Antilles, the United Kingdom, Germany and Japan.

There were 170 mi. of public railway, all owned and operated by the government, and about 650 mi. of industrial railway, operated mainly by the sugar companies. In 1949 the mileage of surfaced highway was about 500; that of all roads was about 3,000. Motor vehicles in 1948 included 3,124 automobiles and 2,390 trucks. A television station began operation in 1951.

Agriculture.—In the 1951-52 season, a record total of 658,000 short tons of sugar and 26,559,000 gal. of blackstrap molasses (preliminary figures) was produced; in 1951, 531,713 tons of sugar were exported, almost entirely to the United Kingdom. Other important crops in 1951-52 were coffee (400,000 bags of 132 lb. each); cacao (30,000 short tons); rice (66,000 tons); tobacco (1951, 22,550 tons). The livestock census of 1950 (preliminary figures) showed 887,000 cattle and 1,140,000 pigs.

Manufactures.—In 1950 there were 3,412 industrial establishments with capital of \$119,636,855 (of which the sugar industry accounted for more than two-thirds), 44,484 employees and gross output valued at \$120,471,745. Important manufacturing enterprises in 1952 included 16 sugar mills, a large chocolate plant, an industrial alcohol plant, 2 cotton textile mills, 2 breweries and a cement plant.

(J. W. Mw.)

Donaldson, Jesse M. (1885-), U.S. postmaster general, was born on Aug. 17 near Shelbyville, Ill., and attended school at Oconee, Ill., and at Shelbyville. He began teaching school in the vicinity, and eventually left his teaching position to accept a post as letter carrier in 1908. He held in succeeding years various positions of increasing importance in the postal service, becoming, by 1945, first assistant postmaster general. He became postmaster general in 1947, the first post-office career man to attain this position.

Under his administration in 1951 an investigation was launched into the "sale" of postal jobs in Mississippi, as a result of which the post office dismissed or filed charges against 56 employees. In October congress passed legislation to raise postal rates by about \$117,000,000 a year and to institute postal pay increases amounting to about \$250,000,000 a year. In July 1952 Donaldson urged that second- and third-class mail rates be increased to offset a post-office deficit estimated at more than \$600,000,000 for the fiscal year 1953.

Donations and Bequests. New factors bearing on philanthropy raised the prospect that the total dollar volume of giving would be increased



A RED FEATHER SERVICE at work in Chicago, Ill., where child-care institutions, foster homes and day nurseries for more than 7,500 youngsters depend on local community support in 1952

during 1952. However, because of increased costs, there was little indication that philanthropic agencies in general would finish the year without some financial stress.

Congressional action increasing the rate of allowable personal income tax deduction for contributions from 15% to 20% was expected to raise materially the level of individual giving.

Corporate giving was apparently on a greater scale than ever before. Organized efforts to obtain corporation gifts were rewarded by a greatly increased willingness on the part of corporations to give to projects which would benefit their businesses or their employees.

Preliminary indexes of current giving indicated that the total of philanthropy might continue upward, with a possible total of \$4,300,000,000 in 1952 compared with the estimated total of \$4,250,000,000 in 1951. This prospect was borne out by the study, made annually by the John Price Jones Company, Inc., of announced gifts in ten major cities, which showed total gifts of \$262,138,442 in those cities for the first eight months of 1952, compared with \$229,197,640 in the same months in 1951.

Another index was found in the reports of gifts to 51 leading institutions of higher education. These colleges and universities reported total contributions in 1950-51 of \$88,235,000, an increase of 14.35% over the previous year.

Community chest goals offer another test of the prevailing estimate of the extent of philanthropy. Five hundred and one community chests, which were raising their 1953 budgets in 1952, announced aggregate goals of \$217,759,139. These same chests had aggregate goals of \$203,416,552 a year earlier.

The movement for closer organization of appeals, through federation, went forward during the year. In the welfare field numerous national agencies federated their appeals with those of the community chests. In the educational field, there were more than a score of alliances of colleges in individual states created for the purpose of joint appeal to the business interests of the area.

Little change was evident in the distribution of gifts. Education and organized social work continued to receive a greater portion of reported philanthropy.

The year 1952 appeared to be one of fine response by the public to philanthropic appeals, but a year of real struggle for philanthropic agencies to make ends meet even with increased giving.

(J. P. J.)

Great Britain.—Among big public appeals opened during 1952 the most important was the King George VI National Memorial fund, launched by the lord mayor of London and the prime minister on Oct. 4. In a broadcast appeal Winston Churchill said the memorial would take the form of a statue and of a scheme to benefit both young and old. Within four days more than £100,000 had been received.

On June 19 the Anglican Church assembly launched an appeal for £4,000,000 for the preservation of historic churches. Response to the national appeal for the Lynmouth flood relief fund in August far exceeded the £250,000 expected; when the appeal closed in October, more than £1,000,000 had been received.

On June 6 an appeal was made for £120,000 for a Braille centenary fund to expand the production of books for the blind. On June 20 a cheque for more than £150,000 was presented to Cambridge university, the proceeds of the Field Marshal Jan Christiaan Smuts memorial appeal for the endowment of commonwealth studies.

In March Ernest E. Cook, of Bath, formed a trust to devote the incomes of seven of his estates to educational purposes, and also gave the National trust the largest sum it had ever received.

Grants to British institutions from the Rockefeller foundation totalled nearly £90,000; grants were also made to 12 other European countries. It was announced in the seventh report of the Nuffield foundation that more than £1,500,000 had been allocated during the preceding three years. (See also COMMUNITY CHEST; SOCIETIES AND ASSOCIATIONS, U.S.)

Donnelly, Walter Joseph (1896—), U.S. diplomat, was born on Jan. 9 at New Haven, Conn. After service in the U.S. army in 1917–18, he studied at Georgetown and George Washington universities in Washington, D.C., and at the University of Caracas in Venezuela. His first government position was as a commercial agent with the U.S. department of commerce (1923), and he later served as trade commissioner or commercial attaché in a number of foreign posts from 1924 to 1945. In the latter year he was named counsellor of the U.S. embassy in Panamá, and in 1947 ambassador to Costa Rica and (later the same year) Venezuela.

On Aug. 24, 1950, Donnelly was named U.S. minister to and high commissioner for Austria and was advanced to the rank of ambassador to that nation on Jan. 10, 1952. On July 18, 1952, he was appointed U.S. high commissioner for Germany to succeed John J. McCloy, effective Aug. 1.

Douglas, Paul Howard (1892—), U.S. economist and senator, was born on March 26 in Salem, Mass., and spent his boyhood on a farm in Maine. In 1913 he graduated from Bowdoin college, Brunswick, Me. After doing graduate work at Columbia and Harvard universities, he began teaching at the University of Illinois, Urbana. He was a labour disputes arbitrator for the Emergency Fleet corporation in 1918 and 1919, and in the latter year he returned to teaching, first at the University of Washington, Seattle, and later at The University of Chicago. He wrote books on economic theory and served on a number of boards and commissions dealing with such subjects as unemployment, utility rates, old-age pensions and labour-management relations.

Douglas was an alderman of the city of Chicago from 1939 until 1942, when he enlisted as a private in the U.S. marine

corps. He was wounded and spent 14 months in hospitals, leaving the service as a lieutenant colonel. In 1948 he was elected U.S. senator from Illinois.

In 1951 Douglas was chairman of a senate labour subcommittee investigating ethics in government which helped uncover irregularities in federal offices. Douglas opposed Pres. Harry S. Truman's nominations for two federal judgeships in Illinois, and on Oct. 9, 1951, the senate supported Douglas by rejecting the president's appointments. Douglas applauded President Truman's announcement of March 29, 1952, that he was withdrawing from the presidential race and shortly thereafter endorsed Sen. Estes Kefauver as the Democratic candidate. Douglas acted as a chief strategist for Kefauver during the latter's unsuccessful bid for nomination at the Chicago Democratic convention in July.

Draft: see SELECTIVE SERVICE.

Drama: see THEATRE.

Dress: see WOMEN'S FASHIONS.

Drew, George Alexander (1894—), Canadian political leader, was born on May 7 at Guelph, Ont., and educated at Guelph Collegiate institute, Upper Canada college and the University of Toronto. He became leader of the Ontario Conservative party in 1938, member of the Ontario legislature in 1939 and premier of Ontario and minister of education in 1943. On Oct. 2, 1948, he was chosen leader of the national Progressive Conservative party, and was elected to parliament on Dec. 20 of that year. In the 1949 general election he retained his seat in Carleton. As leader of the opposition in parliament, he was the government's chief critic, and sought stricter parliamentary control of government costs, increased efficiency in government services, substantial reduction of nondefense expenditures, reform of parliamentary procedure, a general broadening of social security legislation on a contributory basis, the appointment of a royal commission to advise upon the reorganization of the civil service and the creation of a parliamentary committee to examine all defense expenditures. He took the stand that Canada was bound to honour its commitments to the United Nations.

During 1952 Drew proposed emergency price controls, urged increased industrial production and demanded speeded-up housing construction; he visited the United Kingdom and urged more industrial co-operation between the two countries. Upon the eve of the autumn session of parliament he toured western Canada. (C. Cy.)

Drought: see METEOROLOGY.

Drug Administration, U.S. The Federal Security agency's Food and Drug administration continued its campaign against illegal sales of prescription drugs in the fiscal year 1952. Such actions accounted for 80% of the criminal cases alleging drug violations. Barbiturates or amphetamines were usually involved, often combined with sales of sulfa drugs, penicillin, potent hormones or thyroid. The heaviest penalty imposed for illegal sales was a two-year prison sentence for a druggist convicted of supplying barbiturates to teen-agers. New prescription drug legislation, which went into effect in April 1952, clarified the responsibilities of those concerned and provided more directly for federal regulatory controls.

Late in June 1952, reports were received of serious blood disorders and a number of fatalities associated with the antibiotic drug chloramphenicol. Hundreds of medical case histories were collected and the Medical Sciences division of the National Research council was asked to evaluate them. On the recom-

mendation of these experts, the labelling of chloramphenicol was revised to caution physicians not to use it indiscriminately or for minor infections, and to make appropriate blood tests.

Manufacturers made 20 recalls of drug products during the year—13 voluntarily and 7 at the request of the Food and Drug administration. Nine were recalled because they were below the strength declared on their labels and three because they were mislabelled as other drugs. Eight involved other serious errors, such as a dangerous lack of potency, lack of sterility or contamination with a dangerous chemical.

The operation of treatment centres is outside of federal jurisdiction as long as activities remain localized. However, patients are often attracted from other states; when they return home, orders for misbranded medicines follow as original supplies are used up. Cancer and diabetes are prominent among the diseases treated, and patients may abandon or delay medical care while pinning their faith on untrained practitioners. The operator of one such "cancer clinic" was enjoined; one closed after a fine of \$2,000; a third was prosecuted for violating an injunction prohibiting interstate shipment of his "cure."

Therapeutic devices, such as X-ray machines, clinical thermometers, surgical dressings and hypodermic needles, are subject to the provisions of the federal Food, Drug, and Cosmetic act relating to devices. Besides such devices which require some supervision as to their sterility or safety, there are many contraptions marketed with false and misleading claims, some of them also dangerous to health because of their method of operation. Among devices seized were silver "cosmic ray" locket, sold for \$250 to \$750, according to size, which were promoted as cures for high or low blood pressure and for insanity; and a \$1,600 colonic irrigator sold to chiropractors with claims for treating all types of disease.

New-drug applications received during the fiscal year 1952 numbered 395, including 124 for veterinary use. Widespread interest followed the release of the new drug used in tuberculosis treatment, isonicotinic acid hydrazide. Other significant drugs permitted to be marketed were purified corticotropin preparations; two radioactive products; blood plasma extenders; an antagonist of certain narcotics; an antimalarial drug; hypotensive agents; aminopterin for acute leukemia therapy in children; and some new antiepileptic drugs.

During the fiscal year, 274 batches of drugs composed wholly or partly of insulin and 17,433 batches of antibiotics were certified after testing for purity, potency and stability. Also certified were 3,839 batches of coal-tar colours, representing 4,023,710 lb., for use in foods, drugs or cosmetics.

A total of 2,309 factory inspections and the examination of 6,692 samples of interstate shipments of drugs and devices resulted in 217 seizures and the institution of 108 criminal prosecutions and 4 injunctions in the federal courts. Examination of import shipments resulted in detention of 1,054 lots of drugs and devices failing to comply with U.S. requirements. (See also FEDERAL SECURITY AGENCY; NARCOTICS AND NARCOTIC TRAFFIC.)

(C. W. Cr.)

Drugs: see AGRICULTURAL RESEARCH ADMINISTRATION; ALLERGY; BIOCHEMISTRY; BLOOD, DISEASES OF THE; CHEMISTRY; CHEMOTHERAPY; DERMATOLOGY; DRUG ADMINISTRATION, U.S.; ENDOCRINOLOGY; MEDICINE; NARCOTICS AND NARCOTIC TRAFFIC; STOMACH AND INTESTINES, DISEASES OF THE; TROPICAL DISEASES; VETERINARY MEDICINE. See also articles on specific diseases, such as CANCER; DIABETES; etc.

Drug Traffic: see NARCOTICS AND NARCOTIC TRAFFIC.

Drunkenness: see INTOXICATION, ALCOHOLIC.

Dry Point: see ETCHING.

Duke Endowment: see SOCIETIES AND ASSOCIATIONS, U.S.

Dulles, John Foster (1888–), U.S. attorney and international law expert, was born Feb. 25 in Washington, D.C., graduated from Princeton university, Princeton, N.J., in 1908 and was awarded a law degree at the George Washington university law school in 1911. As a specialist in international law he assisted the U.S. state department in Panamá, where he arranged for that republic's war declaration in 1917. In World War I he served as a major on the army general staff, and after that war went to the Paris peace conference as U.S. counsel on reparations and other financial matters. He drafted several of the treaty clauses. Between the two wars he became a prominent international lawyer. After a trip to Europe in 1937 he underwent, by his own account, a "spiritual change," and became convinced of the need for a Christian ethical basis to win a lasting peace. He was a member of the U.S. delegation to the 1945 conference to organize the United Nations at San Francisco, Calif., and was high in U.S. councils at many postwar international conferences.

In 1951, as U.S. ambassador-at-large, he travelled to both Asia and Europe to arrange for agreement among the World War II Allies, the U.S.S.R. excepted, to a peace treaty with Japan. For these measures he was repeatedly denounced by high soviet officials, but he won general support for the treaty terms, and it was signed in San Francisco on Sept. 8 by Japan and 48 non-Communist nations, with Dulles one of the members of the U.S. delegation.

Dulles resigned from his state department post on March 25, 1952. Both Robert A. Taft and Dwight D. Eisenhower declared their belief that Dulles could state Republican foreign policy to their mutual satisfaction, and he accordingly was chosen to prepare the Republican platform plank. This plank, adopted by the Republican convention on July 10, was generally conceded to be a skilful compromise on the question of extent of U.S. aid to foreign countries. After the November elections, President-elect Eisenhower named Dulles to the post of secretary of state in the coming administration.

Durkin, Martin P. (1894–), U.S. labour union official, was born in Chicago, Ill., on March 18. He attended school in Chicago and in 1911 began his apprenticeship as a steam fitter. He became a journeyman in 1917 and later that year entered the army, where he served for 22 mo. He was elected assistant business manager of the Steam fitters' Protective Association Local Union 597 (1921) and vice-president of the Chicago Building Trades council (1927), and was appointed Illinois director of labour (1933). He was dismissed from the latter post by Gov. Dwight Green in Sept. 1941 and then went to Washington, D.C., as secretary-treasurer of the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada. In 1943 he became general president of that American Federation of Labor union. He was also sixth vice-president of the A.F. of L. On Dec. 1, 1952, President-elect Dwight D. Eisenhower named him secretary of labour in the coming administration.

Dutch Overseas Territories: see NETHERLANDS ANTILLES; NETHERLANDS NEW GUINEA; SURINAM.

Dyestuffs. The recession in the domestic consumption of U.S. dyes evidenced during the final quarter of 1951 was carried along well into 1952. The activities of the first half of the year showed a decline of approximately 10% from the previous year's figures induced by a softening in consumer demand and the concomitant carrying of above average inventories. A definite improvement became evident in

August and, from all indications, the ground lost would be regained at the year's end. The consumption of U.S. dyes in the export market fell off sharply with little immediate hope for recovery, primarily because of the inability to compete with foreign producers on a cost basis and the uncertainty of dollar exchange. Prices of U.S. dyes remained stable with a few downward revisions. Defense requirements continued drawing heavily on several of the vat colours and their production paralleled the high level established in former years.

Problems pertaining to dyeing the newer synthetic fibres were still present. The industry was usually able to overcome these obstacles by providing colours and formulas designed to meet specific chemical and technical requirements. Research was concentrated upon the development of new colours with outstanding fastness and simplified working properties. Study of application techniques resulted in numerous improvements in processing methods and equipment design that were placed at the disposal of consuming industries.

Preliminary figures issued by the United States tariff commission showed that the production of all types of dyes in 1951 mounted to 185,681,000 lb., 5% less than the 1950 output of 195,713,000 lb. Sales of all dyes in 1951 totalled 158,872,000 lb. valued at \$174,405,000, compared with 188,382,000 lb. valued at \$190,786,000, a decrease of 16% in quantity and 8.6% in value. The unit value of all dyes sold rose to \$1.10 per pound compared with \$1.01 in 1950, the differences being primarily because of increased production of a number of higher priced dyes. As in preceding years, vat colours still maintained the lead position in both production and sales, accounting for 36.5% of the 1951 production and 35.9% of the poundage sold. Direct dyes represented 20%, sulphur dyes 11.5% and acid dyes 10%.

Four classes of dyes accounted for 82% of the total production of all dyes: azo dyes for 36%, anthraquinone vat for 22%, indigoid and thioindigoid for 13% and sulphur dyes for 11%. The anthraquinone vat colour group exceeded the 1950 production by 16%, indicating a continuing trend toward quality in colour, azo dyes fell off 9%, indigoid were down 26% and sulphur colours off 11%. Two low-priced dyes, indigo and sulphur black, were also 22% and 17% below the 1950 figures.

Sales of vat dyes, other than indigo, were valued at \$53,757,000, direct dyes \$37,221,000 and sulphur dyes \$6,713,000, the latter being exceeded in total value by the acetate, acid, azoic, basic and chrome dyes.

Dye imports in 1951 represented foreign invoice value of 6,300,000 compared with \$4,100,000 in 1950. Germany supplied 49%, Switzerland dropped to 44% and the United Kingdom supplied 7%. (A. G. BR.)

Other Countries.—The dyestuffs manufacturing industries of most countries in 1952 were affected by the recession in consuming trades, particularly textiles, and the decline in sales was aggravated by earlier events. Consumers had previously bought in excess of requirements, and when their own trades began to fall off they preferred to draw on their accumulated reserves rather than to buy further stocks of colour. Toward the end of 1952, however, the dyestuffs manufacturers began to share in the general improvement in trade. One interesting indication of changed circumstances was the decision of the British government in September to abolish most of the restrictions on the export of dyes imposed in 1948. Another factor influencing trade in dyestuffs was the increasing competition from western Germany. Exports of dyes from the German Federal Republic increased from 12,700 metric tons in 1950 to 20,300 metric tons in 1951 and from U.S. \$40,700,000 to \$69,600,000 in value.

Perhaps the most important event in the world dyestuffs industry in 1952 was the opening of a large-scale manufacturing plant in India. In March a factory was opened at Bulsar, mid-

way between Bombay and Ahmedabad, with the aim of producing enough of the country's most-used dyestuffs to meet the demands of textile, paper and other industries. The range of dyes would be enlarged as the need arose. It was estimated that at the outset the plant would save India \$500,000 in foreign exchange. Production at the start was to be 4,000,000 lb. of dyes a year. The nominal capital was equal to U.S. \$3,500,000.

An International Dyeing association, with headquarters in Paris, was founded in May. The inaugural meeting was attended by representatives of the industry from Austria, Belgium, France, western Germany, Italy, the Netherlands and Switzerland.

(L. E. MS.)

Ear, Nose and Throat, Diseases of.

During 1952 increasing attention was directed toward the effects of environmental and industrial noise on hearing acuity. Meyer S. Fox discussed the medical, economic and social aspects of industrial noise in 1952. The organ of hearing may be affected as the result of noise exposure in several ways: (1) by suffering loss of function; (2) by developing a state of abnormal sensitiveness; and (3) by acquiring special tolerance to the noise irritant.

It was learned that the factors which influence the degree of hearing loss are: (1) the intensity and loudness of the noise; (2) the frequency spectrum of the noise; (3) the period of exposure; (4) individual susceptibility to acoustic trauma; (5) age of the subject; (6) previous ear disease; (7) the character of the surroundings in which the noise was produced; (8) distance from source; (9) position of each ear with respect to sound waves.

Measures being taken for the control of industrial noise included: (1) surveys of noisy industrial areas; (2) pre-employment audiometric and otologic studies of employees; (3) audiometric studies of employees exposed to hazardous noise; (4) the establishment of quantitative standards for evaluating hearing loss; (5) the use of pre-employment selectivity tests to discover noise-susceptible persons; and (6) the development of procedures to reduce or eliminate noise, by redesigning machines and tools, by creating noiseless industrial processes, or by the use of earplugs and ear defenders.

Dizziness.—Dizziness is one of the commonest complaints presented to the physician. Various terms are used by patients to describe their dizziness, such as vertigo, faintness, unsteadiness, imbalance, rocking, staggering, blackout, drunkenness, swaying, insecurity, weakness, waviness, uncertainty, giddiness, light-headedness and the like. Since a variety of complaints, feelings and conditions are covered by the term "dizziness," Nicholas Torok developed the old question of what the patient actually means when he complains of dizziness.

Numerous classifications of the different types of vertigo had been formulated. It had been classified on a physiological or pathophysiological basis (spontaneous, reactive, experimental, vestibular); based upon the underlying pathology within the vestibular system (labyrinthine, peripheral, central); based upon the dominant psychic impression (sensory, tactile); in terms of the organ which was presumed to be the primary source (aural, cardiac, gastrointestinal); in accordance with general pathologic conditions where dizziness is a rather common accompanying symptom (arteriosclerotic, neurasthenic, hysteric); etc.

Dizziness is not merely a symptom but a varied multiplicity of sensations and impressions. Definitions and classifications are indispensable in the study of the phenomenon but are of little help in the understanding and, therefore, assistance of the patient. Torok believed that the concept concerning dizziness as a clinical complaint should be widened. In the final analysis, the dizzy sensation is a psychic phenomenon. The dizzy

reaction is under the influence of the whole personality, and variations of behaviour may be manifested accordingly. The most significant approach to the understanding of dizziness is through personal contact with the sufferer. The expressive power of the language on the subject is poor. The history is as important in the evaluation of the complaint as all the possible objective findings.

Obviously, treatment is based upon a correct diagnosis, with removal of the cause and alleviation of the symptom being the prime objectives. In some cases immediate symptomatic treatment is desirable to alleviate severe vertigo and associated symptoms. Other cases may require more vigorous medical or surgical approaches to achieve a cure.

Cancers of the Head and Neck.—Cancer of the head and neck comprises from 12% to 14% of all cancers of the body. If cancer of these areas is observed, identified and treated early, the outlook or prognosis compares favourably with that of any other malignant growth. According to Daniel S. Cuning and Fredrick M. Turnbull, early recognition and accurate diagnosis are of paramount importance. A complete examination calls for visualization of the nasal passages, mouth, cheeks, nasopharynx (back of the throat and nose) and larynx, aided by X-rays of the head and neck and biopsy (microscopic) study of any suspicious tissue for early positive diagnosis. The biopsy or tissue proof of a disease is the final procedure in diagnosis. A negative biopsy does not mean that the patient is free from carcinoma but that the specimen submitted to the pathologist did not show cancer. Several pieces, or in most cases the entire lesion with some normal tissue around it, should be sent to the pathologist.

The treatment of cancer, once limited to the use of surgery, X-rays and radium, was expanded in recent years. New anticancer drugs were developed, and hormones and radioactive isotopes were applied to the therapy of malignant disease. These new agents represented valuable additions to the therapeutic program, but the optimistic publicity that accompanied their use tended to obscure several facts. In the first place, most of these substances had a relatively narrow range of therapeutic activity. Moreover, while these agents might prolong life and make it more comfortable, they were for the most part palliative rather than curative. Permanent cures were still achieved largely with surgery or external irradiation or both, administered to patients with early lesions that had not yet metastasized widely.

The search for truly curative anticancer agents with broad ranges of therapeutic activity continued, but, until such agents were found, surgery and irradiation would remain the mainstays of therapy for most types of malignant lesions.

Cancer of the lip usually occurs on the lower lip and is seen from the fifth decade on, but may occur earlier. The biopsy and the removal of the entire lesion may be done at the same operation. A simple V excision through the whole lip about 1½ cm. away from the lesion usually suffices to cure early cancer of the lip, or irradiation may be effectively employed. If the submental glands are involved, a bilateral supraomohyoid neck dissection is indicated.

The buccal mucosa not only takes in the area over both cheeks, but includes all the mucous surface of the mouth. This means that the inspection for cancer of the buccal mucosa should include the cheek, the floor of the mouth, soft and hard palate, the buccal alveolar region and the gums. Recognition of oral leukoplakia and its importance is a paramount responsibility on the part of the dentist. Fulfilling of this obligation to the patient requires a basic familiarity with the nature of the lesion and all the aids to diagnosis previously discussed. Realization of the possible seriousness of outcome should be tact-

fully impressed upon the patient in order to secure maximum co-operation in the plan of treatment. Initial treatment of oral leukoplakia involves elimination of all possible local and general irritating factors. This should be followed by specifically indicated topical medication. Surgical or irradiation measures are called for if the affected area does not respond to medication or if clinical appearance and biopsy indicate the lesion is assuming malignant qualities.

Cancer of the tongue occurs mostly in men, but is seen occasionally in women. The treatment consists of adequate surgery occasionally including the mandible.

Cancer of the larynx also occurs most commonly in the male. Any case of a patient complaining of hoarseness should be investigated. A biopsy is obtained by special techniques of direct laryngoscopy. X-ray or removal of one cord in early lesions and the complete extirpation of the larynx when more advanced are recommended.

Lesions in the area of the nasopharynx, pharynx and hypopharynx may not be suspected until a developing mass appears in the neck. These types of tumours are best treated by X-rays or radium.

Cancer of the nasal sinuses is to be suspected when nasal blockage and recurring masses in the nose reveal malignant change. The treatment consists of complete removal of the upper jaw on the involved side, followed by irradiation. (See also HEARING.)

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Earnings, Company: see BUSINESS REVIEW.

Earthquakes: see DISASTERS; SEISMOLOGY.

East Africa, British: see BRITISH EAST AFRICA.

East Indies, Dutch: see INDONESIA; NETHERLANDS NEW GUINEA.

Eclipses of the Sun and Moon, 1953: see CALENDAR, 1953 (page xxii).

Economic Cooperation Administration: see MUTUAL SECURITY PROGRAM.

Economics. While certain sectors of the western world were beset with serious economic difficulties in 1952, the Americas—the United States and Canada in particular—continued throughout the year on unprecedentedly high levels of production. England was still plagued by a lack of critical materials and equipment and the difficulties involved in building up exports sufficiently to enable it to get those things in the international market. Under the Pinay plan France continued its desperate attempts to prevent a complete collapse of the franc in runaway inflation. Other European areas showed similar signs of distress. In contrast, the United States, in spite of a prolonged steel strike, materials bottlenecks and a serious drought, achieved an annual gross production of about \$340,000,000,000 and a fairly steady employment rate of more than 62,000,000 throughout the year. Canada experienced a veritable boom supported by large exports of certain critical materials to the United States and by extensive investments in Canadian industry by individuals, firms and investment houses in the United States.

However, these two nations, in spite of their prosperity, were not completely free from difficulties. In Canada certain industries were hurt by the new international trade pattern and were demanding help; in the United States inflation continued to be

a chronic and constant irritant, which, combined in a rather grotesque way with high taxes, became one of the chief issues of the 1952 presidential campaign. The government was plagued throughout the year by continuing difficulties of economically retooling for defense out of a situation of high-level employment.

In the western world scientific economists were still held firmly by this situation to the "problem orientation" which had dominated their viewpoints during the entire post-World War II period. Three outstanding developments seem, from a close contemporaneous view, to have characterized their research and writings during 1952. First, there was an apparent sharpening of interest among economists in the factors underlying and results flowing out of technological change. It was hoped that some practical policy for stabilizing investment might come as a by-product of this concern. Second, price theorists were finding that the concept of power—mass power, competing power, bargaining power, collusive power and countervailing power—constitutes an important addition to the kit of analytical tools for the study of markets. Some of them hoped to be able to throw away before long the emotion-laden concepts of monopoly and pure competition. Third, economists were becoming confident enough in their knowledge of aggregative, income-flow theory to venture bold and definite predictions. They seemed to agree pretty generally that some time toward the end of 1953 the U.S. economy would face trouble with the slowing or stopping of defense spending and the housing boom, assuming, of course, that war would not spread before that time. But they maintained that a depression could be avoided with care and foresight. They believed they knew what the precautionary measures should be. Twenty-five years before they would not have been so bold. (G. J. C.)

Economic Stabilization Agency. An independent agency of the United States government, the Economic Stabilization agency is charged with administering the direct economic control phases of the defense mobilization program, as provided for in the Defense Production act of 1950 as amended. The agency consists of an office of the administrator and six constituent operating units: the Office of Price Stabilization; the Office of Rent Stabilization; the Wage Stabilization board; the Salary Stabilization board; the Railroad and Airline Wage board, administering wage and salary stabilization for employees subject to the Railway Labor act; and the National Enforcement commission, which administers certain enforcement penalties for all three wage and salary stabilization boards. It is the function of the Economic Stabilization agency to develop both short- and long-range programs for stabilizing the economy during the period of the defense emergency, and to advise and consult with other government agencies in regard to policies which affect stabilization. The agency was created on Sept. 9, 1950.

During 1952 the Economic Stabilization agency, assisted by a strong tax policy and the indirect control programs operated by other agencies, continued to protect the defense effort and the civilian economy from the threat of inflation. The magnitude of the problem is illustrated by the fact that defense expenditures steadily increased during 1952, and these additional expenditures were fed into an economy that had already been operating at full employment levels. According to figures published by the Council of Economic Advisers, the level of defense expenditures in the second quarter of 1952 was \$15,000,000,000 a year higher than in the second quarter of 1951. This huge stepping-up in the rate of defense expenditures and defense production was accomplished without unstabilizing the economy.

Consumer prices went up slightly more than 1% altogether

during the first eight months of 1952. In the same period, wholesale prices declined 0.8%. Adjusted hourly earnings in factories rose 1.5% during the first half of the year, or slightly more than the cost of living.

While part of the credit for the record of stability was the result of such indirect control measures as high taxes, the encouragement of savings and credit control (consumer credit control was suspended in May 1952 and abolished by congress the following month, and real estate credit control was suspended by congressional direction in Sept. 1952), there can be no doubt of the important role played by the direct control programs. On the price front there were many sectors, both at wholesale and at retail, where market prices were straining at ceilings and where sellers were constantly seeking upward ceiling adjustments. Similarly the restraint exercised by wage stabilization was indicated by the numerous wage board decisions which cut back wage increases voluntarily agreed to by employers. About 17% of all petitions for approval of higher wage agreements were either denied or modified by the wage board. The role of rent control in restraining rent increases was well recognized, as was indicated by the fact that about 60% of the communities previously covered by federal rent control took the necessary affirmative local action required under the Defense Production act amendments of 1952 to continue rent controls beyond Sept. 30.

Side by side with the areas in which controls played an active role in restraining inflationary pressures were some slack areas where inflationary pressures were absent. For such areas controls were relaxed. For a number of commodities ceiling prices were suspended—thus eliminating the burden of record keeping and reporting—until such a time as market prices might again reach certain levels. For some commodities price controls were entirely removed by administrative action.

The Defense Production act amendments of 1952, which went into effect July 1, removed authority to control prices of all fresh and processed fruits and vegetables, which represent 21% of the average family food budget. The new law also removed authority from the Wage Stabilization board to recommend settlements in labour disputes. In passing the new law, congress provided authority for the direct controls to continue until April 30, 1953. (See also PRICE STABILIZATION, OFFICE OF; RENT STABILIZATION, OFFICE OF; WAGE STABILIZATION BOARD.)

(R. L. PM.)

Ecuador. A republic on the west coast of South America, straddling the equator, after which it was named, Ecuador is bounded on the north and east by Colombia, on the east and south by Peru and on the west by the Pacific ocean. It has an area of 104,510 sq.mi. (including the Galápagos Islands, a dependency of 3,029 sq.mi.) and a population (1950 census of the Americas) of 3,076,933. About 60% of this figure represents Indians, 30% mestizos, 9% "whites" and 1% Negroes. Quito (pop., 1950 census, 212,873) is the capital; other major cities (with 1950 pop.) are Guayaquil, the main port (262,624); Cuenca (46,428); Riobamba (29,611); Jipijapa (7,605); Vinces (4,129); Chone (8,030); Ambato (33,908); Loja (18,200); and Latacunga (10,340). The predominant religion is Roman Catholicism. Presidents in 1952: Galo Plaza Lasso, until Aug. 31; thereafter, José María Velasco Ibarra.

History.—Some excitement accompanied the government's announcement on Jan. 24, 1952, that it would not renew a contract permitting Grace Line ships to anchor at Puná, off the Gulf of Guayaquil. This decision stimulated discussion of projects for new methods of handling problems of transportation and commerce in the coastal area, none of which was definitively formulated by the end of the year. Meanwhile, President Plaza,

continuing his program of economic reform, promulgated early in 1952 a new income tax law. This measure replaced 14 separate previously existing income taxes with a single law, and established new levies on large-scale agricultural units and undistributed profits of foreign and domestic firms. In April the U.S. Export-Import bank granted Ecuador credit of \$800,000 for use in reconstructing areas devastated by the 1949 earthquake.

From the political standpoint, the major event of the year was the presidential election held on June 1. Three forces participated in the contest. The first was led by former President Velasco Ibarra (1934-35, 1944-47), who announced his candidacy on Feb. 1; the second by Ruperto Alarcón Falconí, the Conservative candidate; and the third by outgoing President Plaza. The campaign was characterized by division within the Plaza camp. Salazar Gómez, originally the administration's candidate, withdrew from the race on May 8, when he was replaced by José Modesto Larrea Jijón; and the proadministration elements remained disunited on election day. Victory went to Velasco Ibarra, who received 153,934 votes compared with the 118,186 ballots cast for Alarcón Falconí, the more serious of the other two candidates. Plaza, the first Ecuadoran president to serve out the full four-year constitutional term since José Luis Tamayo (1920-24), surrendered the executive office to Velasco Ibarra in inauguration ceremonies on Aug. 31. (G. I. B.)

Education.—In the school year 1949-50 there were 2,544 government primary schools with 225,571 pupils, 390 municipal schools with 34,222 pupils and 357 private schools (mostly Roman Catholic) with 61,138 pupils. There were 73 government secondary schools with 16,999 pupils, 11 municipal schools with 2,515 pupils and 72 private schools with 7,882 pupils. Institutions of higher learning included four public universities with 4,512 students, the Catholic university of Quito (164) and the polytechnical school (58).

Finance.—The monetary unit is the sucre, valued at \$0.0660 U.S. currency, official rate, and \$0.0571, free rate, on Aug. 30, 1952. The budget for 1952 balanced ordinary revenue and expenditure at 465,000,000 sucres. Ordinary revenue in 1951 was 438,207,300 sucres; ordinary expenditure 438,100,400 sucres; total revenue (excluding autonomous entities) 725,888,900 sucres; total expenditure 712,490,600 sucres. The foreign debt in April 1952 was \$43,190,000; internal, 131,812,000 sucres. Notes in circulation on Aug. 31, 1952, totalled 515,000,000 sucres; gold reserves \$22,500,000; commercial banking deposits 496,000,000 sucres; government deposits 121,000,000 sucres; time deposits (June 30, 1952) 127,000,000 sucres. The cost of living index (food, Quito) stood at 122 in Aug. 1952 (1948=100).

Trade and Communications.—Exports in 1951 (Ecuadorian ports) totalled \$51,900,000; imports through the port of Guayaquil (about 90% of all imports) \$55,400,000. Chief exports were cacao (34%), coffee (30%), bananas (21%), petroleum (3%) and rice (2%). Leading customers were the U.S. (59%), Colombia (6%), Italy (6%), Germany (5%) and France (3%); leading suppliers, the U.S. (65%), Germany (7%), the United Kingdom (6%) and Belgium (6%).

The length of the nine nationalized railroad lines in operation in 1949 was 698 mi. Highways (1947) included 1,591 mi. of main roads and 1,121 mi. of branch roads. In 1948 there were 2,921 automobiles, 4,245 trucks and 945 buses. Radios in use on Jan. 1, 1951, were estimated at 45,000.

Agriculture.—Production of the principal crops in the 1950-51 crop year included cacao 30,707 short tons; coffee 210,000 bags of 132 lb. each; rice (paddy) 149,000 short tons. Exports in 1951 were coffee 275,000 bags; cacao 26,550 short tons; rice 5,500 tons; bananas about 9,975,000 bunches (50 lb. each). There were 1,600,000 cattle and 1,800,000 sheep in 1949. Forest exports in 1951 included tagua nuts 10,900 short tons; balsa wood 6,000 tons; rubber 600 tons.

Manufactures.—The most important manufacturing activity was the textile industry, which produced cotton (principally), silk, woollen and rayon textiles. The manufacture of *toquilla* (Panamá) hats was also important. Cement production in 1951 was 86,900 short tons.

Mineral Production.—Production in 1951 included gold 9,014 fine ounces (excluding placer production); silver 33,600 fine ounces. No copper or lead was produced in 1951. Production of petroleum in 1951 was 2,708,310 bbl. (J. W. Mw.)

Eden, (Robert) Anthony (1897—), British statesman, was born at Windlestone hall, near Bishop Auckland, Durham, Eng., and was educated at Eton college and at Christ Church, Oxford. In 1923 he was elected to the house of commons for Warwick and Leamington, which he thereafter continued to represent. In 1931 he became undersecretary of state for foreign affairs. He was made lord privy seal in 1934 and minister for League of Nations affairs a year later. Eden became foreign secretary in 1935 but resigned in 1938 because of disagreement with Neville Chamber-

lain's policy toward Italy. At the outbreak of World War II he returned to government as dominions secretary, and when Winston Churchill became prime minister in 1940 Eden was appointed secretary of state for war and, later that same year, foreign secretary. In 1942 he was leader of the house of commons, and in 1945, when his party was defeated, he was deputy leader of the opposition. In the same year Eden led the British delegation to the United Nations Conference on International Organization in San Francisco, Calif. When Churchill was returned as prime minister in 1951, Eden was appointed deputy prime minister and foreign secretary. Early in Feb. 1952 Eden took part in a series of four-power talks in London with Robert Schuman, Dean Acheson and Konrad Adenauer in which the relationship between the European Defense Community and the North Atlantic Treaty organization was discussed. In September Eden visited Yugoslavia for talks with Marshal Tito in an effort to settle the problem of Trieste. Following conferences with Leopold Figl in Vienna regarding a treaty to secure Austria's independence, Eden declared that the keystone of European peace was Austria.

On Aug. 1 Eden married Clarissa Spencer Churchill, niece of the prime minister. His marriage to Helen Beckett (1923) had been dissolved in 1950.

Education. As of Oct. 15, the outstanding educational events of 1952 in the United States were the following: (1) the continuing shortage in faculties, facilities and funds; (2) the steady rise in enrolments and progress in constructing and properly maintaining schools; (3) the struggle of the private colleges and universities to raise money to meet the increasing costs of operation and to offset the losses caused by declining enrolments; (4) the lack of noticeable progress in providing federal aid to public schools by means of congressional legislation; (5) the allotment by the Federal Communications commission of television channels to educational institutions and groups; (6) the grants of millions of dollars by private foundations for the promotion of education; (7) the death, at the age of 92, of John Dewey, the educational philosopher whose ideas had exerted wide influence on education in the United States and in some foreign countries; (8) the passing of a new G.I. Bill of Rights for veterans of the Korean war with educational provisions estimated as costing \$1,000,000,000 a year; (9) the shift in emphasis from the attack on public education to the United Nations Educational, Scientific and Cultural organization and to the teaching about the United Nations; (10) the eruption of a controversy regarding the place of the private, including the parochial, school in the United States; (11) the growing concern of educators and laymen with the question of the teaching of moral and spiritual values in the public school; and (12) U.S. supreme court decisions upholding the dismissal of school personnel for spreading subversive propaganda, approving the release of pupils to attend religious classes away from the public school and denying an attempt to invalidate the reading, without comments, of portions of the Old Testament in the public schools.

Statistics.—The annual enrolment estimate by the office of education of the Federal Security agency, for the school term commencing in the fall of 1952, was as follows: elementary schools and kindergartens, 26,064,000, a rise of 1,596,000 over the previous year; high schools, 6,263,000, a total of 95,000 more than in 1951-52; colleges and universities, 2,150,000, a decline of 75,000. The complete enrolment, 34,693,000, which also comprised the private and nursing schools, represented the highest figure in history, according to the office. Other federal statistics of interest and significance included the estimate of the need of at least 158,000 additional teachers to instruct the



Above, left: SCALE MODEL CLASSROOM at Stanford university, Stanford, Calif., in a school building laboratory widely used by visiting school boards in 1952. Displays, furnished by more than 60 U.S. firms, included ventilating units, lighting, desks, chairs and acoustic materials

Above, right: SENIOR CITIZENS GROUP of Pasadena, Calif., participating in a 1952 discussion program called "World Affairs Are Your Affairs," sponsored by the Fund for Adult Education of the Ford foundation



Left: FIELD TRIP for teachers being trained under U.N. auspices in 1952 to help peoples of backward nations. The group, studying at Patzcuaro, Mex., comprised teachers of nine western hemisphere nations

Below: TEMPORARY PARTITIONS forming four classrooms in the auditorium of a secondary school in a suburb of Oklahoma City, Okla. Overcrowding in many U.S. schools in 1952 was highlighted in this area where enrolment was swelled by expansion of a near-by air force base



record number of pupils, and the revelation that the United States spent \$6 less per pupil in the public schools during 1950-51 than during 1949-50.

The U.S. census bureau reported in June that, of the 87,675,000 persons of the population of the age of 25 and above, 7 of every 10 had completed elementary school, 1 of every 3 had been graduated from high school and 1 of 16 had obtained a college diploma. These data, compiled during the 1950 census, indicated that the people of the United States possessed more schooling than ever before, according to the bureau.

A survey by the *New York Times* in March disclosed that about 60% of the Catholic children of compulsory school age were attending parochial schools—3,035,033 in elementary schools and 611,123 in high schools. Catholic colleges and universities were reported as having an enrolment of more than 350,000. The combined enrolment of 4,000,000 below college level marked a rise of more than 35% during the past ten years. According to the *Official Catholic Directory*, a total of 1,545,220 public-school children were receiving religious instruction in released time classes under Catholic auspices. This publication also stated that the over-all figure of Catholic students on all levels of religious instruction, both in Catholic and public institutions, was 5,141,251.

In May, the National Council of the Churches of Christ in the United States released statistics on Protestant day schools. Whereas in 1937 there were 115,580 pupils in 2,054 schools, the year 1951-52 found a total of 187,292 in 2,904 schools, an increase of 61% during 15 years. The leading denominations sponsoring day schools were the Lutheran and Seventh-day Adventists.

Also in May, Torah Umesorah, a national society for the establishment and promotion of Jewish day schools, reported the existence of 148 Jewish day schools, 21 of them on the high school level, throughout the United States. This organization estimated the full enrolment as about 30,000. As in the cases of the other denominations, the number of schools and the attendance had increased markedly during the past decade.

Financially, education benefited from private foundations by many millions of dollars. The largest sums for 1951 were contributed by the Ford foundation (\$22,331,736) and the General Education board (\$14,352,666).

Federal Participation in Education.—Following his custom of previous years, Pres. Harry S. Truman urged congress in his State of the Union message in January to begin the "long-deferred program of federal aid to education—to help the states meet the present crisis in the operation of our schools." He also suggested that the government "help with the construction of schools in areas where they are critically needed because of the defense effort." At the same time, he stressed that "we urgently need to train more doctors and other health personnel, through aid to medical education." Nevertheless, the national legislative body undertook little or no action to provide funds for the improvement of education in those states which had difficulty with financing their school programs. On the positive side, congress passed in July a new G.I. Bill of Rights which would furnish to veterans of the Korean war the benefits of higher education. (See VETERANS ADMINISTRATION [U.S.]) In its approval of the constitution of the Commonwealth of Puerto Rico in May, congress stipulated that no state funds be expended on "elementary education established under nongovernmental auspices." Neither the bill to provide scholarship aid to college students who were needy but able nor the bill to apply the funds from offshore coastal lands for school purposes received favourable congressional attention. Other action by the government in behalf of education included the easing in March of the building controls on school projects and the grant, an-

nounced in April, of \$122,740,302 during the fiscal year ending June 30, 1951, to schools located in areas congested by federal defense activities.

Elementary and Secondary Education.—That the pupils of the public schools of the United States were not getting, on the whole, as good an education as they should have been receiving was evident from the results of a survey published by the *New York Times* in January. Based on reports from state commissioners of education, statements by correspondents of the newspaper and interviews with educators, this survey, in the words of Benjamin Fine, education editor, revealed that "over the nation 3,500,000 elementary and high school children—one out of eight pupils in the public schools—are suffering an impaired education because of inadequate facilities." Contributing in a large measure to this situation were the prevalent teacher shortages, especially in the elementary schools; the unprecedented enrolments; the impact of inflation on the budgets of the boards of education all over the country, with the result that funds were not sufficient for teachers' salaries and educational facilities; the shortage of steel and other critical materials used in the defense program, with the consequence that new school construction lagged far behind current and future needs; and the continual attacks by certain individuals and groups on the public schools. The "most hopeful aspect" of this survey was the organization of more than 5,000 citizens' groups in all parts of the country for the purpose of supporting public education. Much the same conditions were discovered in a check of 25 major cities in the same number of states at the time schools opened in the fall.

In the area of curriculum there were several interesting developments. The commissioners of education of the northeastern states—New England, New York and New Jersey—presented a report, "Education for Citizenship," a plan for improving the teaching of citizenship in elementary and high schools. The New York state legislature passed a law requiring public and private high schools, as well as state teachers colleges, to teach the effect of habit-forming narcotic drugs. In September, the board of regents of the state of New York introduced a new American history syllabus for public high schools which altered the approach from a topical to a chronological one and which placed more emphasis on the colonial and constitutional periods.

The debate on the achievements of elementary and high school pupils continued as in previous years. A questionnaire survey of business executives by the Commerce and Industry Association of New York disclosed much dissatisfaction with the abilities of high school students and graduates in spelling, arithmetic and writing. On the other hand, an 18-month study of the Pasadena, Calif., city school system, prompted by the widely publicized dismissal of Superintendent Willard Goslin in 1950, indicated that the citizenry was on the whole satisfied with the results of the newer educational practices and felt that the children were learning adequately the fundamental subjects.

A controversy, which reminded some of the national debate following the disagreement between Mrs. Eleanor Roosevelt and Francis Cardinal Spellman on the question of state subsidies for parochial schools, erupted early in April as a result of remarks by Pres. James B. Conant of Harvard university. Addressing the conference of the American Association of School Administrators in Boston, Conant called for the extension of public secondary education to encompass the nation's entire high school population. Several comments of his regarding the private school aroused considerable adverse comment and inspired many defenses by those who upheld his views. Typical of his attitude toward the place and function of the private, and inferentially the parochial, school in American education was the statement "The greater the proportion of our youth who attend independent schools, the greater the threat to our democratic unity."

When it became clear that Conant's sentiments had struck responsive chords among school administrators and other educators, proponents of the private school began to issue statements defending nonpublic education in the form of newspaper releases, letters to the editor, articles, editorials and leaflets. The opposition to Conant came largely from the National Catholic Educational association, non-Catholic private schools and secular independent schools. However, no serious signs of acrimony developed.

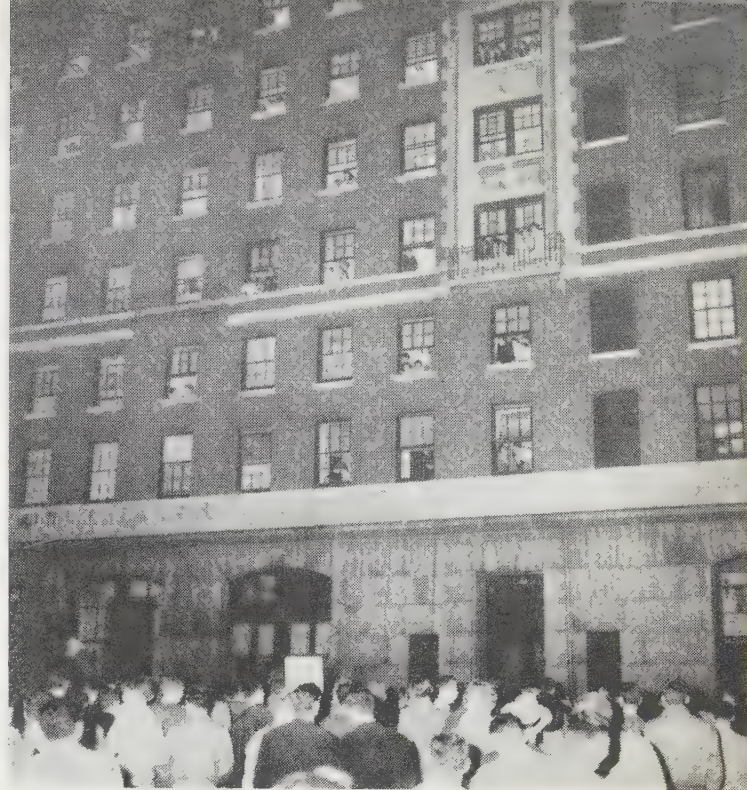
There was considerable evidence throughout the year that the educational profession and the public were deeply concerned about the problem of the teaching of religion in the schools. Much of this interest was manifested in various types of publications and in speeches. The keynote was instruction in moral, ethical and spiritual values in a manner calculated not to offend any religious denomination. Many cities and states issued syllabi to aid teachers in teaching secular moral values in the elementary and secondary schools.

Higher Education.—As in recent years, the colleges and universities of the United States were confronted again in 1952 by a serious financial crisis, caused principally by the inflationary situation and the decline in income and enrolment. A survey of 100 independent liberal arts institutions by the *New York Times* disclosed late in May that 50% of these colleges were operating on a deficit, that many were close to bankruptcy, and that the curtailment of educational services was widely prevalent. In spite of a vigorous campaign to raise funds among alumni, business corporations, foundations and other sources, it did not appear that the colleges and universities would be able to solve their financial difficulties with any degree of success. No less than 80% of the institutions covered in the *New York Times* survey maintained that it was far more difficult to raise money at this time than it was during the previous year. To meet this crisis, a number of well-known institutions resorted to increases in tuition fees.

There were also other measures to safeguard the financial status of higher education. The University of Rochester combined its male and female undergraduate colleges into a coeducational college of arts and science on a single campus. Groups of independent colleges in New York, Virginia, Texas, Indiana, Ohio and about 15 other states formed co-operative organizations to obtain more money from industry and business corporations, foundations and private persons in order to maintain the integrity of the smaller institutions of higher learning. Among the larger gifts during 1952 were a grant of \$7,000,000 by the General Education board to Emory university of Georgia for the development of a graduate school, and one of \$5,000,000 by the Old Dominion foundation to Yale university for the development of the liberal arts program and related purposes.

The passage by congress of the new G.I. Bill of Rights appeared as a boon to many colleges and universities. However, according to a survey by the *New York Times* in July, many leaders in higher education feared that the direct-payment provisions, under which the veteran rather than the Veterans administration pays the college for tuition, would favour the schools charging low tuition rates. On the other hand, Earl J. McGrath, U.S. commissioner of education, stated publicly his opinion that there would be no material change in the normal distribution of students between private and public institutions.

Another significant issue facing higher education during the year was the status of the athletes. The startling disclosures in 1951 of the West Point cheating scandal, the subsidies paid to varsity players in many colleges and universities and the prearrangement or "fixing" of basketball games were at the bottom of the wave of reform which swept the administration of college athletics all over the nation. The new year began with the



UNDERGRADUATES of Columbia university at the Barnard college dormitories during one of a number of "panty raids" that took place at U.S. colleges in the spring of 1952. Object of the raids was to invade the girls' dormitories and collect lingerie as souvenirs

publication of recommendations by a special committee of college presidents under the auspices of the American Council on Education. This committee, headed by Pres. John A. Hannah of Michigan State college, East Lansing, offered an athletic code which would change radically many of the practices long traditional in college sports. The new recommendations included the abolition of all postseason contests, the discontinuance of the use of freshmen on varsity teams and the granting of scholarships strictly on the basis of the educational ability and needs of the student. This move brought forth a quick response by the National Collegiate Athletic association to the effect that, while the philosophy and the general objectives of the presidents' committee were most laudatory, it did not agree with several of the key suggestions. However, on Feb. 16, the executive committee of the American Council on Education voted to accept the presidents' new code with but minor reservations. This action constituted a repudiation of the counterrecommendations by the National Collegiate Athletic association. Nevertheless, it did not appear that the new athletics control program would solve all the evils of excessive emphasis on college sports. Later that month, two important accrediting organizations, the Middle States and the New England Associations of Colleges and Secondary Schools, labelled the proposals of the American Council on Education as "unpracticable," maintaining that they lacked police powers to enforce the proposed regulations.

The question of academic freedom came under consideration in several important instances during 1952. Dismissals of instructors at Fairmont State college, W.Va., and the University of Minnesota, Minneapolis, on the alleged grounds of liberal political views, did not result in reinstatements after hearings and lawsuits. The former case, in fact, led to the dismissal of the college's president and the resignation of a dean and three faculty members. At Talladega college in Alabama, the board of trustees requested the resignation of the president and his entire administration after a three-year campaign by students, alumni and faculty. The transfer of a dean to teaching duties at Queens college in New York city gave rise to charges of outside pressure and infringement upon academic freedom.

With reference to the question of deferment of college stu-

dents from the draft, the Educational Policies commission of the National Education association and the American Council on Education issued a joint report in January under the title, "Education and National Security." The educators presented a three-fold plan to obtain the temporary deferment of students in order to allow them to complete their college work prior to entering upon their military service. This suggestion, however, caused considerable criticism to be hurled at its authors on the part of persons who suspected a request for special privileges for education. Also in January, the Association of American Colleges petitioned congress to defeat the program of universal military training which was under consideration. An announcement by Selective Service headquarters revealed that 39% of the 20,000 students who took the draft deferment tests in Dec. 1951 failed to qualify.

Other developments in higher education were as follows: the availability of numerous positions for the 1952 graduates; the expansion of the facilities of medical colleges; the admission of a freshman class of 7,381 for the academic year of 1951-52, the largest group in the recent history of medical education; the proposal by a committee of educators, headed by Dean Emeritus Harry J. Carman of Columbia university, for reforms in the educational program of premedical students; the dwindling enrolment in schools of nursing, as shown by a *New York Times* survey in March; the recommendation in April by the American Council on Education for Journalism that future journalists be given a broad general education rather than narrow vocational training in the junior colleges; the tendency noted in March by a *New York Times* survey that the programs of the colleges stressed the natural and applied sciences, as well as professional subjects, and that fewer students were enrolled in the liberal arts subjects; the wave of student pranks and riots, all highly publicized, during the spring at campuses all over the country; the availability of scholarships for 1 in every 20 students, according to an announcement by the U.S. office of education; the presence of more than 30,000 foreign students, a record number, at U.S. institutions of higher learning; the initiation of an experiment in 11 colleges, under the auspices of the Carnegie Foundation for the Advancement of Teaching, to improve undergraduate programs through greater faculty participation in the planning; and the admission by a former assistant U.S. commissioner of education that the government was practically helpless to close the fraudulent "educational" institutions which offer degrees for "correspondence courses."

The Teacher Situation.—The serious teacher shortage continued as in previous years. According to a survey in April by the National Education association, there were 32,443 new teaching graduates to meet the need for a minimum of 160,000 teachers in the elementary schools. On the high school level, the situation was better, with a supply of 62,692 candidates for 50,000 vacancies.

Several efforts were made to improve the education of teachers. Harvard university formulated a co-operative plan to enable the graduates of 21 eastern colleges to prepare themselves for teaching in the public schools and to obtain a master's degree in education. Funds for this purpose were provided by the Ford foundation's fund for the advancement of education. This foundation also allotted \$2,000,000 for 400 fellowships for high school teachers to expand their backgrounds in the liberal arts. A third project, a year of internship following the sequence of four years' work in general education, was offered to the state of Arkansas. This plan evoked much criticism from the American Association of Colleges for Teacher Education, which maintained that with the aid of large sums of money the foundation was interfering unwarrantedly with the established procedures of teacher training.

Adult Education.—In September, the National Education association reported the results of a national study of public school and public community-college activities in adult education in communities of 2,500 and over. The total of 4,744,256 students represented an increase of 1,744,256 in the past five years. Among the other interesting developments were the presentation of a series of radio programs, "The Jefferson Heritage," by the National Association of Educational Broadcasters; the granting of television channels to educational institutions and organizations; the publication of the 54-volume "Great Books of the Western World" under the editorship of Robert M. Hutchins and Mortimer J. Adler; and the passing of a congressional resolution in May setting up a committee to investigate the extent to which immoral, obscene and otherwise offensive books, magazines and comic books were being made available to the public by the mails or other means.

Race and Religion.—All eyes were focused in January on the U.S. supreme court, which was to have ruled on the constitutionality of the segregation of the races in education. However, the court delayed action then and again in October, but it announced that hearings would take place in December. In actual practice, segregation was being modified in some localities and upheld in others. Negro students were admitted to the graduate school of the University of Tennessee, Knoxville, and to the dental college of the University of Texas, Austin. The policy of segregation was discontinued in the schools of Alamogordo, N.M., and Cairo, Ill. In Delaware, the court of chancery ordered the admission of Negro pupils to white schools in two communities where the facilities were unequal for the two races, while in Baltimore the school board voted to allow some Negro boys to enter the Polytechnic institute. Unfavourable incidents regarding the breakdown of segregation took place in Virginia where the federal court upheld the state laws for separate schools; in Tennessee, where the state supreme court refused to hand down a decision as to whether the segregation laws were unconstitutional; in Florida, where the state supreme court dismissed the pleas of Negroes for admittance to the University of Florida, Gainesville; and in South Carolina, where the federal circuit court reaffirmed an earlier decision that separate schools are constitutional. Governors Herman Talmadge of Georgia and James F. Byrnes of South Carolina threatened to close all public schools of their respective states if the U.S. supreme court should rule against segregation. On the whole, it was apparent that, while there was still much resistance to the discontinuance of the system of segregated schools in the south, a definite change in attitude was in evidence; and, in any event, the pressure to end racial discrimination in education did result in vast improvements in Negro education.

The year 1952 saw two important decisions handed down by the U.S. supreme court regarding the problem of religion in the public schools. On March 3, by a six-to-three vote the court declared, in the case of *Doremus and Klein v. The Board of Education of the Borough of Hawthorne and the State of New Jersey*, that the state statute providing for the reading without comment of passages from the Old Testament each school day was constitutional. A similar vote by the court on April 8, ruled, in the case of *Zorach and Gluck v. The Board of Education of the City of New York*, that the practice of releasing public school pupils to attend religious classes outside the school buildings and grounds was similarly in consonance with the spirit of the U.S. constitution.

Communism and Academic Freedom.—Reports from various parts of the country indicated the prevalence of attacks on the public schools and the teaching profession throughout the year. In a majority of cases there were charges of alleged subversive, Communistic or un-American teachings in textbooks.

According to Benjamin Fine's summary of a *New York Times* nation-wide survey in May, "A growing censorship of school and college textbooks in this country is causing America's leading educators serious concern." Success in repudiating charges of subversion crowned the efforts of Sarah Lawrence college (Bronxville, N.Y.) and the Scarsdale (N.Y.) public schools. After a controversy of three months' duration, the board of education of Englewood (N.J.) adopted the state regulations regarding the selection of textbooks to replace the local rule which put responsibility for the selection of books with alleged propaganda passages on the individual teacher. Yale university rejected accusations of harbouring Communists on its faculty by issuing a detailed report by a special alumni committee. A rupture almost developed between the American Legion and the National Education association after the publication in the former organization's magazine of an article which accused the association of engaging in subversive educational activities. The rift was breached in August when the convention of the American Legion passed a resolution commending the N.E.A.'s efforts in behalf of Americanism. During the same month, the N.E.A. stated in a report that academic freedom must be perpetuated in order to resist the menace of Communism and that the public-school system was "democracy's greatest gift to civilization."

Early in March, the U.S. supreme court upheld the constitutional status of New York state's Feinberg law, a measure designed to remove from public-school positions all teachers and other employees who spread disloyal or subversive doctrines. This decision, which was opposed by three of the judges, provided the legal precedent against Communists in the school system. As a result of the refusal of some teachers to answer the questions of the U.S. senate internal security subcommittee, the New York city board of education dismissed six teachers in October. Likewise, for not co-operating with the senators regarding past or present membership in the Communist party, three professors of the city's municipal colleges were suspended. The most startling development during the subcommittee's investigation was the testimony of Bella V. Dodd, formerly a member of the Communist party's national executive committee, to the effect that there were about 1,500 Communists among the 1,000,000 teachers in the United States, many of them in the eastern colleges. According to the witness, the influence of these persons was far out of proportion to their actual numbers. Other actions against Communists included the passing of a resolution in August by the American Federation of Teachers not to defend any teachers who had been proved to be members of the Communist party, and the decision by the trustees of Columbia not to tolerate an avowed Communist on the faculty. The National Education association, while suggesting that American schools teach about communism and other types of totalitarianism, reaffirmed its stand against the employment of Communists as teachers. On the other hand, the American Civil Liberties union announced its opposition to any prohibition of the appointment or retention of teachers who held Communist or fascist views.

International Educational Relations.—The annual report of the Institute of International Education revealed increases in the numbers of foreign students in the U.S. and American students abroad. The institute spent \$8,000,000 in 1951 on exchange scholarship and travel grants for about 4,000 individuals. The U.S. state department announced in September that 800 Iranian students would attend U.S. colleges under the terms of a new agreement.

The United Nations Educational, Scientific and Cultural organization (U.N.E.S.C.O.) went ahead on the projects it had organized during the past few years. Among the new developments were an intergovernmental customs agreement to set aside

import duties on books, newspapers, educational films and other cultural and scientific materials necessary for the advancement of education; the approval of Spain, Libya and Nepal as members; and the sponsoring of a conference between German and American historians for the purpose of improving history instruction in both countries.

The U.S. department of state revealed in September that 1,257 Americans received appointments to study, teach or carry on research projects in 20 countries under the provisions of the Fulbright act. In June, the U.S. initiated the Point Four program in Ethiopia with an agreement to establish there an Imperial Ethiopian College of Agriculture and Mechanical Arts to be associated with the Oklahoma Agricultural and Mechanical college. Foreign informational services outside the capital were ordered closed in February by the Iranian cabinet. A new international teachers' organization, the World Confederation of Organizations of the Teaching Profession, was formed in August at Copenhagen, Den., by amalgamation of three existing bodies.

World Trends.—There were numerous events of interest and significance during the year in many countries. The minister of education in British Columbia, Can., opposed the plan to integrate the Catholic schools into the public educational system. Student disorders and strikes over political issues took place in Argentina, Cuba, Venezuela and Peru. The minister of education in Ecuador suspended several teachers of the Central Technical college of Quito for allegedly delivering inflammatory Communist lectures against "Yankee imperialism." The Argentine government approved the autobiography of Eva Perón, the president's wife, as a basic text in some school courses. To increase the teaching of nationalism in the schools, the governor of Buenos Aires recommended the exclusion of the writings of Mark Twain, Walt Whitman, Benjamin Franklin, Jacob and Wilhelm Grimm, Friedrich von Schiller, I. S. Turgenev, Robert Browning and other non-Argentine writers.

The American College of Louvain, Belg., which had been closed since 1939, reopened in September. The Netherlands government announced in January that the universities would offer courses to prepare students to help underdeveloped nations. Reports from west Germany indicated that the America Houses and reading rooms were evoking favourable responses from the German public. According to some observers, this was one sign of the growth of democratic sentiment. The opposition by the Roman Catholic hierarchy in Spain to the government's plan to reform the high school system was not supported by the Vatican. The Communist party of Yugoslavia intensified its propaganda efforts and organized a campaign to rid the press and the universities of western ideas. In the U.S.S.R., Latin was reintroduced into the middle schools after an absence of many years from the secondary curriculum. The anti-U.S. propaganda in the press and the schools was stepped up at various times during the year.

The Egyptian government reopened in February the Fuad I university of Cairo after a two-month discontinuance of classes resulting from student demonstrations and disorders. The council of Ulemas, or religious scholars, of Egypt's Al Azhar university declared authoritatively that coeducation was immoral, but there was no action by the government to discontinue the practice. Student agitations of a political nature against France took place in May in Cambodia. The Syrian government promoted nationalism by decreeing that all youth groups must rid themselves of non-Syrian associations. In Israel, the Hebrew university-Hadassah medical school awarded 62 medical degrees, its first graduation class in medicine. The Israeli elementary schools, severely affected by the economic crisis, were forced to curtail their programs.

The countries behind the "iron curtain" paid increased atten-

tion to the communization of the schools. The authorities of east Germany carried on a campaign to purge schools and public libraries of "undesirable" books. Much stress was laid during 1952 on the military training of east German youth. From Czechoslovakia came reports that the Communist leaders were considering the revision, for the third time in three years, of primary and secondary textbooks to bring them up to date with the current ideological changes. In Communist China there were campaigns against illiteracy, purges of prominent educators, programs of thorough indoctrination from the nursery to the university, and antiforeign, especially anti-U.S., propaganda.

(W. W. BN.)

Canada.—A report issued in 1952 showed the percentages of total revenue spent by each province on education, as follows: Newfoundland, 22.5; Nova Scotia, 25.8; New Brunswick, 20; Prince Edward Island, 19.1; Quebec, 17.2; Ontario, 24.8; Manitoba, 16.4; Saskatchewan, 15.8; Alberta, 19.9; British Columbia, 16.9. The Canadian Education association made a survey which revealed that new schools valued at a minimum of \$78,000,000 would have to be built annually to keep pace with school enrolments. Although assured that by 1955 Canada would be short 25,000 teachers and 1,000 schools unless there was federal aid to education, the house of commons voted 78 to 23 on April 21 against a resolution calling for federal educational grants to all provinces to equalize educational opportunity. It was the second time the commons had rejected such a proposal. By September the problem entered another stage when the Canadian school trustees' association launched a two-year research project to discover how much federal aid was needed for education, where it was needed and how it could be distributed. Many educational problems were highlighted by the reports that there were acute teacher shortages in Newfoundland, that Saskatchewan had to enrol 800 study supervisors to help overcome its teacher shortage, that Ontario was offering special inducements to high school students who would take short courses to teach the elementary grades where enrolment was increasing at the rate of 35,000 per year. After meeting Premier Maurice L. Duplessis' demand that a Quebec commission be appointed to apply the grants to Quebec universities voted at the 1951 session of parliament, a demand that had delayed all the grants, the federal government distributed \$6,900,000 to more than 90 higher-education bodies across the nation. The new money, however, barely enabled most of the recipients to beat their mushrooming costs, and little was left for urgently needed expansions and improvements. (C. Cy.)

United Kingdom.—In Aug. 1952 the dispute between the Durham county council and the teachers' and other professional bodies' associations, which began in Nov. 1950—when the council formally declared that every teacher in its employment should be a member of a trade union—was ended after recourse was had to arbitration. The council had previously conceded that their professional employees need not as a condition of employment belong to a trade union or professional organization, but had demanded that applications for extended sick benefits by such employees should be made through a trade union or professional organization. The arbitrators recommended the withdrawal of this rule, and the council agreed to do so.

In May the first experimental television program for schools was transmitted by the B.B.C. (British Broadcasting corporation). Six secondary schools in Middlesex took part in the experiment, which lasted four weeks, 20 programs being transmitted. Immediately after each program the pupils' reactions were elicited by B.B.C. and education officials, and there were later more follow-up investigations. First impressions were that television had much to offer if confined to topics, places and experiences which could not be easily presented by conventional

classroom methods. The 18-in. screen—the largest used—was declared to be too small.

Following the three months' "stand-still" order prohibiting the start of new school-building projects, issued in Oct. 1951 the minister of education announced in February the closure of the 1951-52 educational building program and the decision to compile a revised 1952-53 program from the balance of the 1951-52 and the existing 1952-53 programs. The total value of this was to be about the same as that of the original program. All effort was to be concentrated on providing places in primary and secondary schools to meet the increased school population and the needs of new housing estates, and in technical institutions to provide facilities for the more essential industries.

In October the first permanent school of remedial gymnastic and recreational therapy in Great Britain was opened at Wakefield, Yorkshire.

In February the government announced that, despite rumour to the contrary, it did not intend to shorten the period of compulsory school attendance (*i.e.*, 5 to 15 years). In April the minister of education relaxed the rule that candidates below the age of 16 might not take the examination for the general certificate of education. From 1953 on, younger pupils could be entered provided their head teachers would certify that it was educationally desirable for them to do so and that they might reasonably be expected to pass. In September King George's Jubilee trust announced that it would conduct a survey of the influences affecting young people from the time they entered primary school until the age of 20.

(See also BLIND, EDUCATION OF THE; BUDGET, NATIONAL; CHILD WELFARE; GEOGRAPHY; LAW; LIBRARIES; MOTION PICTURES; NEGROES, AMERICAN. For statistics of institutions see UNIVERSITIES AND COLLEGES; see also under various states and countries.)

(H. C. D.)

Education, Religious: see RELIGIOUS EDUCATION.

Education, U.S. Office of: see EDUCATION; FEDERAL SECURITY AGENCY.

Eggs. Farmers in the U.S. in 1952 produced a record supply of more than 165,000,000 cases (24 doz. each) of chicken eggs. Varying consumption estimates were at a new high level of 406 to 412 eggs per person, compared with only 397 in 1951 and an anticipated 390 to 400 in 1953. There were 423,000,000 potential layers, hens and pullets, on farms at the beginning of the year. However, egg prices during the spring were down 18%, compared with the same months of 1951, and reached a low of 34 cents per dozen to producers in May, a level still unsatisfactory in relation to costs that farmers decreased by 7% the number of chickens raised for laying-flock replacement; hence the anticipated smaller production and higher prices in 1953. The surplus situation changed rather abruptly with the abnormally hot weather of June and July over much of the country, lowering egg quality as well as numbers. The substantial price rise which followed carried the average price to producers to nearly 49 cents per dozen in September but did not reach the 55 cents per dozen of 1951. The autumn period was one of record lay, 4% more than 1951 and 22% above average. Storage stocks of shell eggs were 2,160,000 cases in September, compared with a very low level, 1,615,000 cases, a year earlier and an average for 1941-50 of 5,320,000 cases.

Egg price-support programs, which since the beginning of World War II had cost the government more than \$200,000,000, were largely liquidated. Shell egg grades were revised effective July 1, 1952. An egg purchase program, which was terminated in June, involved only 226,000 cases to be delivered to the school lunch program. Export of eggs in the shell increased in



FORMER KING FAROUK (right) and former Queen Narriman (second, left) vacationing in Capri after Farouk abdicated the Egyptian throne in favour of his infant son, Ahmed Fuad, July 26, 1952

1951-52 to 37,558,000 doz. (20,951,000 doz. in 1950-51), whereas the export of dried eggs, mostly from Commodity Credit corporation stocks, declined to 21,342,000 lb. from 48,607,000 lb. in 1950-51.

World egg production failed to show any significant increase in 1951 over the previous year, and 1952 may have shown some cutback in production, particularly in those areas emphasizing commercial production for export. However, larger autumn production was anticipated in the United Kingdom. Hatching eggs were exempted by Brazil from import licence. (J. K. R.)

Egypt. An independent kingdom of northeast Africa. Egypt is bounded north by the Mediterranean, south by the Anglo-Egyptian Sudan, east by Israel and the Red sea, west by Cyrenaica and the Sahara. Area: 386,110 sq.mi. Pop.: (1947 census) 19,038,529; (mid-1951 est.) 20,729,000. Language: mainly Arabic (97%), with minorities speaking Greek, Italian, Armenian, etc. Religion: Moslem (mainly Sunni) 91.4%; Christian (mainly Copt) 8.19%; Jewish 0.4%. Chief towns (pop., 1947 census): Cairo (cap., 2,100,506); Alexandria (925,081); Port Said (178,432); Tanta (139,965); Mahalla el-Kubra (115,509); Suez (108,250); Mansura (102,709). Rulers in 1952: King Farouk I; infant king Ahmed Fuad II with a three-member regency council (from July 26); Prince Mohammed Abd el-Moneim, sole regent (from Oct. 13). Prime ministers in 1952: Mustafa el-Nahas, Aly Maher (from Jan. 27), Ahmed Naguib Hilaly (from March 1), Hussein Sirry (from July 2), Ahmed Naguib Hilaly (from July 20), Aly Maher (from July 23), and Maj. Gen. Mohammed Naguib (*q.v.*) (from Sept. 7).

History.—The year 1952 began under the shadow of the continuing conflict with Great Britain. The conflict, which had entered its most serious stage after the unilateral denunciation of the Anglo-Egyptian treaty of 1936 by the Egyptian government on Oct. 27, 1951, was engaging the serious attention of both governments at the beginning of the year. In the canal zone violence increased, and a rumour that the British were intending to appeal to other maritime powers to help in keeping open the canal provoked from Egypt a solemn warning to the governments of the United States, France, Norway and the Nether-

lands that such assistance would be regarded as an "unfriendly act."

On Jan. 26 serious riots occurred in the capital. At first anti-British, the riots became antiforeign and anti-Jewish before evening when King Farouk called upon the army to restore order. There were about 60 deaths, including the Canadian trade commissioner and a number of prominent British residents. Many important buildings were destroyed or damaged, among them Shephard's hotel, the British-owned Turf club, the French chamber of commerce and the Swedish and Lebanese legations; 15 states subsequently protested to the Egyptian government.

Meanwhile the king dismissed the Wafd government, and on Jan. 27 Aly Maher formed a cabinet of Independents which received the unanimous approval of both houses of parliament. Aly Maher sought to bring about a united front of all parties. He set up an all-party committee on Anglo-Egyptian relations, laid great stress upon the maintenance of order, and attacked the economic grounds of popular discontent by ordering price cuts in such basic commodities as sugar and paraffin. He reiterated the demand for Egypt's "national aspirations" but expressed willingness to discuss the proposal for a four-power middle east command which had been made at the beginning of the period of crisis. Abd el-Fattah Amr, in London for the funeral of King George VI, saw the British foreign secretary, and preparations were made for a resumption of Anglo-Egyptian negotiations.

On March 1, however, Aly Maher resigned because, it was believed, of disputes in the cabinet about a proposal to prorogue parliament during the negotiations. His successor was Hilaly, who took office with a cabinet composed of Independents and one Wafdist on March 1. Parliament was prorogued for one month, Fuad al-Awal university was closed and great emphasis was laid upon the elimination of corruption from public life. Hilaly had been expelled from the Wafd in Nov. 1951, after giving evidence against one of the party's leaders, and corruption was its most vulnerable issue. Thus his term of office, which lasted until June 29, was dominated by that party's



CARTOON by Sweigert published in the *San Francisco Chronicle* in 1952

hostility to him. His single Wafdist supporter was expelled and he was attacked for betraying Egypt's national interests and for "tyranny." Counterattacking, Hilaly accused the Wafd of using the "national aspirations" as a means to power, placed Fuad Serag ed-Din, its second most important leader, under house arrest and continued with his investigations of official corruption. Negotiations with Great Britain were resumed and the situation in the canal zone steadily improved, but the publication on April 2 of the Sudan draft constitution caused resentment in Cairo. Meanwhile the energetic prosecution of the corruption investigations was making powerful enemies for the prime minister, whose resignation at the end of June was followed by 48 hours of confused political manoeuvring.

On July 2 this was ended when Hussein Sirry became prime minister for the fourth time at the head of a cabinet of Independents. Sirry resigned, without explanation, on July 20 and was replaced by Hilaly, whose cabinet included the provocative appointment of the king's brother-in-law as minister of war.

During the night of July 23 there occurred a dramatic coup d'état, under the direction of Maj. Gen. Mohammed Naguib, the consequence of which was to put all the institutions of modern Egypt into the melting pot. General Naguib was a hero of the Palestine war, and his election as president of the Cairo Officers' club had been regarded as a sign of the discontent of the younger officers. The military seized a number of important points in the capital, including the broadcasting station, from which at 7 A.M. General Naguib announced that the army had taken control "to force a return to constitutional life and to purge the army of corrupt elements." His declaration that the army had no intention of interfering in politics was of necessity soon to be falsified. He proclaimed himself commander in chief and Maher succeeded Hilaly as prime minister with another cabinet of Independents. On July 26 the new regime demanded and obtained the abdication of King Farouk, who sailed from Alexandria the same day for Italy. His infant son was proclaimed king as Ahmed Fuad II, and a three-member council of regency appointed.

The extent of popular discontent with the old order was reflected in the general enthusiasm for General Naguib. All

parties hastened to acclaim his actions. Mustafa el-Nahas, the Wafd leader, whose most important rival had gone with the abdication, flew back from a European holiday to greet the general and subsequently declared that tyranny had been exterminated. But it quickly became clear that other, and perhaps less generally welcome, changes were in contemplation. The titles of pasha and bey were abolished, and the inquiry into scandals in respect of armaments was reopened under the charge of the original general prosecutor, Mohammed Azmi. He had previously been removed by the Wafd.

The new regime originated from the middle ranks of the army officers who had come to express the widespread discontent of the middle classes after the military failures of the Palestine war. Their aspirations were reflected in the declared general aims of the government—the attack on corruption in public life, the purging of the political parties and the breakup of the great estates.

It was probably the insistence upon the rapid dispossession of the landlords without regard to the effects on Egyptian economy which led, on Sept. 7, to the resignation of Aly Maher. General Naguib became prime minister. Most political parties removed leaders who were suspect to the new rulers of Egypt. But the Wafd made some show of resistance before the resignation of Fuad Serag ed-Din was followed by that of Nahas, on Oct. 6. Meanwhile, as unity against the old order gave place to differences of opinion as to future policy, divisions began to appear among the group of officers that had stood behind General Naguib. Col. Mohammed Rashad Mehanna was dismissed from the council of regency on Oct. 13 and Bahei ed-Din Barakat, the second regent, resigned, so that Prince Mohammed Abd el-Moneim remained the sole regent. General Naguib's personal power appeared to be growing. (See also AGRICULTURE; ANGLO-EGYPTIAN SUDAN; MIDDLE EAST; SUEZ CANAL.)

(H. S. D.)

Education.—Schools (state and private 1950–51): kindergarten 23, pupils 84,030; primary 6,583, pupils 1,332,543; technical 139, pupils 31,477; secondary 177, pupils 126,176; secondary boarding schools 13, pupils 22,944. Teachers' colleges 52, pupils 11,408. Universities 3, students 30,910. Other institutions of higher education 8.

Finance and Banking.—Budget: (1951–52 est.) revenue £E215,200,000, expenditure £E231,400,000. National debt (April 1948) £E125,000,000. Currency circulation (Aug. 1952) £E190,800,000. Gold and foreign exchange (March 1952) U.S. \$464,000,000. Bank deposits (May 1951) £E167,300,000. Monetary unit: Egyptian pound with an exchange rate of £E0.975 to the pound sterling and £E0.349 to the U.S. dollar.

Foreign Trade.—(1951) Imports £E232,100,000, exports £E203,100,000. Main sources of imports (1951): U.K. 18%; U.S. 15%; France 9%; Italy 7%. Main destinations of exports: U.K. 19%; India 15%; U.S. 10%; Italy 8%. Main imports: machinery and vehicles 17%; wheat 15%; metals and manufactures 7%. Main exports: cotton (raw) 81%; rice 7%.

Transport and Communications.—Roads (1947): 8,874 mi. Licensed motor vehicles (Dec. 1950): cars 59,000, commercial 17,000. Egyptian state railways (1949): 5,318 mi. Shipping: merchant vessels, 100 gross tons and over (July 1951) 55; total tonnage 92,813. Telephones (1951) 115,500. Radio receiving sets (1949): 183,000.

Agriculture.—Main crops (metric tons, 1951): maize 1,421,000; wheat 1,194,000; barley 99,000; millet and sorghum (1949) 567,000; rice, paddy 620,000; sugar, raw value 192,000; onions (1950) 217,000; potatoes 174,000; broad beans (1950) 232,000; lentils (1950) 47,000; cotton, ginned (1950) 377,000. Livestock (March 1947): cattle 1,321,000; sheep 1,875,000; goats 1,474,000; asses 1,125,000; horses 28,000; mules 12,000; camels 197,000; buffaloes 1,240,000; pigs 50,000; chickens 16,312,000. Fisheries (1948): total catch 48,350 metric tons.

Industry.—Crude oil production (1951): 2,328,000 metric tons. Raw materials (metric tons, 1949): phosphate rock 350,000, manganese ore 138,000, salt 350,000. Manufactured goods (metric tons, 1951) cement 1,130,400; cotton yarn 31,200; cotton piece goods 173,000,000 sq. m.

Eire: see IRELAND, REPUBLIC OF.

Eisenhower, Dwight D. (1890–), the 34th president of the United States, was born on Oct. 14 at Denison, Tex., but his parents moved to Abilene, Kan., when he was a year old. He was graduated from the U.S. Military academy at West Point, N.Y., in 1915, finishing 61st in a class of 164. In June 1942, during World War II, he



FORMAL PORTRAIT of Gen. and Mrs. Dwight D. Eisenhower with their daughter-in-law, Barbara Jean (née Thompson) and three grandchildren (left to right) Dwight David, Susan and Barbara Ann. Gen. Eisenhower's son, Maj. John Sheldon Eisenhower, was serving with the armed forces in Korea in 1952

as named Allied commander of the European theatre of operations and headed the invasions of North Africa and Europe that led to the defeat of Italy and Germany.

On returning to the United States at the end of the war, he became chief of staff of the army, taking an important part in the demobilization and unification of the armed forces. He resigned from active service on Feb. 7, 1948, to become president of Columbia university. He was recalled to active duty in Dec. 1950 as head of the North Atlantic treaty forces in Europe, and resigned that post as of June 1, 1952, to conduct a campaign for the Republican presidential nomination. He was nominated on July 11, and with his running mate, Sen. Richard M. Nixon (*q.v.*) of California, elected on Nov. 4.

On July 1, 1916, Eisenhower married Mamie Geneva Doud of Denver, Colo. Their first son, Doud Dwight, died of scarlet fever at the age of three. A second son, John Sheldon Doud, was born in 1922. After graduation from West Point, he saw service in World War II and was serving in Korea at the time of his father's election.

Although Eisenhower had been mentioned as a presidential possibility before the end of World War II, he dismissed that idea when, in 1948, many prominent Democrats proposed him as their candidate. He declared that he did not believe a military man should serve in that position except under extraordinary circumstances. When he first registered as a voter in New York in 1948, he did not list himself as a member of any party.

In Jan. 1952 Sen. Henry Cabot Lodge of Massachusetts announced that he would enter Eisenhower's name in the first presidential primary of the year in New Hampshire. At Paris, Eisenhower confirmed Lodge's statement that he was a Republican and also said that he would accept the nomination, if it were offered, but that he would not conduct a preconvention fight for it. At that time many of his backers thought that his prestige

alone would enable him to gain the honour in a "complete draft."

But they were forced to modify their strategy when Sen. Robert A. Taft of Ohio began to wage an aggressive campaign. Although Eisenhower carried the New Hampshire, New Jersey, Massachusetts and Pennsylvania primaries, Taft won in Nebraska and showed strength in the middle west. In early April Eisenhower's resignation as supreme commander, Allied powers in Europe, was announced, to be effective June 1. Asking inactive status, he said he would resign completely only if he were nominated. He returned to the United States on June 1.

He opened his campaign inauspiciously on June 4, when he dedicated an Eisenhower museum at Abilene. Heavy rains marred the affair, and his drenched civilian clothes stripped him of military glamour. He spoke haltingly and in generalities on the issues of inflation, bureaucracy, corruption and "class antagonisms threatening the American way of life."

In a newspaper interview on the following day, in which he showed talents that developed in later stages of the campaign, he gave his views on major issues. He said that he had no prescription for ending the Korean war, but called the loss of China an "international disaster"; that he would summon the "best minds" to Washington, if elected; that he backed the administration's policy of collective security in Europe; that he favoured a free economy and a minimum of legislative controls; that he would not scrap the social and economic gains achieved under Franklin D. Roosevelt and Harry S. Truman; that he would drive Communists from government without endangering civil liberties; that he had no panacea for peace, but was willing to confer with Joseph Stalin.

In order to contribute to party unity, he conferred with Senator Taft in New York in September, a reconciliation which provoked Democratic charges that he had become the "captive" of his convention rival. When he endorsed other midwest senators noted for conservative and isolationist views, he was assailed as having surrendered to party reactionaries.

Eisenhower waged a tireless and extensive campaign, travel-

ling 50,000 mi. and making more than 200 speeches. He drew vast crowds on an invasion of the deep south. Toward the close of the contest, he concentrated on Truman's alleged "coddling of Communists" and foreign policy features, especially in the far east.

His Nov. 4 triumph was interpreted as a tribute to his personality, his qualities of leadership and the belief that he would satisfy the widespread demand for a "change at Washington," for he ran far ahead of the party's state and national candidates almost everywhere. He carried 39 states against 9 for Gov. Adlai E. Stevenson, the Democratic nominee; he won Virginia, Florida and Texas, and almost all the normally Democratic border states. The popular vote, the largest ever cast, was 33,927,549 for Eisenhower and 27,311,316 for Stevenson.

(See also ELECTIONS, U.S.; POLITICAL PARTIES, U.S.; UNITED STATES.) (R. Tu.)

Elections, U.S. The year 1952 was an election year for the American people. For a period of ten months issues, personalities and parties in successive elections at all levels and of varying degrees of finality filled the newspapers and were given wider attention on the air and on the screen than in any previous year in United States history. The outcome, measured in votes cast, indicated that this concentration of interest on politics had been widespread, and that it did not diminish with the national election on Nov. 4.

The year began with interest in party primaries for the choice of presidential convention delegates. The actual voting in the states extended over the period from March 11 to June 3 in the following order: New Hampshire, Minnesota, Nebraska, Wisconsin, Illinois, New Jersey, Pennsylvania, New York, Massachusetts, Maryland, Ohio, West Virginia, Oregon, Florida, California and South Dakota. Primary elections were optional in three other states, Alabama, Arkansas and Georgia, and were set by state committees. Fifty-seven primary elections in senatorial contests, in contests for congressional nominations and for state officers were held in the period between Feb. 19 and Sept. 24.

Maine, in September as usual, held its state election and elections in senatorial and congressional contests. In the vote of Sept. 8 the Republicans won all contests, selecting one senator and three representatives. The margin of victory was not so great as the Republican leaders had hoped, and this fact gave some comfort to the Democrats. A day later the primaries in Wisconsin gave an impressive victory to Sen. Joseph R. McCarthy, who had been under unusual fire because of the nature of his attacks upon "Communists." In Texas the Democratic state convention voted to support Gen. Dwight D. Eisenhower, the Republican candidate for president. In New Hampshire and Vermont Republican victories were foreshadowed, as in past years, in the primaries.

By Oct. 13 the elections (and primaries followed by no contests) had designated 82 to membership in the house of representatives. Seventy-five of these were Democrats, most of them from the southern states. Seven were Republicans, for 4 of whom there had been no contest and 3 of whom had won in the September elections in Maine. Two seats in the senate had been won by Republicans. Frederick G. Payne in Maine and William F. Knowland in California ("elected" in the primary which gave him both major party nominations). In Mississippi, Texas and Virginia, the Republicans offered no opposition to the Democratic senatorial candidate. In 11 southern states the Republicans had not entered candidates for the house of representatives in 70 districts. Primary contests in California, due to cross filing, yielded 6 Democrats and 7 Republicans "without party affiliation" in the final election and therefore "elected" in the primary.

In the presidential election in November there was no "minor" party interest and uncertainty as there had been for years earlier. At that time the candidacy of Henry A. Wallace on the Progressive ticket and of J. Strom Thurmond on the States' Rights Democrat ticket had appeared to weaken the major party appeal—the first in the north, the second in the south. There were, however, ten nominees for the presidency in 1952 from long familiar parties (Progressive, Prohibition Socialist and Socialist Labor), and from less well known groups (Socialist Worker, Church of God Bible, Greenback, Vegetarian, Washington Peace and Poor Man's). The 12 nominees were

Dwight D. Eisenhower	Republican
Adlai E. Stevenson	Democrat
Vincent W. Hallinan	Progressive
Darlington Hoopes	Socialist
Farrell Dobbs	Socialist Workers
Homer Tomlinson	Church of God Bible
Eric Hass	Socialist Labor
Fred C. Proehl	Greenback
Stuart Hamblen	Prohibition
Herbert Holdridge	Vegetarian
Ellen Jensen	Washington Peace
Henry Krajewski	Poor Man's

Attempts to organize would-be supporters of Gen. Douglas MacArthur failed to secure any recognition from him. Although workers on his behalf had formal organization in 7 states (Missouri, Arkansas, Texas, North Dakota, Washington, California,

Table I.—The Vote for President by States, 1952

State	Republican	Popular vote Democratic	Other*	Electoral vote Republican	Democrat
Alabama	149,231	275,075	1,814	—	—
Arizona	152,042	108,527	—	4	—
Arkansas	177,155	226,300	1,345	—	—
California	2,897,310	2,197,548	46,991	32	—
Colorado	379,782	245,504	4,817	6	—
Connecticut	611,012	481,649	4,250	8	—
Delaware	90,059	83,315	636	3	—
Florida	544,036	444,950	—	10	—
Georgia	198,979	452,323	1	—	—
Idaho	180,707	95,081	466	4	—
Illinois	2,457,327	2,013,920	9,811	27	—
Indiana	1,136,259	801,530	17,536	13	—
Iowa	808,906	451,513	8,354	10	—
Kansas	616,302	273,296	6,568	8	—
Kentucky	495,029	495,729	2,390	—	—
Louisiana	306,925	345,027	—	—	—
Maine	232,353	118,806	627	5	—
Maryland	499,424	395,337	7,313	9	—
Massachusetts	1,292,325	1,083,525	7,548	16	—
Michigan	1,551,529	1,230,657	16,406	20	—
Minnesota	763,211	608,458	7,814	11	—
Mississippi	112,966	172,553	—	—	—
Missouri	959,429	929,830	2,803	13	—
Montana	157,394	106,213	1,430	4	—
Nebraska	421,603	188,057	—	6	—
Nevada	50,502	31,688	—	3	—
New Hampshire	166,289	106,663	—	—	—
New Jersey	1,374,613	1,015,902	29,039	16	—
New Mexico	132,170	105,661	777	4	—
New York	3,952,815	3,104,601†	70,825	45	—
North Carolina	558,107	652,803	—	—	—
North Dakota	191,712	76,694	1,721	4	—
Ohio	2,100,456	1,600,302	—	25	—
Oklahoma	518,045	430,939	—	8	—
Oregon	420,815	270,579	3,665	6	—
Pennsylvania	2,415,789	2,146,269	18,504	32	—
Rhode Island	210,935	203,293	270	4	—
South Carolina	158,312‡	173,007	9,802	—	—
South Dakota	203,857	90,426	—	4	—
Tennessee	446,147	443,710	2,696	11	—
Texas	1,102,878	970,128	3,840	24	—
Utah	194,190	135,364	—	4	—
Vermont	109,717	43,355	485	3	—
Virginia	349,037	268,677	1,975	12	—
Washington	599,107	492,845	10,756	9	—
West Virginia	419,970	453,578	—	—	—
Wisconsin	979,744	622,175	5,451	12	—
Wyoming	81,047	47,934	270	3	—
Totals	33,927,549	27,311,316	308,996	442	—

*Blank and void ballots in large numbers in New York and Massachusetts and to a small degree in some other states are not included in the above table in the "other" column. They go to make up the total voter turnout in the nation, but not the actual vote for president. "Blanks" are ballots marked for various state and local candidates and unmarked for the presidential column. "Voids" are ballots thrown out for improper marking, etc.

†New York's Democratic vote included 416,711 Liberal party votes for Gov. Stevenson.

‡South Carolina's Republican vote of 158,312 is actually the vote for "Independent" electors for Eisenhower. It is placed in this column because it is the highest vote for a Republican candidate got in the state and is the one counted officially toward his national popular total. Another state of electors under the Republican label polled only 9,801 votes—these are placed in the state's "other" column along with a single minor party vote—9,801 cannot be added to the Eisenhower total because they are votes for a separate list of electors.

Tabulated by the Associated Press from state canvassing board reports.



Above, left: SEN. RICHARD NIXON, Republican vice-presidential nominee in 1952, as he appeared before a nation-wide television audience on Sept. 23 to explain his expense fund which had been sharply criticized during the presidential campaign

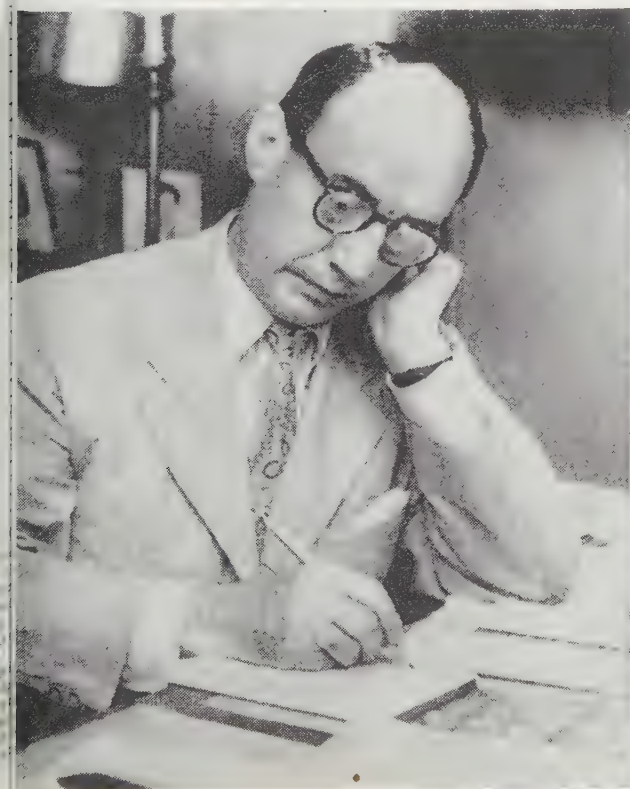


Above, right: SEN. ROBERT A. TAFT (right) congratulating General Eisenhower after the Republican nominating convention selected Eisenhower for its presidential candidate on the first ballot, July 11, 1952

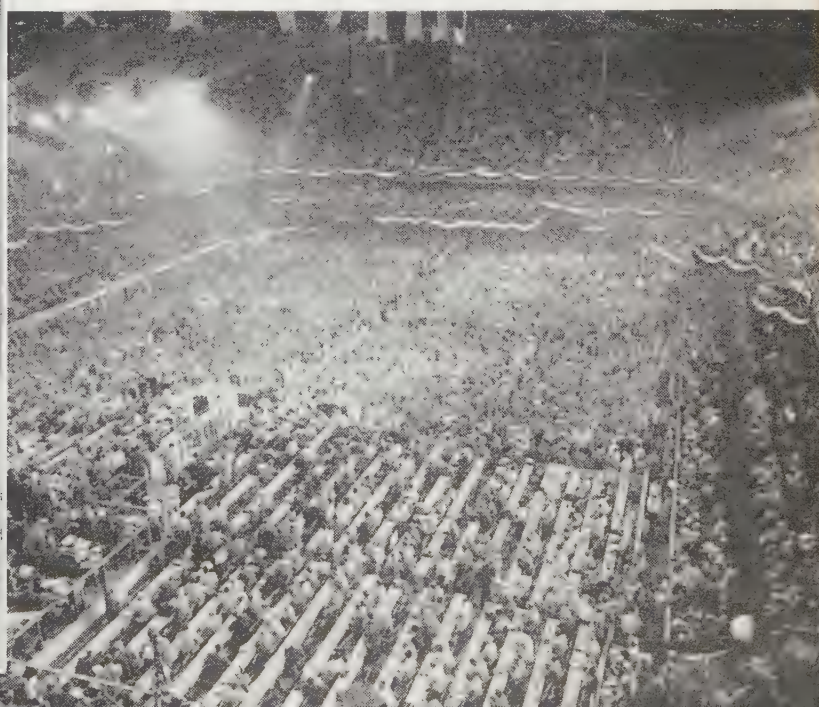


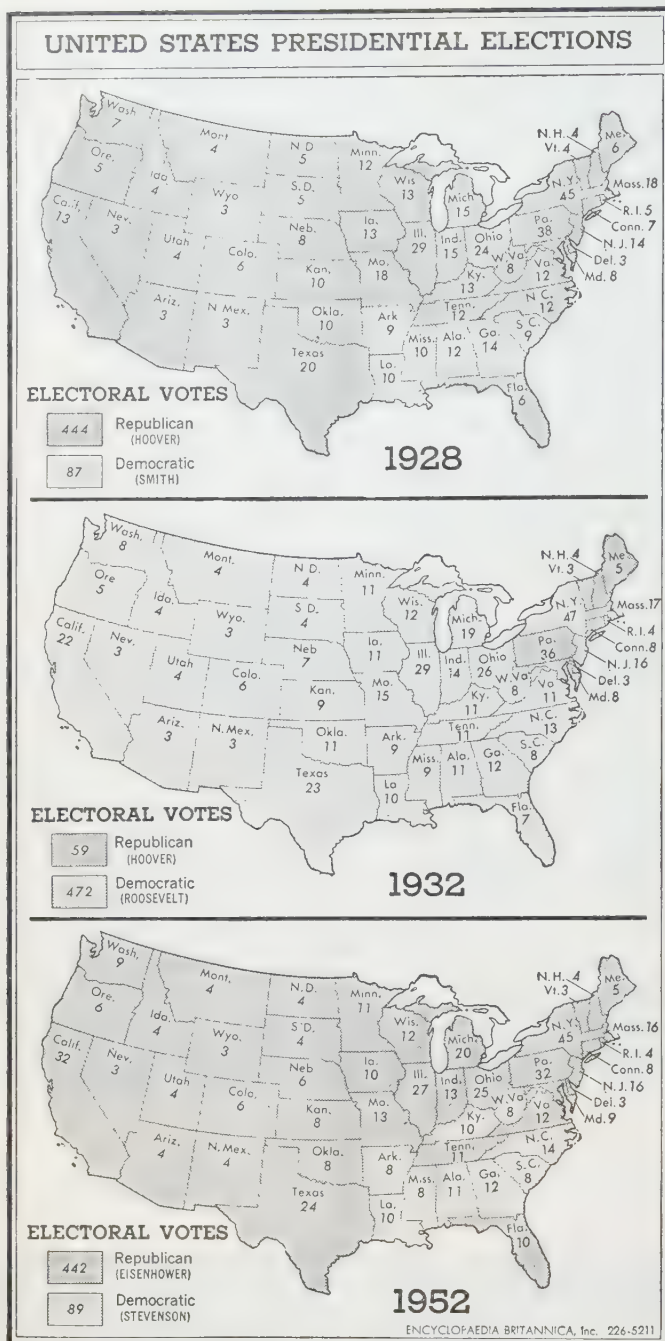
Right: GEN. DWIGHT D. EISENHOWER speaking from the rear platform of his train at a whistle stop in Nebraska while campaigning for the presidential nomination in July 1952. After his victory on Nov. 4, he became the 12th general to be elected president of the United States

Below: GOV. ADLAI E. STEVENSON of Illinois working on a Labour Day speech during his campaign as Democratic candidate for the presidency in 1952



Below: VIEW OF THE CONVENTION floor, visitors' galleries and press section (foreground) as the 1952 Republican national convention opened at the International amphitheatre, Chicago, Ill.





and Tennessee) under various designations including America First, Christian Nationalist and Constitution; and although it was expected that votes would be "written in" in 13 states—the outcome proved that such MacArthur support had no effect upon the final result in any state.

On the eve of the final vote (Nov. 4) there was a general opinion, aside from the political managers, that the presidential election would be close; that the defection of Republican Sen. Wayne Morse of Oregon (made final on Oct. 24) seriously threatened the probability of a Republican majority in the new senate; finally that only a Republican landslide would make at all possible a Republican majority in the house of representatives.

The vigour with which the election campaign was concluded was indicated by the fact that 75,600,000 names were on the registration lists, abnormally large in every section of the country outside the south.

The vote in the presidential election was cast in 146,370 precincts. Of this vote Eisenhower had 33,927,549; Stevenson,

27,311,316; and candidates for the minor parties, 308,996. The electoral vote, which reflects victory by states, was 442–89, Stevenson carrying only nine of the southern and border states. The percentage of the total popular vote going to the winner was 55.1. Stevenson, however, had 3,200,000 more votes than were cast for the Democratic winner, Harry S. Truman, four years earlier, and 44.4% of the total vote of 1952.

All agreed that it was a great personal triumph for Eisenhower, and the general feeling was that it was an overwhelming repudiation of the Truman administration. The house of representatives was to have a slender Republican majority. As had been anticipated, a senate majority was in doubt. Although Connecticut had elected two Republican senators and Nevada had elected a Republican, the distribution was 48–48, counting

Table II.—Senators Elected by States, 1952

Arizona	Republican	Barry Goldwater
California	Republican	*William F. Knowland
Connecticut	Republican	William A. Purtell
Delaware	Republican	Prescott Bush
Florida	Democrat	*John J. Williams
Indiana	Republican	*Spessard L. Holland
Kentucky	Republican	*William E. Jenner
Maine	Republican	John S. Cooper
Maryland	Republican	†Frederick G. Payne
Massachusetts	Democrat	J. Glenn Beall
Michigan	Republican	John F. Kennedy
Minnesota	Republican	Charles E. Potter
Mississippi	Democrat	*Edward J. Thye
Missouri	Democrat	John C. Stennis
Montana	Democrat	W. Stuart Symington
Nebraska	Republican	Michael J. Mansfield
Nebraska	Republican	*Hugh Butler
Nevada	Republican	Dwight Griswold
New Jersey	Republican	*George W. Malone
New Mexico	Democrat	*H. Alexander Smith
New York	Republican	Dennis Chavez
North Dakota	Republican	Irrving M. Ives
Ohio	Republican	*William Langer
Pennsylvania	Republican	*John W. Bricker
Rhode Island	Democrat	*Edward Martin
Tennessee	Democrat	*John O. Pastore
Texas	Democrat	Albert Gore
Utah	Republican	Price Daniel
Vermont	Republican	*Arthur V. Watkins
Virginia	Democrat	*Ralph E. Flanders
Washington	Democrat	*Harry F. Byrd
West Virginia	Democrat	Henry M. Jackson
Wisconsin	Democrat	*Harley M. Kilgore
Wyoming	Republican	*Joseph R. McCarthy
		Frank A. Barrett

*Re-elected.
†Elected in September.

Table III.—Party Distribution in the House of Representatives by States, Dec. 1, 1952

State	Democrats	Republicans	State	Democrats	Republicans
Alabama	9	0	Nebraska	0	4
Arizona	1	1	Nevada	0	1
Arkansas	6	0	New Hampshire	0	2
California	11	19	New Jersey	5	9
Colorado	2	2	New Mexico	2	0
Connecticut	1	5	New York	16	27
Delaware	0	1	North Carolina	11	1
Florida	8	0	North Dakota	0	2
Georgia	10	0	Ohio	6	16
Idaho	1	1	Oklahoma	5	1
Illinois	9	16	Oregon	0	4
Indiana	1	10	Pennsylvania	11	19
Iowa	0	8	Rhode Island	2	0
Kansas	1	5	South Carolina	6	0
Kentucky	6	2	South Dakota	0	2
Louisiana	8	0	Tennessee	7	2
Maine	0	3	Texas	22	0
Maryland	3	4	Utah	0	2
Massachusetts	6	8	Vermont	0	1
Michigan	5	13	Virginia	7	3
Minnesota	4	5	Washington	1	6
Mississippi	6	0	West Virginia	5	1
Missouri	7	4	Wisconsin	1	9
Montana	1	1	Wyoming	0	1
			Totals	213	221

Senator Morse as not voting with the Republicans, which would provide a tie in the senate, which could be broken by the deciding vote of the new vice-president, Richard M. Nixon.

Thirty-five senators were elected in the course of the year. Republicans with 23 winners gaining 1 seat despite the defection of Sen. Wayne Morse of Oregon to an "independent" position shortly before the November election. The Democrats, claiming 12 winners, lost 2 seats in the senate.

Democratic senators who were defeated in 1952 included Ernest W. McFarland of Arizona, William Benton of Connecticut, T. R. Underwood of Kentucky, Blair Moody of Michigan,

and Joseph C. O'Mahoney of Wyoming. Republican senators who lost the election were Henry Cabot Lodge, Jr., of Massachusetts, James P. Kem of Missouri, Zales N. Ecton of Montana and Harry P. Cain of Washington. Noteworthy was Republican Sen. William Jenner's victory over Democratic Gov. Henry F. Schricker of Indiana, who was a favoured nominee for the senate. Senator McCarthy of Wisconsin, although re-elected, did not poll the heavy vote anticipated because of the great endorsement given him in the primary.

In the 83d congress, one Independent (Frazier Reams of Ohio) retained his seat, won in 1950 and again in 1952, in a contest against both Democratic and Republican nominees. The summary for the house stood on Dec. 1, 1952, as 213 Democrats and 221 Republicans. Although the majority for the Republicans was one-half the majority held by Democrats in the 82nd congress, there could be no doubt that the Republicans would organize the house, the first time since their mid-term victory in 1946.

Despite the overwhelming interest in the presidential contest, there had been throughout the year vigorous campaigning in 30

gubernatorial contests. The results showed victories for the Republicans in two-thirds of these contests.

The distribution of the presidential vote showed, first of all, that the Republican nominee had run far ahead of his ticket. An examination of the vote by state and county, and in particular by metropolitan area, seemed to show that the great increase in vote did not go to the Democratic nominee, as had been freely predicted even by neutral observers. Political commentators appeared to agree that a large number of organized labour votes in the industrial centres had not gone to the Democratic nominee, who had been endorsed by the leaders of the three large labour organizations. It seemed probable that a considerable portion of the Negro vote, which had shown large increases in northern cities, had broken away from the Democratic party. Apparently a majority of the farmers, as represented by organized groups, had returned to the Republicans. Notably, previous patterns of voting in distinctive geographical areas had been broken by the continued and accelerated westward movement of population. Finally—and a significant portent for the future—registration by party apparently was no longer a safe guide as to final party voting, as shown particularly in California.

As was to be expected, many assertions were made after the result of the election became known to the effect that in great numbers women and new voters of both sexes had supported the Republican ticket because of the unpopularity of the long-continued war in Korea. There was no acceptable proof of this. Nor was the assertion that the defeat of Stevenson in Florida, Virginia and Texas was caused by a "new ferment in politics" backed by substantial evidence. One of the wisest comments was to the effect that the combination of special interests—radical (particularly labour), conservative (represented by southern states) and moderate (substantially the city population)—that had so long given majority support to Franklin D. Roosevelt and then Truman had been broken. This, more than anything else, had given to the Republican ticket "the endorsement of the American electorate on a truly national basis."

Not until Dec. 15 (the first Monday after the second Wednesday in December) did the state electors meet in the respective state capitals. Their votes were transmitted to Washington, D.C., and on Jan. 6, 1953, at a joint meeting of senate and house (of the expiring 82nd congress), they were counted and

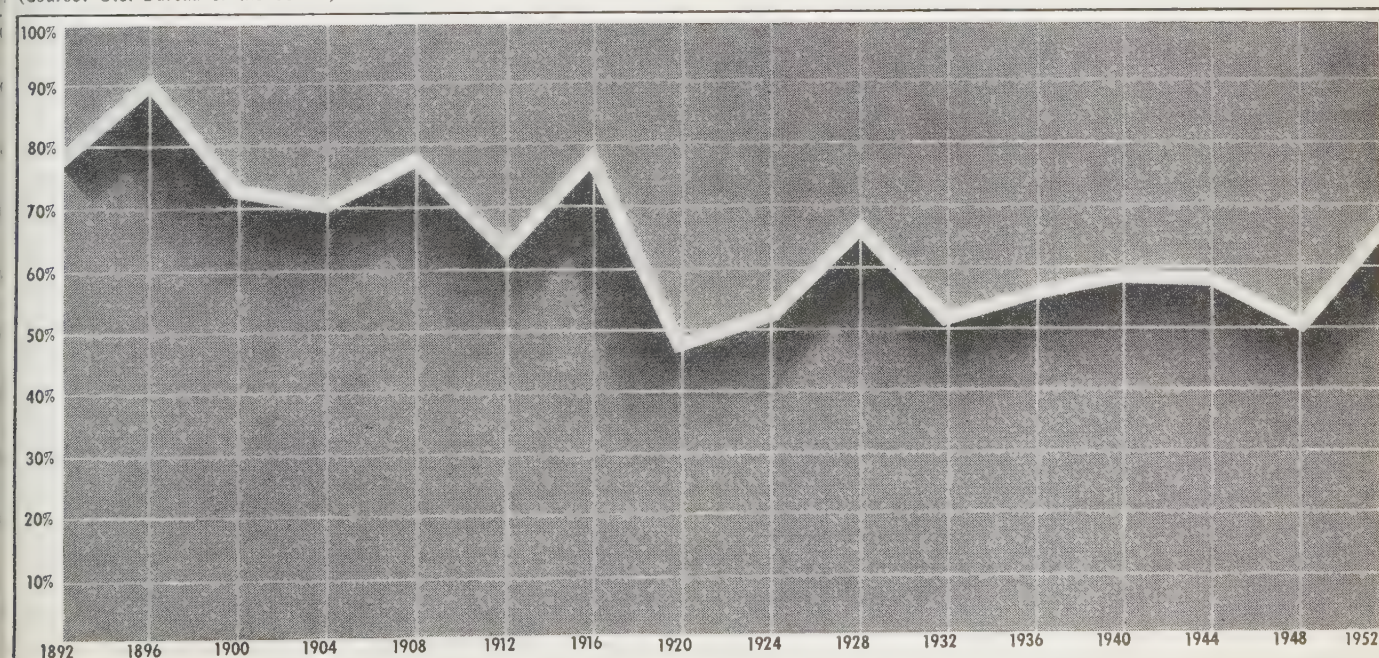
Table IV.—Governors Elected by States, 1952

Arizona	Republican	*Howard Pyle
Arkansas	Democrat	Francis Cherry
Colorado	Republican	*Dan Thornton
Delaware	Republican	J. Caleb Boggs
Florida	Democrat	Dan McCarthy
Illinois	Republican	W. G. Stratton
Indiana	Republican	George N. Craig
Iowa	Republican	*William S. Beardsley
Kansas	Republican	*Edward F. Arn
Maine	Republican	†Burton M. Cross
Massachusetts	Republican	Christian A. Herter
Michigan	Democrat	*G. M. Williams
Minnesota	Republican	*C. Elmer Anderson
Missouri	Democrat	Phil M. Donnelly
Montana	Republican	J. Hugo Aronson
Nebraska	Republican	Robert B. Crosby
New Hampshire	Republican	Hugh Gregg
New Mexico	Republican	*Edwin L. Mechem
North Carolina	Democrat	William B. Umstead
North Dakota	Republican	*Norman Brunsdale
Ohio	Democrat	*Frank J. Lausche
Rhode Island	Democrat	*Dennis J. Roberts
South Dakota	Republican	*Sigurd Anderson
Tennessee	Democrat	Frank G. Clement
Texas	Democrat-Republican	*Allan Shivers
Utah	Republican	*J. Bracken Lee
Vermont	Republican	*Lee E. Emerson
Washington	Republican	*Arthur B. Langlie
West Virginia	Democrat	William C. Marland
Wisconsin	Republican	*Walter J. Kohler, Jr.

*Incumbent.

†Elected Sept. 8.

PERCENTAGE OF THE VOTING population which went to the polls in U.S. presidential elections, 1892–1952. Women received the franchise in 1920 (Source: U.S. Bureau of the Census)



the result proclaimed.

On Nov. 5, the day following the election, President Truman had sent to General Eisenhower the following message: "Congratulations on your overwhelming victory. The 1954 budget must be presented to the Congress on Jan. 18. All preliminary figures have been made up. You should have a representative meet with the Director of the Budget immediately. The Independence will be at your disposal if you still desire to go to Korea." This message underlined the vital importance of joint pronouncements in the period prior to inauguration of the new president on Jan. 20. The reply of General Eisenhower indicated his appreciation of the situation and emphasized his plan to go to Korea. President Truman then invited General Eisenhower to a conference at the White House to make "clear to all the world that this nation is united in its struggle for freedom and peace." This conference was held on Nov. 18. (See also COMMUNISM; DEMOCRACY; POLITICAL PARTIES, U.S.; UNITED STATES; and under various states.) (E. E. R.)

Electrical Industries. The continued high level of general business activity during 1952 was reflected in the record activity of the electrical industry.

Production of electric energy by electric utilities in the United States totalled 388,490,903,000 kw.hr. during that year. This was an increase of 8.1% over the 359,289,919,000 kw.hr. produced during 1951. Electrical power plants of industrial concerns, including the stationary plants of electric railroads and railways, produced an additional 62,082,402,000 kw.hr. during the year. The total production of electrical energy was therefore 450,573,305,000 kw.hr., an increase of 6.9% over the 421,341,383,000 kw.hr. produced during 1951.

Of the total energy produced by electric utilities for the public supply 280,830,635,000 kw.hr., or 72.5%, was generated by fuel-burning power plants. An additional 107,660,268,000 kw.hr. was generated by water power plants.

Net imports of electrical energy from Canada increased 19.9% from 1,574,809,000 kw.hr. to a record 1,887,809,000 kw.hr. during 1952.

Coal consumption by electric utility power plants during 1952 reached 105,144,529 tons. This was 1.5% greater than the 103,609,993 tons used during 1951. The use of gas as a fuel by the nation's electric utilities increased 4.7% from 722,504,482,000 cu.ft. during 1951 to 856,670,307,000 cu.ft. during 1952.

This increase in the use of gas was offset by a marked decrease in the consumption of fuel oil, amounting to 8.8%. During 1952, 60,413,747 bbl. were consumed as against 65,504,564 bbl. during 1951.

The quantity of coal and estimated coal equivalent of other fuels consumed during 1952 amounted to approximately 155,604,000 tons.

Of the total energy output during 1952, privately owned electric utilities produced about 81%. Plants owned by rural electric co-operatives, municipalities, public utility districts, state projects and the federal government produced the remainder.

Power Plant Capacity.—Reports received by the Federal Power commission during Oct. 1952 indicated that the installed capacity of generating plants in utility service totalled 78,757,545 kw. on Sept. 30, 1952. The installed capacity a year earlier was 74,291,432 kw., indicating an increase of 4,466,113 kw. during the 12-month period.

Of the total capacity installed on Sept. 30, 1952, 19,593,861 kw. were installed in hydroelectric stations, 57,079,838 kw. in steam stations and 2,083,846 kw. in internal-combustion engine stations.

Preliminary estimates set the noncoincident peak load at 80,000,000 kw., indicating an increase of 13.6% over the 70,400,000

kw. noncoincident peak experienced during 1951.

Ratios of fuel and hydro generating capacity remained little changed in 1952 over 1951. In the earlier year, fuel-burning capacity was 74.9% of the total and hydro capacity 25.1%. In 1952 the ratios were 75.1% and 24.9%.

Private companies owned approximately 80% of the nation's generating capacity. Ownership of the remaining capacity was divided among the rural electric co-operatives, municipalities, public power districts, state agencies and the federal government.

Electricity Sales.—Electric utility customers purchased 333,537,083,000 kw.hr. during 1952. This was an increase of 8.5% over the 307,460,889,000 kw.hr. purchased during 1951. Sales of electrical energy to residential customers showed the largest increase, 13.5%. Sales to this class of customers totalled 83,699,914,000 kw.hr. during 1952, and 73,715,018,000 kw.hr. during 1951. During 1952 the sale of electrical energy to residential customers accounted for 25.1% of the total.

Sales of electric energy to large industrial users accounted for 48.8% of the total, 163,238,211,000 kw.hr. This was an increase of 6.6% over the 153,167,816,000 kw.hr. sold during 1951 to this class of customers.

The average residential use of electricity rose from 1,947 to 2,119 kw.hr. per customer, an increase of 172 kw.hr.

Revenues.—Customers paid the suppliers of electricity \$5,960,856,900 in 1952, almost \$500,000,000 more than in 1951, a 9% increase. This was associated with an 8.5% increase in sales.

Residential customers continued to enjoy a decrease in the unit price they paid for electrical energy, 2.77 cents during 1952 as against 2.83 cents during 1951. Because of their increased use of electricity, 2,119 kw.hr. in 1952 against 1,947 kw.hr. during 1951, residential customers paid an average annual bill of \$58.70, contrasted with a bill of \$55.10 during 1951. This was an increase of 6.5%.

Residential customers during 1952 contributed the largest share of any class of customers to the total revenue of the electric power industry, \$2,321,031,400. This was 39% of the total.

Users.—The number of electric utility customers as of Sept. 1, 1952, was 47,910,344, an increase of 1,695,693 since 1951. The largest increase continued to be in the residential class which rose 1,538,011 to total of 40,181,786. Industrial and commercial customers rose from 5,765,368 to 5,878,925 during 1952.

Electrical Manufacturing.—Manufacture of heavy electric power equipment, which suffered severe setbacks in 1951 because of material shortages, proceeded at an accelerated rate during 1952. This was made possible by improvements in the material situation. Production schedules were at peak levels. Total capacity of electric generating equipment shipped during 1951 was 7,528,100 kw. Reports received from manufacturers early in the year indicated that during 1952, 12,416,500 kw. had been shipped or were scheduled for shipment during 1952.

During the first half of 1952 manufacturers of refrigerator sold an estimated 1,700,000 units. Sales during the second half of 1952 were expected to equal those of the first half. Sales during 1951 totalled 4,075,000 units. Sales by manufacturers of television sets were approximately 2,300,000 during the first half of 1952. Sales during the second half of 1952 were approximately 2,500,000. This indicates a drop in sales during 1952 of 585,000 sets from the 5,385,000 sets sold during 1951. (See also PUBLIC UTILITIES; RURAL ELECTRIFICATION; TENNESSEE VALLEY AUTHORITY.) (AR. MO.)

Canada.—Pressed by urgent demands from a booming economy, which ran nearly 200,000,000 kw.hr. above the 1951 figure, the electrical generating industry expanded in practically every province. This increase was reflected in the fact that all

though the export of power to the United States was 100,000,000 kw.hr. per month greater in 1952 than in 1951, the export measured in percentage of national output fell to 4.5% in mid-1952 compared with 6.2% in 1944. The bulk of the increase in production capacity came from hydroelectric expansion in Ontario, where new sources permitted production to rise 77% above 1951, which meant that Ontario was producing 30.3% of the national total, against 25% in 1944. Quebec, however, retained its lead in production by accounting for 51% of the national total. The most spectacular production gains came from British Columbia, where the 1952 output was 80% greater than in 1951.

Production in 1952 of electrical equipment and general appliances totalled roughly \$750,000,000. Major plant extensions during 1952 were valued at \$35,000,000. (C. Cv.)

Great Britain.—In spite of growing competition from electrical manufacturers abroad, including that from Germany where rapid recovery from World War II was evident, English makers of heavy electrical plant were very fully occupied in 1952 and found it necessary to increase their manufacturing capacity to cope with the large orders received in the previous year. One large manufacturer, for example, received orders for 1,500,000 kw. of generating plant during 1951.

There were signs that the period of development of the gas turbine as a successful prime mover for electricity generation was ending. The construction and testing of several units of capacities between 500 and 3,600 h.p. was completed and the first 15,000-kw. gas turbine-driven generator for the British Electricity authority was put into commission.

A project for using atomic energy for power production was started, following encouraging results obtained at the Atomic Energy Research establishment at Harwell, and it was hoped to have the first experimental unit operating in 1956–57.

The national need to conserve coal aroused great interest in public discussions on the use of electricity for space heating. On one side it was claimed that the electrical energy used was generated largely from unexportable slack which could not easily be used otherwise, that the over-all efficiency of such heat production was about 20% and was rising with that of the power stations themselves. Against this it was urged that modern domestic stoves and grates, in the design of which outstanding progress had been made, had a high efficiency and should be widely used, especially since domestic electric heaters made a serious contribution to the peak demand. There was general agreement nevertheless that the use of electric heaters was economic for heating periods of a few hours' duration.

The report of the Ridley Committee on National Policy for the use of Fuel and Power resources, published in September, favoured competition between the various fuel and power industries. It considered that the 100% purchase tax on electric fires should continue because of their contribution to peak load problems but that the purchase tax on hot-cathode fluorescent tubes should be abandoned. Following their wide adoption in Ireland, thermal storage heaters, using solid blocks of high heat capacity and providing an off-peak load, were introduced in Great Britain for factory and office space heating.

The use of electricity for power purposes on farms was increasing rapidly, especially in crop drying; platform or in-sack grain driers were being widely adopted. Artificial illumination by high-pressure mercury vapour lamps was being used for seedlings. A newly built tomato packing station at Waltham Cross, believed to be the largest in Europe, used electrical methods extensively for handling, grading and cold storage.

Electrical methods of fishing in inland waters and for whaling were being developed.

At the fourth British Electric Power convention a group of

papers described the research being done by different sections of the industry. It was estimated that about 1% of the £1,000,000,000 annual turnover of the industry was being spent on research and development.

In the manufacturing industry, research was concerned with the development of steels and alloys for the construction of boilers and gas turbines. These materials, to withstand high temperatures and mechanical stresses, must have high creep- and corrosion-resistance and are difficult to work; research was proceeding on improved methods of working. A new nickel-chromium alloy, nimonic 95, was introduced.

Permalloy F, a new nickel-iron alloy with high permeability and low coercive force, was developed. In expectation of the use of high-voltage cables for underwater transmission, such as in the proposed channel crossing, co-operative research among cable manufacturers was in progress. The shortage and high price of copper and of dielectric materials encouraged research on the use of alternatives. Methods of construction using stranded aluminum conductors and aluminum sheaths were being investigated, as were the potentialities of plastic or synthetic dielectrics. Experiments were made on new applications of laminated wood insulators.

Research in lamp manufacturing was concerned with the many kinds of glass for new lamps operating under various conditions, with investigations on tungsten and molybdenum, on calcium halophosphate powders and other phosphors. The applications of lamps giving bactericidal radiation were being studied.

For the first six months of 1952 the volume of exports of electrical goods, apparatus and machinery was about 10% higher than the 1951 average. The total value of such exports for the month of July was £14,746,089, compared with £13,974,738 for July 1951. For electrical goods and apparatus, as distinct from machinery, India was the best customer in this month, with South Africa, New Zealand, Australia and Malaya following in that order.

For the first six months of the year the total value of electrical goods and apparatus exported to Norway was £974,891; the monthly average in 1938 was only £12,881.

The results of a statistical survey of shops showed that in metropolitan boroughs and towns of more than 100,000 inhabitants in Great Britain there were 15,566 retailers of electrical goods, appliances, accessories and fittings. The density was 3.2 shops per 10,000 persons. (E. W. G.)

Electric Transportation. The improvement in rapid transit facilities was the most significant development in electric transportation in the United States during 1952. Operations of electric surface railways were somewhat curtailed, following the trend in other recent years, but trolley coach operations continued to expand. Few significant changes occurred in the field of heavy electric traction.

Rapid Transit Lines.—Eight new rapid transit construction projects estimated to cost \$445,650,000 were approved by New York city's board of transportation. The most important of these was a proposed new trunk-line subway under Second avenue in the borough of Manhattan. The others were connections and extensions to existing routes. Approval by the board of transportation, however, was only the first step in a long and complicated process of obtaining approvals and consents. For that reason it was not anticipated that actual construction work would start in the near future.

Ground was broken early in the year for a \$30,000,000 rapid transit project at Cleveland, O. This was a new, east-west 13-mi. route on a private right-of-way, adjacent to the main-line railroads and passing through the downtown section of the city at Public square. Orders were placed for 70 P.C.C. (Presidents'

Conference committee) rapid transit cars for operation on the new line.

Opening of the East Boston tunnel extension represented the greatest transportation improvement in many years in the Boston, Mass., metropolitan area. About $2\frac{1}{2}$ mi. in length, this extension was partly underground and partly on the surface where it utilized the right-of-way of a former narrow-gauge steam railroad. Forty new P.C.C. rapid transit cars were provided for this operation and 24 older type cars were modernized and equipped with new motors.

Financing was arranged by the Chicago (Ill.) Transit board for the purchase of 300 new subway-elevated cars to operate the new rapid transit extension under construction in the median strip of the Congress street superhighway. With the delivery of these new cars, only 200 more units would be required to give the Chicago rapid transit system a complete equipment of all-metal cars. The Logan square-Milwaukee avenue subway completed its first year of operation in Feb. 1952. Its time-saving features proved very popular and attracted about 50% more riders than had used the elevated railway service which it replaced.

At Philadelphia, Pa., a proposal came before the city council for a ten-block extension of the Broad street subway to provide a link with the proposed South Philadelphia Delaware river crossing and the Schuylkill expressway. The cost of the project was estimated at about \$7,000,000.

The improvements in rapid transit facilities made during 1952 and other recent years had had little effect on the over-all extent of rapid transit facilities in the United States. At the beginning of 1952 there were 1,217 mi. of rapid transit track in operation compared with 1,230 mi. in 1935. During this period the number of rapid transit cars declined from 10,416 to 9,644. Those in service, however, were of somewhat larger capacity, so that the total carrying capacity remained about the same. The total number of passengers carried by rapid transit systems was 2,236,000,000 in 1935 and 2,189,000,000 in 1951, the latest year for which complete figures were available. Only in the matter of operating revenue had there been a marked change. As a result of an upward trend in fares, operating revenue increased from \$131,000,000 in 1935 to \$214,700,000 in 1951.

Suburban Electric Lines.—Occupying a place between rapid transit and electrified trunk-line railroad operation are a number of suburban electric lines. The largest of these, the Long Island railroad operating between New York city and many suburban communities, had been in financial difficulties for several years. During 1952 the Long Island Transit authority, created by the state of New York to work out a solution of the problem, presented a reorganization proposal under which outstanding obligations would be greatly reduced and replaced by 20-year bonds. The authority hoped, if the plan were approved, to modernize and rehabilitate the railroad, run it at a modest profit and ultimately lease or sell it to private enterprise.

Another suburban electric line which found itself in difficulties during the year was the Staten Island Rapid Transit railway. Permission was asked by the company to discontinue all passenger service and to limit its operations to freight haulage.

Surface Electric Railways.—A gradual reduction in the scope of operation of electric surface railways in the United States had been taking place for some time. This trend continued during 1952. Moderate amounts of street railway trackage were abandoned in Chicago, Ill., Boston, Mass., Pittsburgh, Pa., Minneapolis, Minn., Newark, N.J., Wilkes Barre, Pa., and elsewhere. In some instances trolley-coach service was substituted in place of rail service, and in other instances motor buses replaced electric cars. A number of interurban electric rail lines were

also abandoned during the year, being replaced by motor bus service.

Trolley Coach Operation.—In contrast to the steady decline in electric rail operations, there was a steady growth in electric trolley coach operations. With some 600 new vehicles of this type delivered in 1951, trolley coach operating companies expected to approach an all-time peak in the number of passengers carried in 1952. The previous peak year, according to statistics of the American Transit association, was 1949 when a total of 1,661,000,000 trolley coach passengers were carried.

An estimated total of 7,500 trolley coaches were expected to be in operation in the United States before the end of 1952, a figure almost equal to the number of surface electric railway cars. Continuous trolley coach expansion was anticipated because of the relatively low cost of operation of this type of vehicle and its universal popularity with the riding public.

At Detroit, Mich., a public opinion survey showed that more than 87% of the passengers riding trolley coaches were in favour of this type of service and would like to have more of it operated in the city. In Chicago, trolley coaches replaced motor buses on the 47th street line. The Chicago avenue line was also converted to trolley coaches during the year. At New Orleans, La., plans were completed for the substitution of trolley coaches in place of motor buses on the Tulane line. Boston, Indianapolis (Ind.), Wilkes Barre and Shreveport (La.) were among other cities which expanded their trolley coach operations during the year.

Estimates of electric transportation vehicle requirements for 1953 presented by the industry to the Defense Transport administration included 650 rapid transit cars, 50 P.C.C. street cars and 425 electric trolley coaches.

Heavy Electric Traction.—No developments of marked significance occurred in the field of heavy electric traction during 1952. One new electric locomotive was delivered and placed in operation. Test runs were made on the Great Northern and the New Haven railroads of a new type of electric locomotive equipped with alternating current commutator motors. The mileage of electrified trunk-line railroad track remained virtually unchanged.

(J. A. MI.)

Canada.—The increase in automobile ownership, a shortened work week, widespread fare increases and transit strikes curbed urban electrical transportation during 1952. The fare increase brought similar results in various cities: in Montreal, Quebec there was a decrease of 1,329,000 passengers in a 20-day period in October; in Ottawa, Ont., there were 359,982 fewer passengers during the first month (January) of the increase; in Toronto, Ont., there were 265,000,000 passengers (estimated) in 1952 against an actual total of 302,000,000 passengers in 1951. There were also fare increases in Kingston, Ont., Hamilton, Ont., Vancouver, B.C., New Westminster, B.C., and Calgary, Alta., and the results were similar. The Toronto transit strike of Jan. 4-22 resulted in a 15% drop in revenue when the service was resumed; patronage lost to other means of transport was slow in returning. By Feb. 1952 trolley bus monthly mileage throughout Canada approached half that of electric streetcars; since in Feb. 1948 streetcar mileage was ten times trolley bus mileage, a remarkable change in a relatively short time was indicated. To some extent, the conveniences of trolley travel, when compared with streetcar travel, were credited with helping to maintain electric transport earnings: urban revenues in Feb. 1952 totalled \$9,734,000 compared with \$8,709,000 in Feb. 1951; revenues in May 1952 were \$10,015,000 compared with \$9,208,000 in May 1951.

(C. CY.)

Europe.—Progress in electric traction during 1952 was again marked in those countries which already possessed considerable electrified systems. Developments in France were the most im-

interesting and the completion of the Paris-Lyons electrification and the agreement to apply the 50-cycle single-phase system to the Valenciennes-Thionville line were especially noteworthy. In the Netherlands, not only had the lines destroyed in World War II been re-electrified by 1948 but the postwar program, except for the section from Arnheim to Zwolle, had been completed. Electric trains on the principal main lines and diesel electric trains on branch lines had largely eliminated steam.

Improvements in design were directed largely to weight-saving and to the reduction of maintenance. This was illustrated by the French National railways' decision to build power bogie locomotives despite the excellent performance of the 2-D₀-2 type. Prototypes were under construction with several new features in mechanical design. Investigations into the 50-cycle system were continued on the Aix-les-Bains-Annecy line with locomotives and multiple unit stock using either multi- or single-anode rectifiers with D.C. traction motors or 50-cycle A.C. motors.

In Europe electric traction was decisively ahead of steam power in making the fastest timings and the greatest mileage runs at high speeds. This was largely because of the remarkable accelerations on the Paris-Lyons lines, but considerable credit must be given also to the great recovery in speed in Italy where the list was headed by the rapido from Piacenza to Bologna which covered 91.2 mi. in 74 min., an average of 73.9 m.p.h. Electric locomotive performance in Switzerland was high. With the new federal Re 4/4 B₀-B₀ locomotives of 57½ tons, speeds of 75 m.p.h. were sustained up a gradient of 1 in 100 with 300-ton trains.

(J. W. GR.)

The last London street railway car ran on July 5; the cars were replaced by buses. In Blackpool the first of a new class of single-deck streetcars, each having four 45 h.p. motors, were put in service. (See also LAW; RAILROADS.)

(E. W. G.)

Electrification, Rural: see RURAL ELECTRIFICATION.

Electronics. With the development of commercial jet planes that cruise at speeds of 500 m.p.h. or more, the problem of detecting possible obstacles ahead becomes even more important than with slower-moving aircraft. At such speeds warning is required not only of mountains and high ground but also of turbulent clouds.

To meet this need a British firm, E. K. Cole Ltd., Southend-on-Sea, Eng., developed an anticollision radar for commercial flights, which was tested by British Overseas Airlines corporation on one of their new Viking jet passenger planes. The device sent pulses of radio waves of 3-cm. length with a power of 10 kw., and it proved capable of reliably detecting cloud formations 40,000 ft. high at a distance of 40 mi. Clouds at 25,000 to 30,000 ft. in height could be detected at 10 to 30 mi.

An electronic airborne device for detecting radiations from the site of an atomic bomb blast, which had been used in checking effects of bombs used in tests by the Atomic Energy Commission at Eniwetok atoll, was announced when security regulations on it were lifted. Developed in the General Electric company's tube department, it is an ion chamber of much smaller size than other gamma-ray detectors of similar type and sensitivity.

Argon gas is compressed to 50 times atmospheric pressure in steel tube less than 7 in. in length and ¾ in. in diameter. Radiation permits the gas to conduct a current between two electrodes, and the amount of gamma radiation is registered on a meter. One form was used as a protective device in research planes flying high over the blast site immediately following the dispersion of the mushroom cloud, while another was used at a height of a few hundred feet to determine the intensity of radiation on the ground.

In the past the lives of many victims of sea disasters had been lost, even after the survivors were located from the air, because surface craft could not reach them in time. To prevent this the U.S. air force developed a 30-ft. lifeboat that could be carried by a B-29 to the place when it was needed, dropped to the water with a parachute, and then guided by radio from the mother plane to the survivors. The controls on the boat, which operate either by radio signals from the plane or automatically after having been set for a particular course, were designed by engineers of the Westinghouse Electric corporation, Pittsburgh, Pa.

A radarlike device that gives warning of automobiles, or even pedestrians, approaching a gatehouse while they are several hundred feet away, was put into use at the General Electric Research laboratory near Schenectady, N.Y. It was developed by W. C. White, C. L. Andrews and H. S. Lasher, utilizing some of the principles of the proximity fuse which, when attached to an anti-aircraft shell, make the shell explode when it merely comes near an aeroplane.

By means of an 18-in. parabolic reflector, a beam of 13-cm. radio microwaves is directed down the approach road. A vehicle approaching on the road returns an echo, which is picked up by the reflector and the transmitting antenna. The returning waves pass in and out of step with those going outward, every time the vehicle causing the echo moves through one wave length of about 5 in. The electronic circuit detects such changes and an alarm bell is sounded, thus warning the guard even though his attention might have been temporarily diverted.

A method of utilizing ultrasonic waves, which are like sound waves but of too high a frequency to be audible, to detect intruders in a closed room was developed by the Alertronic Protective Corporation of America, New York, N.Y. The waves are sent out from a transmitter and picked up by a receiver—some directly, others after they have been reflected from walls and other objects in the room, which set up a constant pattern as long as they are stationary. However, if some object or person moves, the motion alters the frequency of the reflected waves. The receiver detects such changes and operates an alarm.

Another possible use for ultrasonics, in detecting cancerous tissue in the body at an early stage, was developed by John M. Reid and John J. Wild, of the department of electrical engineering of the University of Minnesota, Minneapolis. They found that while such tissue does not show in X-rays, it does reflect ultrasonic waves more strongly than does normal tissue.

To test this they adapted a war-developed radar training device using ultrasonic waves in water to simulate radio waves in air. It yielded vibrations of 15,000 cycles per second in brief pulses, at the rate of 400 to 4,000 pulses per second. The waves were emitted from a crystal, thence transmitted through a column of water to the tissue being tested. The response was shown on the screen of a cathode ray oscillograph. In one case a brain tumour was located by such means, and an operation confirmed the location.

In order to get the best prices, tomato growers must carefully grade their product by colour, a task usually performed by cutting selected vegetables in half and comparing them visually with standard colour photographs. This may be speeded with electronic apparatus developed by Traver J. Smith of Magnuson Engineers, San Jose, Calif., in consultation with Richard A. Huggins of Huggins laboratories, Menlo Park, Calif.

The tomato halves are placed in a drawer which slides into the machine where they are illuminated. An arrangement of phototubes and light filters measures the relative reflectance for red light and blue light, the ratio being an index of the ripeness. Unripe tomatoes reflect blue light considerably better than red, but as they ripen the two colours are reflected more

nearly equally.

Another group in California, Industrial Electronic Engineers, Hollywood, devised a combination electronic and magnetic means of identifying unlabelled food cans. Fruits for canning must be processed and canned immediately, but steam and water used in cooking would remove any labels. However, there must be some way to show what a particular can contains.

So-called "tin" cans consist of sheet iron coated with tin, and the iron enables them to be magnetized. The new machine puts a group of magnetized spots on the base of the can, arranged in one of nine different patterns, each of which indicates contents of a particular kind. This is done as soon as the fruits are canned, before cooking. Though the heat partially destroys the magnetization, enough remains to be read off with another device.

The cans are rotated at 3,600 r.p.m., close to a group of coils, and as the magnetic spots pass the coils an alternating current is induced. Its frequency and other characteristics are automatically analyzed, thus showing the contents of the cans, which are then directed into the proper path.

A possible new use for electronic computing machines was in forecasting the weather. A group at the Institute for Advanced Study at Princeton university, Princeton, N.J., under the direction of John von Neumann, with the aid of Jule G. Charney who did the meteorological work, developed a special machine for a system of numerical forecasting which considers many more data than a human forecaster can utilize. It was estimated that an expert human calculator, working with a desk type machine, would take two years to complete a single day's forecast. In one test, however, the machine did the work in three hours, and it was estimated that the time could be reduced to less than an hour.

In Aug. 1952 the U.S. weather bureau announced plans to install such a calculator. This would prepare eight charts each day, for eight separate horizontal levels, from the ground up to 13,000 ft.

Another new computer, called RAYDAC (for Raytheon Digital Automatic Computer) and developed for the bureau of aeronautics of the department of the navy by the Raytheon Manufacturing company, Waltham, Mass., was intended to analyze the behaviour of guided missiles during test flights. It was said to "worry" about the results of its calculations through a checking system which enables it to recognize when it makes a mistake and then halt operation. The source of the error is shown the operator by indicators on the control panel. Meanwhile the work done up to that point is preserved so the machine can continue where it left off.

The important task of handling aeroplane passenger reservations was accomplished by another type of electronic "brain," called the "magnetronic reservisor," a joint development of the Teleregister corporation, New York, N.Y., and American Airlines. It was installed in the air line's offices at LaGuardia field, New York city. Formerly such reservations were made by several hundred clerks, answering phone calls from agents or passengers. The inventory of space available was kept on a large availability board on which about 2,400 separate unit plaques were posted.

In the new machine the inventory for ten days ahead is kept on two "memory" drums, revolving at 1,200 r.p.m. These are covered with a magnetic material, and the actual record consists of minute magnetized spots which are made, read or erased by a complicated electronic circuit. Ticket agents are provided with a small desk unit, connected over leased wires with the machine at LaGuardia field. The agent presses buttons to reach the machine and to request data. Then lights show the space available. Pressing more buttons records the reservations he

wishes to make. Cancellations may be effected in a similar way. Though developed for ticket reservations, the machine was said to be applicable in any business where a complicated inventory must be kept, subject to quick and accurate changes.

Electric sparks, controlled electronically, may be used to machine hard metals, in a device developed by Sparcatron, Ltd. of Gloucester, Eng. The piece of material to be machined and the electrode, which takes the place of the tool in conventional machines, are both immersed in a liquid dielectric which flows in order to carry away the disintegrated metal particles. The result from sparks produced at the rate of 12,000 to 100,000 per second. The workpiece has positive polarity and the electrode is negative, so there is maximum erosion of the work and very little of the tool.

A significant electronic development of recent years was the transistor, a tiny bit of plastic, wire and germanium, which could do much of the work formerly done by larger vacuum tubes. The General Electric company demonstrated a transistor megaphone which can amplify the speaker's normal voice into a loud shout. No external connections of any kind are required. The amplification is accomplished with transistors, and the small amounts of power which they need are supplied by tiny batteries inside the unit.

A new unit for use by musical organizations was an electronic drum developed by Harry Stockman of Stockman Electronic Research corporation, Waltham, Mass. An electronic circuit operates a leather-covered hammer which beats on the drum. It can develop higher beat rates than a human drummer, while volleys of beats may be repeated accurately and with the same quality. (See also STANDARDS, NATIONAL BUREAU OF.)

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(J. Sto.)

Elementary Education: see EDUCATION.

Elizabeth II (ELIZABETH ALEXANDRA MARY) (1926–) British queen, was born in London on April 21, the daughter of the duke and duchess of York, who later became King George VI and Queen Elizabeth. Her earliest years were spent principally at her father's London home and at the royal lodge at Windsor, and, during the summer months at Balmoral and at Glamis, the home of her grandfather, Lord Strathmore. Her general education was supervised by her governess, Marion Crawford. Her succession to the throne was at the time never looked on as more than a remote possibility, but with the abdication of Edward VIII her position as the eventual occupant of the throne seemed assured.

In the autumn of 1940 she made her first broadcast, a short talk to British children who were separated from their homes by the war, and her first public engagement without her parents was on May 31, 1944, when she was installed as president of the National Society for the Prevention of Cruelty to Children. On Nov. 20, 1947, she was married to the duke of Edinburgh, formerly Prince Philip of Greece, and on Nov. 14, 1948, gave birth to a son, Prince Charles Philip Arthur George. A daughter, was born to the royal couple on Aug. 15, 1950, and was christened Anne Elizabeth Alice Louise.

King George's illness in 1951 threw a heavy burden of work and anxiety on the princess, but after a delayed start she and the duke were able to make a tour of Canada, including a visit to Washington, D.C. She and the duke began on Jan. 31, 1952

Table I.—Number of Employees in Nonagricultural Establishments, by Industry Division, United States*

Industry division	(In thousands)			
	June 1952	May 1952	April 1952	June 1951
Total estimated employment	46,378	46,320	46,258	46,567
Mining	827	894	897	927
Contract construction	2,663	2,517	2,410	2,686
Manufacturing	15,487	15,671	15,784	15,956
Transportation and public utilities	4,163	4,138	4,098	4,161
Trade	9,836	9,744	9,817	9,732
Finance	1,978	1,959	1,953	1,893
Service	4,839	4,795	4,748	4,835
Government	6,585	6,602	6,551	6,377

*The estimates include all full- and part-time employees in private nonagricultural establishments who worked during, or received pay for, the pay period ending nearest the 15th of the month. Proprietors, self-employed persons, domestic servants and personnel of the armed forces are excluded. These employment series have been adjusted to bench-mark levels indicated by social-insurance agency data through 1947.

Source: United States Bureau of Labor Statistics, *Monthly Labor Review*.

from June 1951.

Females in the civilian labour force totalled 19,926,000 in June 1952, representing an increase of 459,000 over the June 1951 total of 19,467,000. The number of unemployed females declined from 813,000 in June 1951 to 680,000 in June 1952.

The number of employees in nonagricultural establishments was 46,378,000 in June 1952, a decrease of 189,000 from the total of 46,567,000 in June 1951. During this period the following divisions of nonagricultural employment showed an increase: transportation and public utilities (+2,000); trade (+104,000); finance (+85,000); service (+4,000); government (+208,000). These increases represented a continuation of the 1951 trend, although the rate of increase had declined considerably. Large declines in nonagricultural employment occurred in manufacturing (−469,000) and in mining (−100,000). Within the category of mining, the greatest declines occurred in bituminous coal (−72,900) and in iron mining (−27,300).

Approximately two-thirds of the decline in manufacturing employment between June 1951 and June 1952 occurred in the durable goods industries, where employment declined by 309,000. The declines were greatest in the primary metal industries (−412,000), fabricated metal products (−49,000) and automobiles (−55,000). The decline in employment in durable goods industries as well as the decline in mining were primarily the result of the steel strike which began on June 2, 1952, and continued until July 24, 1952.

Employment also declined by 160,000 in the nondurable goods

Table II.—Employees in Manufacturing, by Major Industry Groups, United States

Industry Group	(In thousands)				Net Change July 1951 to July 1952
	July* 1952	June 1952	May 1952	July 1951	
All manufacturing	15,104	15,487	15,680	15,813	−709
Durable goods	8,251	8,689	9,012	8,839	−588
Ordnance and accessories	79	80	78	47	+32
Lumber and wood products (except furniture)	766	772	709	813	−47
Furniture and fixtures	334	337	336	331	+3
Stone, clay and glass products	533	535	530	557	−24
Primary metal industries	920	945	1,342	1,341	−421
Fabricated metal products (except ordnance, machinery and transportation equipment)	906	970	981	991	−85
Machinery (except electrical)	1,605	1,642	1,651	1,597	+8
Electrical machinery	926	953	956	914	+12
Transportation equipment	1,409	1,672	1,649	1,490	−81
Instruments and related products	321	324	322	298	+23
Miscellaneous manufacturing industries	452	459	458	460	−8
Nondurable goods	6,853	6,798	6,668	6,974	−121
Food and kindred products	1,599	1,530	1,465	1,615	−16
Tobacco manufactures	86	85	85	81	+5
Textile mill products	1,174	1,181	1,178	1,262	−88
Apparel and other finished textile products	1,097	1,092	1,078	1,110	−13
Paper and allied products	471	480	476	493	−22
Printing, publishing and allied industries	771	771	766	758	+13
Chemicals and allied products	738	739	741	744	−6
Products of petroleum and coal	272	270	240	266	+6
Rubber products	257	270	269	271	−14
Leather and leather products	388	380	370	374	+14

*Figures for July 1952 are preliminary.

Source: United States Bureau of Labor Statistics, *Monthly Labor Review*.



ELIZABETH II, photographed in the Irish state coach, on her way to open parliament on Nov. 4, 1952, the first major state duty of her reign

to tour to Australia which she was to undertake on behalf of her father, but news of the king's death on Feb. 6 reached her at Kenya, on the first stage of their journey, and she returned to England on Feb. 7. On the following day, when she was proclaimed queen, she spoke to the accession council of privy councillors in St. James's palace.

Her first public engagement as queen was when she distributed the Maundy money in Westminster abbey on April 10. From the start of her reign she followed her father's practice of giving a weekly audience to the prime minister.

Elks, Benevolent and Protective Order of: see SOCIETIES AND ASSOCIATIONS, U.S.

Ellice Islands: see PACIFIC ISLANDS, BRITISH.

El Salvador: see SALVADOR, EL.

Embassies, United States: see AMBASSADORS AND ENVOYS.

Emigration: see IMMIGRATION AND EMIGRATION.

Employment. United States.—The civilian labour force (persons not in the armed forces and available for employment) numbered 64,390,000 in June 1952, which represented an increase of 607,000 over June 1951. (Data on the net strength of the armed forces and total labour force were not available after Jan. 1951.) Coupled with this increase in the civilian labour force was a decline in unemployment. The June 1952 total of 1,818,000 unemployed was 162,000 less than the June 1951 total of 1,980,000.

Males in the civilian labour force increased from 44,316,000 in June 1951 to 44,464,000 in June 1952. This increase of 148,000 reversed the decline of the preceding year period which was caused by the build-up of the armed forces following the outbreak of the Korean war. The number of civilian unemployed males in June 1952 was 1,138,000, a decline of 29,000



GRADUATING CLASS of engineers at Stevens Institute of Technology, Hoboken, N.J., listening to a representative of the General Electric company explain employee benefits and openings in 1952. An acute shortage of trained engineers was even greater in 1952 than in the preceding year

industries between June 1951 and June 1952. Gains in employment did occur in some nondurable goods industries such as printing, petroleum products and tobacco, but these were far outweighed by the losses in the textile, apparel and paper products industries.

Table III.—Indexes of Production Worker Employment and Weekly Pay Rolls in Manufacturing Industries*

(1947-49 average = 100)

Period	Employment	Weekly Pay Roll
1939 (average)	66.2	29.9
1945 "	104.0	87.8
1946 "	97.9	81.2
1947 "	103.4	97.7
1948 "	102.8	105.1
1949 "	93.8	97.2
1950 "	99.2	111.2
1951 "	105.4	129.2
1952 "	102.5 (6 mo.)	130.0 (5 mo.)

*Data have been adjusted to levels indicated by social-insurance programs for 1947 and have been carried forward from 1947 bench-mark levels.

Source: United States Bureau of Labor Statistics, *Monthly Labor Review*.

Preliminary figures for July 1952 indicated a continuation of the downward trend in durable goods manufacture and a slackening of the downward trend in nondurables. In this month the number of employees in nonfarm establishments stood at 45,941,000, which was 491,000 less than a year earlier. The employment situation was strongly affected by the steel strike, and it was estimated that nearly 900,000 workers were off industry pay rolls in mid-July 1952 because of the strike. About one-half of the workers affected were employed in the metalworking industries.

In July 1952 employment in durable goods manufacturing was 8,251,000, or about 580,000 less than in July 1951.

Between July 1951 and July 1952 employment in nondurable goods manufacturing fell by 121,000. However, within the nondurable group, gains in employment were scored in printing and publishing and leather products.

The employment and weekly pay roll indexes for manufacturing industries reflected the effects of the steel strike upon in-

dustry. The employment index for manufacturing industries decreased from 105.4 for 1951 to 102.5 for the first six months of 1952. For the same industries the weekly pay roll index for the first five months of 1952 was 130.0 compared with the 1951 value of 129.2.

The expanded rearmament program and the steel strike were the major factors affecting employment and wage structures in this period.

Canada.—The civilian labour force increased from 5,114,000 in May 1951 to 5,179,000 in May 1952, while for the same dates unemployment rose from 170,000 to 212,000. At the same time the general employment index (1939=100) rose from 175.6 at the end of May 1, 1951, to 177.5 for May 1952. The Canadian index of employment in manufacturing (1939=100) fell slightly from 189.9 in May 1951 to 188.7 in May 1952.

Great Britain.—On June 30, 1952, the total working population of Great Britain (analogous to the labour force in the United States) was 23,436,000, which represented an increase of 104,000 from the 1951 total for that date. The total working population was composed of: 22,141,000 in civil employment; 872,000 in the armed forces and women's services; 415,000 registered unemployed; and 8,000 men and women on release.

Table IV.—Analysis of Civil Employment by Industrial Groups, Great Britain

(In thousands)

Industry or service	June 30, 1952	May 31, 1952	Dec. 31, 1951
Basic industries			
Mining and quarrying	873	871	851
Gas, electricity, water	368	369	367
Transport, communication	1,762	1,759	1,751
Agriculture, fishing	1,142	1,132	1,101
Manufacturing			
Chemicals, etc.	481	484	491
Metals, engineering, vehicles	4,206	4,225	4,211
Textiles	883	903	996
Clothing	667	675	688
Food, drink, tobacco	861	843	853
Other	1,473	1,493	1,541
Building and contracting	1,447	1,447	1,422
Distributive trades	2,628	2,624	2,641
Professional, financial and miscellaneous services	3,985	3,960	3,921
Public administration	1,365	1,367	1,371
Total in civil employment	22,141	22,152	22,221

Source: Ministry of Labour Gazette (London).

have who had not yet taken up employment.

During the first six months of 1952, civil employment declined by 80,000. The industries which did not participate in this decline were mining, transport, agriculture, food, building and professional services. The largest declines occurred in textiles, chemicals and the distributive trades.

Australia.—The general employment index (1948=100), excluding agriculture but including forestry and fishing, was 110.6 for April 1951 and 110.1 for April 1952. Employment in manufacturing (1948=100) was 109.0 in April 1951 and 105.6 in April 1952.

France.—The general employment index (1948=100) for France (excluding agriculture) was 103.8 in April 1951, and had risen to 105.6 in April 1952. Using the same base year, the index of employment in manufacturing had a value of 105.7 in April 1951 and rose to 107.3 in April 1952.

Japan.—With 1948=100, the general employment index (excluding agriculture) was 101.2 in March 1951 and 98.5 in Feb. 1952. The index for employment in manufacturing stood at 111.7 in Dec. 1951, with July 1950=100.

Norway.—On the basis of an index including all nonagricultural employment (1948=100) the general employment index was 107.9 for June 1951 and 109.0 for June 1952. The index of employment in manufacturing (1948=100) had a value of 111.0 in June 1951 and 108.8 in June 1952.

Union of South Africa.—In April 1951 the general employment index (1948=100, and excluding agriculture and commerce) was 109.0, and for April 1952 it was 113.3. Using the same base year, the index of employment in manufacturing was 108.5 in April 1951 and 112.4 in April 1952.

West Germany.—In March 1951 the general employment index (1948=100) was 110.2, and increased to 113.6 in March 1952. The index for employment in manufacturing (1948=100) was 119.8 in March 1951 and 122.5 in March 1952. (See also BUSINESS REVIEW; CENSUS DATA, U.S.; LAW.) (P. TA.)

Endocrinology. The investigative efforts of many clinicians, biochemists, animal husbandrymen, physiologists, zoologists and others during 1952 resulted in the modification of several existing theories and the discovery of new facts.

Pituitary.—Removal, inactivation or utilization of a secreted hormone appears to be essential if it is not to accumulate in the blood in ever increasing amounts. That the liver and kidneys inactivate the sex hormones is well known. It was learned that in vitro incubation of adrenocorticotrophic hormone (ACTH) with slices or minces of liver, kidney, muscle or even adrenal resulted in inactivation of the hormone. Incubation of ACTH preparations with human blood in vitro resulted in rapid loss of endocrine activity, but beef blood lacked this effect. Investigators differed as to whether rat blood caused inactivation. Cooling the tissues or heating the blood prior to incubation largely prevented the inactivation; this suggested that a heat-labile enzyme might be involved. A "factor" in the anterior pituitary which appears to depress the respiratory quotient (carbon dioxide output divided by oxygen intake) of muscle in vitro was discovered. This factor, which is associated with, but may be distinct from, the growth hormone, seems to reduce the utilization of carbohydrate by the body.

Adrenal.—The pituitary gland, through its rate of release of ACTH, largely regulates the secretion of cortisone and other adrenal cortical hormones. In adrenal cortical hyperplasia, however, excessive amounts of androgen may still be secreted, leading to the appearance of some adult male sex characters in children and women. An ingenious clinician confirmed the possibility of successful treatment with injected cortisone of such mascu-

linized patients. The pituitary, sensitive to the excessive (secreted plus injected) blood level of cortisone, apparently reduced its secretion of ACTH. In the absence of the latter the secretion of adrenal cortical hormones, including the adrenal androgens, fell to very low levels, thus checking, if not curing, the virilism. Meanwhile the administered cortisone made up for the inadequate secretion of those cortical hormones which are not androgenic but are essential. Cessation of treatment after many months was followed by reappearance of the androgens.

Some types of prostatic and mammary cancer seem to be partially dependent for their growth on certain hormones of the adrenal gland. If the adrenals of patients with such tumours are surgically removed and the patients are supplied with one or two of the adrenal cortical hormones, conspicuous relief from symptoms may follow for several months. If patients with Addison's disease, or adrenalectomized animals, or animals whose adrenals are atrophic because their pituitary glands have been removed are not supplied with adrenal cortical hormone, one result is an abnormal sensitivity to insulin. On the other hand, if large doses of either ACTH or cortisone are given to normal animals, the other extreme is reached, and a condition resembling diabetes temporarily occurs. Adrenal cortical hormones thus appear to help to regulate the body's sensitivity to insulin, although the mechanism of such control is unknown. It also appears that, if the animal is deprived of both adrenal and pituitary hormones (by hypophysectomy), it is more sensitive to insulin than if it lacks only adrenal hormones.

Pancreas.—Insulin was added to dilute serum. Five minutes later, one-half a rat diaphragm (muscle) was bathed in the mixture. The other half was bathed in insulin only. Both halves were then transferred to glucose solutions. Later, the amount of glycogen synthesized by each piece was determined; the amount of glycogen formed in such a test is known to be proportional to the quantity of insulin available. The muscle treated with insulin alone synthesized more glycogen than did the muscle treated with insulin plus serum; part of the insulin had been inactivated by the serum. Serum from some patients inactivated insulin more effectively than serum from others. In the diabetic patient, the metabolism of fructose is essentially as in the normal person; apparently insulin is not required in the metabolism of this sugar. Glucose, on the other hand, is not metabolized normally when insulin is lacking, and diabetes results.

Gonads.—Further evidence was accumulated that progesterone, known to be produced by the corpus luteum, is secreted a few hours before ovulation occurs. The origin of the pre-ovulatory progesterone is not known; it may be produced by cells of the follicle wall. Since the administration of progesterone during the early part of the ovarian cycle results in ovulation before the usual time, it may be that normal pre-ovulatory release of progesterone is a factor in producing ovulation. While it had long been believed that the placenta is another source of progesterone, not until 1952 had biochemists succeeded in isolating the hormone from the human placenta. Sex hormones or their metabolites had several times been found in strange places; estradiol, a potent female sex hormone, was isolated from the testis.

Lactation.—Experiments with rabbits demonstrated that ejection or "let down" of milk probably occurs on a reflex basis involving successively suckling, neural stimulation of the posterior pituitary, release of a hormone (very likely pitocin) from this gland, and action of pitocin on the mammary gland. In rabbits and in sows, "let down" can be prevented or checked by the injection of epinephrine. The latter hormone is known to be secreted at moments of alarm when animals must exert themselves to meet or escape danger and when such activities as suckling must be interrupted.

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England: see GREAT BRITAIN & NORTHERN IRELAND, UNITED KINGDOM OF.

English Literature. In 1952 some adventurous speculations were made on the immediate dilemma and the future direction of the civilized world. Notable among these was Cyril Garbett's *In an Age of Revolution*. The archbishop of York put forward the Christian answer and tackled present-day problems with faith and realism in his direct and balanced inquiry. Charles Galton Darwin took an immense forward view of earth and man in *The Next Million Years*, a closely reasoned, unimpassioned treatise.

In *The Struggle for Europe*, Chester Wilmot discussed the war that was won and the peace that was lost, dwelling forcibly on the Russian policy of postwar world power as a menace to democracy. The implications of an earlier state of Russia were treated with more detachment by Edward Hallett Carr in volume III of *The Bolshevik Revolution 1917-1923*. Winston Churchill continued his war memoirs with the fifth volume, *Closing the Ring*. This took the story from June 1943 to June 1944, ending on the eve of the Normandy landings. *Beatrice Webb's Diaries, 1912-1924*, edited by Margaret I. Cole, showed the Webbs turning from the Fabian society to the developing Labour party. Politics of the last 50 years and service under five prime ministers were the theme of *Retrospect*, the memoirs of Viscount Simon, flatly written but with a special interest attaching to his work in the 1930s at the foreign office when Adolf Hitler was on the rise.

A strong light was thrown on these years from the royal angle in Harold Nicolson's masterly *King George V: His Life and Reign*. This study gave a remarkable all-round portrait of the king in pursuit of his public work. G. M. Young's *Stanley Baldwin: a Candid Study* emerged as an outspoken piece of critical portraiture in place of the expected work of official documentation.

Volume IV of *The History of the Times* was published in discreet anonymity, covering the years from 1912 to 1948—a period during which the domestic conflict between Lord Northcliffe and the office loomed so large as still to arouse discussion in retrospect. C. M. Woodhouse, studying *The Greek War of Independence*, interpreted its political and diplomatic background. Vincent T. Harlow examined with equal thoroughness a phase of Great Britain's commercial expansion in volume I of *The Founding of the Second British Empire, 1763-1793*.

Lawrence and Elisabeth Hanson presented two detailed and fully documented studies in *Necessary Evil: the Life of Jane Welsh Carlyle and Marian Evans and George Eliot*. Both were notable for richness of material, assiduously gathered and well ordered, rather than for a luminous insight into character and motive. A. B. Hopkins gave a well-balanced picture of writer and woman in *Elizabeth Gaskell: Her Life and Work*. Two women writers of a later date, both sensitive and retiring, were given the delicate treatment required. These were *Emily Dickinson* by Richard Chase and *Katherine Mansfield* by Sylvia Berkman.

Several efforts were made during the year to increase the popularity of Robert Browning. From England came Betty Miller's biographical *Robert Browning: a Portrait* and J. M. Cohen's

critical study, *Robert Browning*, with some careful interpretive argument. Rupert Hart-Davis' lively biography of *Hu Walpole* pictured a prolific and usually confident popular novelist of a type unlikely to be repeated in the present time.

The critical approach took precedence of the biographical. David Daiches' study of *Robert Burns*, largely devoted to discussion of separate poems; in Douglas Hewitt's *Conrad; a Reassessment* and in Angus Wilson's *Emile Zola*, a succinct introductory study, not without a personal viewpoint. *Norman Douglas* by R. M. Dawkins was the first critically appreciative study to appear after Douglas' death early in the year.

So far this survey has for the most part considered books which the subject leads the author. But the pulse of literature kept beating finally by those personal works of imaginative creation wherein the writer uses his material to transcend the moment, aiming toward the permanence of art. Sacheverell Sitwell voiced the artist's approach in *Cupid and the Jacaranda*, declaring "I write best when I write to please myself." In this first book of a series his imagination again travelled among flowers and music, pictures and architecture, with an added autobiographical strain. Aldous Huxley in *The Devils of Loudun* produced a grim historical account of demoniacal possession and the torture of a parish priest in 17th century France. Wyndham Lewis, more argumentative than creative, examined the present-day author's degree of freedom in society in *The Writer and the Absolute*, an essay both stimulating and controversial. Leonard Mumford's *The Conduct of Life* covered a broader field, dealing in this last volume of a sequence with "man's nature, destiny and purpose," and the path he must take for spiritual survival. John Lehmann again voiced the imaginative outlook in *The Open Night*, in which he claimed that poetry alone must create the symbols by which man lives through periods of upheaval and combats despair. *First and Last Loves* gave John Betjeman a happy chance to meditate on the architecture and habits of his chosen suburbia, and F. R. Leavis' essays, *The Common Pursuit*, displayed that author's combative outlook on writers and literature.

Among travel books, Laurens van der Post's *Venture to Interior* described journeys in Nyasaland with a blend of adventure and introspection, confidently broadening and deepening his theme. Peter Quennell's slight but beautifully written *Springs in Sicily* afforded him a Sitwellian or Huxleyan opportunity to digress without irrelevance. F. Kingdon Ward's *Plant Hunting in Manipur* and F. D. Ommanney's *The Shoals of Capricorn* were examples of technical expeditions written with a descriptive skill that gave them a general appeal.

The autobiography proper was almost attempted by August John, whose *Chiaroscuro* selected episodes at random, shedding more frequent light on fellow artists than on himself. In *Long to Learn: Chapters of an Autobiography*, John Masefield discussed the "influence that helped me to be a story teller" and the growth of his imaginative powers. From a number of military memoirs of battles, prisons and escapes, Michael Calver's *Prisoners of Hope* may be picked as a detailed personal account of guerrilla fighting behind the Japanese lines. Among memoirs and correspondence of an earlier epoch were *The Letters of Samuel Johnson*, newly edited by R. W. Chapman, and *Boswell in Holland 1763-1764*, edited by Frederick A. Pottle, less related than the previous *London Journal*, but providing some further gleams for Boswellians. (S. NN)

Fiction.—The year 1952 was a lean one for the English novel. An attachment to form and detail and a distrust of abundance were the marks of the score or so of noteworthy books that were published.

A massive exception to the rule was H. F. M. Prescott's *Man on a Donkey*. In this two-volume chronicle of the reign

Henry VIII, Miss Prescott showed herself to be that rare thing, a scholar with the common touch and with an artist's power of invention. From wilful king to restive commons, from prelate to heretic priest, there was the likeness of truth in the people she portrayed.

Among other practised authors, Evelyn Waugh was urbane and witty as ever in *Men at Arms*, the first part of a promised trilogy. If truth and fantasy both had their place in this satire of military life, it was a measure of Waugh's adroitness that the distinction was seldom clear. In *Doting*, Henry Green observed without sympathy the vagaries of middle-aged passion; a feeling for the delicate phrase was joined to a hardly less strong one for the indelicate situation. The reader was left to wonder whether the end could support such ingenuity of means. The same objection could be made in Angus Wilson's *Hemlock and After*, which found a subject in sexual aberration. In pleasanter vein, C. S. Forester continued to rescue the period novel from the tyranny of costume. His *Lieutenant Hornblower* supplied an early view of that resourceful sailor; never happier than when in action, he was here found laying siege to a fortress in Haiti, but later was left to languish on half-pay. *A Step to Silence* became the latest offering of P. H. Newby's equivocal talent: a prospect of life viewed through a glass darkly, with the disquieting inconsequence of a dream. More bizarre still, though not unpersuasive, was John C. Powys' *The Inmates*. The confessed aim of this excursion into lunacy was to find in its many forms a single attitude to life.

An interesting new talent was disclosed by Thomas Hinde's *Mr. Nicholas*. Style and a discernment beyond the author's years gave a notable authenticity to this essay in filial hate. Barbara Pym with *Excellent Women* and William Cooper with *The Struggles of Albert Woods* enlarged their earlier successes. The progress of Cooper's hero in English society was a fertile if familiar contrivance; while Miss Pym's story owed much to the engaging candour of its narrator, herself a woman of reluctant good works.

This was true also of a very different book, Joyce Cary's *Prisoner of Grace*. If the total effect of this novel was ambiguous, this was because Cary refrained, perhaps too pointedly, from imposing a pattern on his material.

In a year of public tension most novelists remained faithful to private and traditional themes. Where events did intrude, they were used to advance other ends. Two instances of this were J. D. Scott's *The Way to Glory* and Basil Davidson's *Golden Horn*. Here the Englishman abroad pursued his pleasures earnestly, haunted by the ghost of a political conscience. A light but more effective piece than either of these was James Cross' *The Eastern Gate*, in which a French colonial war was reduced to disturbingly human terms.

Short story collections in the year were few and undistinguished. William Sansom enjoyed a modest eminence with *A Touch of the Sun*, in which his talent showed itself best grounded on native soil. (J. Es.)

Poetry.—Three important collected editions appeared in 1952: *Collected Poems* by Edwin Muir, *Personae*, the collected shorter poems of Ezra Pound, and Dylan Thomas' *In Country Sleep, and Other Poems*.

Several established poets published new volumes during the year. The volumes by W. H. Auden (*Nones*) and Louis MacNeice (*Ten Burnt Offerings*) gave the impression of being somewhat transitional in character, but both contained many attractive and accomplished poems. *The Exiles* by Henry Treece and *Ways from the Village* by Gerald Bullett confirmed, rather than advanced, the reputations of their authors. In *Wrack at Tidesend*, Osbert Sitwell wrote with wit and eloquence of the provincial English scene. In *Into Hades*, an ambitious long poem by



ALDOUS HUXLEY and his wife Maria in an informal portrait. Huxley left fiction for history with the publication of *The Devils of Loudun* in 1952

Andrew Young, the author appeared to be writing in a style alien to his true talents.

Several books by younger poets appeared. *Europa and the Bull*, the second collection by W. R. Rodgers, was praised for its rich texture and striking, if somewhat superficial, command of language. *The Sailing Race* contained the best poems so far written by Patric Dickinson, while Paul Dehn's *Romantic Landscape* was an attractive collection in a lighter vein. James Kirkup published his third collection, *A Correct Compassion*. Two volumes by little-known poets were *Rod of Incantation* by novelist Francis King and *The Dark Side of Love*, a first collection by John Smith.

Two anthologies of interest appeared during the year: *Scottish Verse 1851-1951*, edited by Douglas Young, and *New Poems 1952*, edited by Roy Fuller, Montagu Slater and Clifford Dymont. The latter contained much interesting work by both established and unknown writers.

The year was also remarkable for another venture of value to poets. John Lehmann's radio anthology, *New Soundings*, was broadcast monthly on the British Broadcasting Corporation's Third Program. The first program of its kind, it proved a considerable success; prose as well as poetry was included, and in some cases the authors themselves read their contributions. (See also AMERICAN LITERATURE; BOOK PUBLISHING; CHILDREN'S BOOKS; LITERARY PRIZES.) (Jo. C. H.)

Entomology: see AGRICULTURAL RESEARCH ADMINISTRATION; HORTICULTURE.

Entomology and Plant Quarantine, Bureau of: *see* AGRICULTURAL RESEARCH ADMINISTRATION.

Epidemics and Public Health Services.

Poliomyelitis was epidemic in many parts of the world in 1952. In the United States the incidence rivalled that of the record year of 1949. Epidemics of paralytic poliomyelitis apparently do not affect countries with poor sanitation because there, many authorities believe, infection takes place in infancy. This infection produces active immunity but not paralysis because the infants are protected by immunity passively acquired from the mother before birth. This explanation was consistent with the recent increase in poliomyelitis and its greater concentration in adults.

Efforts to control poliomyelitis in the past were fruitless. It was possible to protect monkeys against poliomyelitis, but only limited quantities of vaccine could be prepared because the only source of the virus was the brain and cord of experimentally infected monkeys or mice. Furthermore, the use of such vaccine was not considered safe. Now all three of the recognized types of poliomyelitis virus can be grown in the test tube on tissue culture. Thus, one may begin legitimately to think of vaccine for the active immunization of humans. However, infection with poliomyelitis virus results in paralysis in only one child out of 100, and there is no way to anticipate which child will succumb; thus, vaccination must be given to all. It is obvious that any vaccine developed must not only be effective but it must, above all, be safe. By 1952, the effectiveness and safety were yet to be proven, and whether vaccination would prove practicable was not yet known.

Another possible preventive measure was tested in 1951. Gamma globulin, the fraction of human blood which contains substances protecting against infectious diseases, was given to a large proportion of the children in Provo, Utah, during an epidemic. A similar number of children received a harmless substitute and served as controls. The hope was that the gamma globulin would prevent paralysis in children infected with the poliomyelitis virus. The protection afforded by gamma globulin would disappear in a few weeks, but at the same time the children might be producing their own antibodies and thus attain long-lasting immunity. The results of the trial in Utah were inconclusive and further trials became necessary. The experiment was therefore repeated on a larger scale in 1952 in Houston, Tex., and in Sioux City, Ia., both sites of severe epidemics. The results had not yet been evaluated. It remained to be seen whether this is a practical method, even though it may result in protection. The only source of gamma globulin is human blood. The supply was limited and gamma globulin was in great demand for the prevention of measles and certain other infections.

During the winter of 1951-52, influenza B was widely epidemic in various parts of the globe for the first time since 1946. It was a mild disease for the most part, although there were deaths in the aged and debilitated. The World Influenza centre gave valuable service by reporting the progress of influenza waves and the nature of the viruses isolated by the co-operating laboratories.

In the United States, rapid investigation and reporting of outbreaks to the National Office of Vital Statistics was made more effective. The list of diseases reportable to the federal government was revised in the light of existing knowledge. The United States government and many of the states relaxed the rigorous control of psittacine birds which had been in force since the widespread outbreaks of "parrot fever" in 1929-30. It was now known that psittacosis exists in many native birds, wild and domestic thus making it unrealistic to apply strict con-

trol to the relatively small psittacine bird reservoir. Furthermore, human infections are few and respond well to antibiotic therapy.

A severe epidemic of meningococcal meningitis had been in progress in parts of Africa since 1949, and during 1952 the problem was particularly acute. The Anglo-Egyptian Sudan, Nigeria and Eritrea bore the brunt. In the United States, the disease characteristically occurs in epidemic fashion every eight years. Since the last episode occurred in 1943, it was not unexpected that meningococcal meningitis was reported more frequently during 1952, and it could be predicted that the disease might occur more widely in 1953. This disease is not so terrifying as it once was since the sulfa drugs and antibiotics are effective in treatment. Moreover, mass prophylactic use in small population groups can control epidemics.

Streptococcal infections had been decreasing in virulence for some decades, and apparently had also decreased in number. However, in the United States a rise was noted in 1951, and a further rise in 1952. This might represent merely a temporary check in the decline or might portend a more significant change in the natural history of the disease. However, penicillin provides a ready cure.

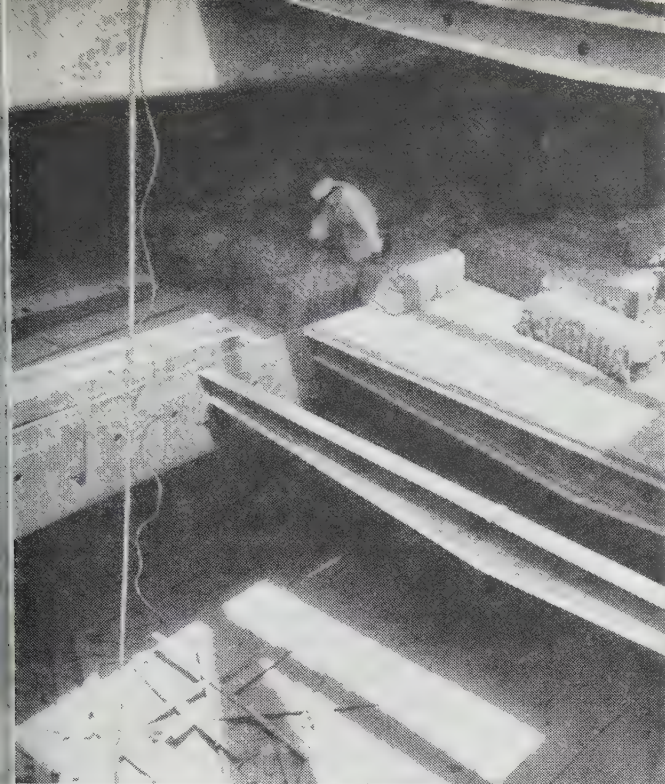
Infectious encephalitis also continued to be reported in greater numbers in the United States. This is not a single entity but is a heterogeneous group of specific encephalitis viruses, infections and other illnesses of noninfectious nature. A sharp outbreak of western equine encephalitis totalling 630 cases and many deaths in California was reported during the summer of 1952. A vast control program designed to reduce the population of the mosquito, *Culex tarsalis*, the natural vector of the disease, was carried out. There were preliminary indications that this was an effective barrier to spread of the epidemic. Unfortunately, no specific therapy exists and it is not possible to eradicate the reservoir of infection existing in the wild and domestic bird population.

The phenomenal decline of diphtheria and whooping cough in Great Britain, the United States and elsewhere continued. The value of diphtheria immunization was well proved. Immunization against whooping cough was of more recent origin but was also of known value. Its contribution to the downfall of whooping cough was further proved by the Medical Research Council in Great Britain. They showed that immunization reduced the likelihood of whooping cough by 78%. The cases that occurred in the immunized were, on the whole, less severe and shorter lasting.

The five internationally quarantinable diseases varied little in scope or locale. A start was made in the control of epidemic typhus in parts of Afghanistan by destroying the louse vector by DDT, a method which proved so effective in Italy in World War II. Cholera was now confined to Asia. In general, the situation had improved, although there was no intelligence from China.

An outbreak of mild smallpox consisting of 132 cases and deaths occurred in Lancashire, Eng. In Marseilles, Fr., the return of an infected soldier from Indochina caused 33 cases of whom 4 died. The extent of these outbreaks was the result of the low level of smallpox vaccination in the community.

"Jungle" yellow fever continued to push its way slowly northward through Central America, and had reached Nicaragua. This "Jungle" or sylvan type is a disease of monkeys which is transmitted to near-by humans by jungle mosquitoes. "Jungle" yellow fever also broke out in Brazil in settlements made from newly cleared forest lands. Obviously the monkey reservoir cannot be destroyed nor can one eliminate mosquitoes from the jungle. However, humans can be protected completely by yellow fever vaccine, and millions had been so protected. This had reduced deaths to a low figure. The mosquito which transmits yellow



SPECTING CARGO HOLD of a Norwegian freighter fumigated at U.S. government expense. When dead rats are found aboard incoming vessels after fumigation they are taken to a quarantine station to be examined for plague symptoms

ver in nonforest areas had been practically eliminated from South America.

Human plague is a problem largely confined to India, although it had been decreasing remarkably there. China and North Korea were unknown quantities. A small number of human cases occurred in remote areas of Africa and South America in association with solidly established infections of wild rodents. Although the animal reservoir could not be eliminated, settled areas were being freed of the disease and rat control had prevented its transfer by ships.

It was hoped that the remarkable advances made in the control of enteric diseases by good sanitation and of diseases such as whooping cough, diphtheria and smallpox by immunization could be paralleled in the historic plagues of the world. Chemicals to destroy the insect vectors, vaccines, drugs to prevent or cure, all of these had made inroads on scourges hitherto accepted as inevitable. Syphilis, yaws and bejel, long rooted in some peoples, were beginning to give way to the mass use of penicillin. The tools were at hand but they had to be used. Apparently they were not being used effectively in China and North Korea, where the widespread ravages of disease were falsely attributed to the employment of biological warfare by the United Nations. There were gaps in the defenses, of which poliomyelitis was one instance. Epidemic haemorrhagic fever, a disease known to the Japanese troops in Manchuria in 1939 and afflicting United Nations forces in Korea, was another. There was no effective treatment for this disease but the possibility that there was a rodent reservoir and an arthropod transmitter gave hope that methods developed for other diseases with a similar natural history would prove successful in the control of this. (See also **FEDERAL SECURITY AGENCY; INDUSTRIAL HEALTH**; and articles on specific diseases.) (H. E. H.)

Episcopal Church: see **PROTESTANT EPISCOPAL CHURCH.**

Eritrea. A former Italian colony on the Red sea bounded south by Ethiopia and west by Sudan, Eritrea was from 1941 under temporary British administration and from Sept. 15, 1952, an autonomous province federated with Ethiopia. Area: 47,875 sq.mi. Pop. (1950 est.): 1,100,300 including 18,000

Italians. Language: mainly Tigrinya and Tigré. Religion: c. 50% Christian Monophysite and 50% Moslem. Capital, Asmara (pop. c. 117,000). Representative of the emperor of Ethiopia: Bitwoded Andargai Masai. Chief executive, elected by the Eritrean representative assembly: Ato Tedla Bairu.

History.—In 1952 Eritrea achieved its new status of an "autonomous unit federated with Ethiopia under the sovereignty of the Ethiopian crown" prescribed by the U.N. resolution of 1950. The arrangements which began in 1951 moved swiftly and smoothly during 1952 to their conclusion. The deadline for their achievement had been set for Sept. 15 and on that date the federation became fully effective and the new Eritrean government assumed the powers provided for it in its constitution. This had been prepared by the U.N. commissioner, Eduardo Anze Matienzo (Bolivia), was adopted by an elected Eritrean assembly on July 10 and ratified by the emperor of Ethiopia on Aug. 11. The federal act which set up the federation was written into the U.N. resolution and was ratified by the emperor on Sept. 11. Federation was then effective, and by Sept. 15 physical transfer of powers and authority to the successor authorities by the British administration was complete.

The Eritrean government assumed authority in all domestic affairs and the federal government, which was in effect the Ethiopian government, took over control of those affairs which had been broadly defined in the resolution as federal responsibilities. On Sept. 16 the British authorities who had governed Eritrea since April 1941 finally withdrew, and the British flag was hauled down and replaced by the flag of the federation, the Ethiopian flag and the new blue flag of Eritrea. A handful of British advisers and Italian technicians remained to assist the new regime.

Thus Eritrea became incorporated as a specially privileged and self-governing unit in the Ethiopian empire, from which it had been detached about 60 years earlier to become an Italian colony. Its fate had been in the balance for 11½ years.

The population is evenly divided between plateau Christians and lowland Moslems and this fact was recognized in a parity of these two components in the composition of the assembly and posts in the new government. The head of the latter was a Christian. The whole process was conducted in an atmosphere of good will in both Eritrea and Ethiopia which augured well for the new relationship.

In October Emperor Haile Selassie paid a state visit to all the provinces of Eritrea and was greeted with enthusiasm by his new subjects wherever he went. He made it clear to them that his sole desire was to ensure their peace and prosperity.

The successful implementation of the Eritrean settlement was reported to the general assembly of the United Nations at the end of 1952 and general approval of the action taken was recorded. Eritrea, from being an international "problem," found its haven as part of the Ethiopian empire. (F. E. St.)

Finance.—Budget: (1951-52 actual) revenue £3,019,475; expenditure £3,269,795; (1952-53 est., first year of the new status) revenue £1,639,005; expenditure £1,566,644.

Foreign Trade.—(1951) Exports £5,014,056; imports £5,849,042.

Estonia. From Feb. 24, 1918, to Aug. 6, 1940, when it was annexed by the U.S.S.R., Estonia, one of the Baltic states of northeastern Europe, was an independent republic. Area: 18,357 sq.mi. Pop.: (1939 est.) 1,134,000; (1950 est.) 1,200,000. Language: Estonian and Russian. Religion: Lutheran and Greek Orthodox. Chief towns (pop., 1939 est.): Tallinn (cap., 146,400); Tartu (60,100); Kohtla-Järve (1950 est., 30,000). Chairman of the presidium of the supreme soviet in 1952, August M. Jakobson; chairman of the council of ministers, Aleksey Muurisepp.

History.—On Feb. 24, 1952, Estonia's national day, Konstan-

tin Päts, the last president of independent Estonia, Gen. Jaan Laidoner, commander in chief, and other Estonian leaders who were deported in June 1940 and whose fate was unknown were attacked in a broadcast from Tallinn denouncing them as traitors and "obedient tools of the western imperialists." An exhibition entitled "Anglo-America Intervention in Estonia, 1918-20" was opened at Tallinn to suggest that the Estonian war of independence was fought to make the country an Anglo-American colony. On May 15 the town of Kuressaare on the island of Saaremaa (Oesel) was renamed Kingissepp in honour of an Estonian Communist rebel, Victor Kingissepp, who had been executed for high treason in 1923.

On May 10 the presidium of the supreme soviet of the U.S.S.R. confirmed the new administrative reform grouping the 39 *rayony* or districts into three *oblasti* or provinces with capitals at Tallinn, Parnu and Tartu. At the plenary session of the central committee of the Estonian Communist party at Tallinn, on March 26-28, Ivan Gustavovich Kabin, first secretary, demanded that the workers and peasants should increase their socialist consciousness and political vigilance and that the nefarious activities of hostile elements should be unmasked. These elements among others were squandering and robbing the socialist property of the collective farms. He revealed that the number of *kolkhozy* was reduced from 2,975 in 1949 to 1,137. Only 163 *kolkhozy* had a primary Communist organization; i.e., at least three party members. The total party membership amounted to 31,000.

According to the fifth five-year plan, 1951-55, Estonia was to develop its oil-shale industry. The production of gas from shale was to increase by 120% and a gas pipe line was to be laid from Kohtla-Järve to Tallinn. The production of liquid fuel from the same source was to be increased by 80%. It was estimated that in 1950 oil production was about 450,000 metric tons. A large hydroelectric power station on the Narva river was to be completed. The railway system was to be overhauled and, it was believed, the Tallinn-Krasnogvardeisk line was to be provided with a second track. Since 1945 the Estonian coast and islands had been covered with a network of fortifications. There were also about 60 airfields.

Jaan Kiivit, the soviet-appointed archbishop of the Estonian Lutheran Church, took part in a "Defense of Peace" conference organized in May at Zagorsk, near Moscow, by Alexei, the patriarch of Moscow and all Russia. (See also LATVIA; LITHUANIA.)

Education.—Schools (1950): elementary 1,148, pupils 142,500; secondary, pupils 13,500; technical, pupils 14,000; institutions of higher education 6, students 6,500, including Tartu university, students 2,700.

Finance.—Budget (1952 est.): balanced at 1,039,280,000 roubles.

See A. Torma and V. Raud, *Estonia 1918-1952* (London, 1952). (K. SM.)

Etching. In 1952 the tendencies most evident in the countries where etching was widely practised as a medium of creative graphic expression were: (1) the use of colour in place of the traditional monochromatic black, (2) a predilection for the large plate, (3) the employment of mixed graphic media to achieve textural effects and to furnish the basis for colour printing, and (4) the apparent desire on the part of certain artists who had adopted the more extreme phases of the so-called modern school to break through the narrow spiritual limitations of these and revert to richer and more expressive forms.

England, France and the United States continued to be the three centres of greatest activity in the field of etching. England, stronghold of conservatism, was less affected by the modern influence than any other country, and its etchers, with few exceptions, continued to work in the great tradition of the art. W. D. Brokman-Davis, Hubert Andrew Freeth, Robert Spence,

Sara Sproule and the veterans, Paul Drury and W. P. Robins produced significant work in 1952, while the dry points of Sir Muirhead Bone remained among the greatest examples of the medium. The same year marked the death of the distinguished etcher and dry pointer Martin Hardie.

The golden age of French etching, the 19th century, carried over into the 20th, but comparatively few French etchers in 1952 worked in the pure medium. The trend was rather toward the employment of mixed media, the engraved in place of the bitten line, the use of colour and the large plate, and the emphasis on book illustration. With their great sensitivity, imaginative powers and technical skill, the French had always been leaders in linear design, and since the modern movement owed to France so much of its impetus, it was natural that the great majority of French graphic artists adopted that idiom. The recognized leaders among them, Raoul Dufy, Henri Matisse, Pablo Picasso, Georges Rouault and Jacques Villon, all worked in etching to some extent. Among a host of others, employing a graphic media, all approaches and all techniques, Michel Ciri, Albert Decaris, Edouard Georg, André Jacquemin, Robert Lotron, Louis Joseph Soulas and Roger Vieillard did outstanding work.

The greatest strength of the American school lay in its freshness, vitality, variety of approach and innate creative power. Its greatest weakness was in the neglect of essential spiritual values in the preoccupation with technical methods and purely pictorial effects. With the blend of racial influences affecting the character and outlook of the American artist, and the unlimited sources of inspiration presented to him, it was natural that these should be reflected in his work. Particularly evident was the trend away from pure linear etching to the mixture of media to produce tonal effects and provide a basis for colour. Many artists who had adopted the modern idiom clung steadfastly to its abstract and nonobjective terms, but others, having reduced these terms to academic formulas susceptible only to repetition, appeared to be seeking more objective means for expressing subjective feeling. Those who employed etching either entirely or with other media used supplementarily, included, among a few: Peggy Bacon, Minna Citron, Stephen Csok, Ernest Freed, Sue Fuller, Arthur William Heintzelman, Gen Kloss, Mauricio Lasansky, Helen A. Loggie, Luigi Lucioni, Carl Max Schultheiss and the veterans, John Edward Costigan, Eugene Higgins, Roi Partridge, Ernest D. Roth and Hermon Armour Webster, the last named long resident in France.

Celestino Celestini, Benevenuto Disertori, Valerio Frasccheri and Antonio Music worked in etching, although the majority of Italian printmakers occupied themselves with the sister arts of wood engraving and lithography. As in all Latin countries, the modern influence predominated.

Etching in Germany was still involved in the social, economic and political disorder existing in that country, which had seen the birth of the art in the 16th century.

Belgium, the Netherlands, Switzerland and the Scandinavian countries were active in the field of etching in 1952, but in those countries, too, the struggle between forms of expression and the general social and political uncertainty and unrest operated against stability.

The printmakers of Mexico and the South American countries for the most part concentrated their efforts on lithography, while those of China and Japan were more concerned with reviving the great schools of woodcutting that were their glory of the past. Canada and Hungary, among the smaller national centres of etching, maintained flourishing and vital schools, the former including such outstanding names as Sybil Andre, John J. Barry and the veteran Nicholas Hornyansky, and the latter, Julius Komjáti and Nandor Varga. (J. T. AR.)

Ethiopia. An independent empire of northeastern Africa, Ethiopia is bounded north and west by the Anglo-Egyptian Sudan, south by Kenya, southeast by Italian Somaliland and east by British and French Somaliland. Area (excluding Eritrea): c. 350,000 sq.mi. Pop. (no census ever taken, 1951 est.): 10,000,000. Language: Amharic, the official language; also Tigrinya, Tigré, Galla, Somali, etc. Religion: Christian Monophysite (in communion with the Egyptian Coptic Church) 57%; Moslem 17%; pagan, etc., 26%. Chief towns: Addis Ababa (cap., 250,000); Harar (45,000); Dessie (35,000); Dire Dawa (30,000). Ruler: Emperor Haile Selassie I; prime minister in 1952: Bitwoded Makonnen Endalkatchou.

History.—The event of outstanding importance in 1952 was the final settlement of the Eritrean question by the incorporation of that country into the Ethiopian empire on a federation basis under the sovereignty of the Ethiopian crown. On July 10 the Eritrean constituent assembly approved a constitution which had been prepared by the U.N. commissioner after consultation with the British administration, the Ethiopian government and the Eritrean people. This constitution was ratified by Emperor Haile Selassie on Aug. 11 and on Sept. 11. The emperor also ratified a federation act which had been drawn up and approved by the U.N. assembly on Dec. 2, 1950, thus completing the formalities that were the necessary prelude to the transfer of control from the caretaker British administration on Sept. 15. The representative of the emperor, his son-in-law Bitwoded Andargai Masai, arrived in Asmara on Sept. 13 with his wife Princess Tenegn Work, and was installed in the palace of the former Italian governor. The emperor paid an official visit to the newly acquired territory in October.

Eritrea secured representation in the Ethiopian parliament on the basis of population; 3 Eritrean senators being appointed directly by the emperor and 5 deputies being elected by the Eritrean constituent assembly from among its own number. The Eritrean assembly consisted of 64 members, half Christians and half Moslems. Its first president was Ali Radai, a Moslem. Laws passed by the assembly were promulgated under the signature of the emperor's representative, who had the power of veto in respect of legislation which impinged on subjects reserved to the imperial government. These were defense, foreign affairs, currency and finance, foreign and interstate commerce and external and interstate communications, including ports.

The actual administration of Eritrea would be in the hands of a chief executive, elected by the Eritrean assembly but independent of it. He would appoint four secretaries of departments responsible to himself. The first chief executive was a Christian, Ato Tedla Bairu. (See also ERITREA.)

The increasing interest taken by the U.S. government in the well-being of Ethiopia received outstanding proof with the signing of a general Point Four agreement on June 16, 1951, for the development of agricultural education and research. In June 1952 a Point Four director was installed in Addis Ababa, and preliminary discussions crystallized into an agreement for the establishment of an agricultural college. For this purpose a sum of Eth. \$2,000,000 was made immediately available, half (or U.S. \$400,000) being provided from Point Four resources and half by the Ethiopian government. Other projects included the opening of two agricultural secondary schools in the provinces and the establishment of several research stations to be closely integrated with the above college and schools.

Since its foundation in Aug. 1942 the grand total of assets of the state bank had grown from Eth. \$12,000,000 to Eth. \$176,200,000; of deposits and loans from Eth. \$11,000,000 and Eth. \$1,000,000 in 1943 to Eth. \$45,300,000 and Eth. \$21,000,000, respectively, at the end of 1951. By the end of 1951 the issue department of the bank had issued notes under the new

monetary system to the extent of Eth. \$75,561,999, cover being held at that date in the shape of gold, silver and foreign exchange and securities to the amount of 55%.

Education.—Schools (1950-51): elementary 538, pupils 55,000, teachers 1,755 (including 201 foreign); secondary (1949-50) 6, pupils 1,204. There were 220 students abroad, mostly supported by the government.

Finance and Banking.—Budget (1949-50): revenue Eth. \$105,866,000, expenditure Eth. \$90,430,000. Monetary unit: Ethiopian dollar. Exchange rate: Eth. \$7 to the pound sterling, and Eth. \$2.50 to the U.S. dollar.

Foreign Trade.—(1949-50) Imports Eth. \$74,600,000, exports Eth. \$68,300,000; (1950-51) imports Eth. \$95,300,000, exports Eth. \$111,700,000. Main sources of imports: India 25%; U.K. 13%; U.S. 12%; Italy 9%. Main destinations of exports: Aden 25%; Eritrea 19%; U.S. 13%; French Somaliland 11%. Main imports: cotton piece goods, machinery, sugar and salt. Main exports (1950-51): coffee 50%; hides 18%; cereals and pulses 10%; oilseeds 10%.

Transport and Communications.—Roads 44,000 mi., of which 9,000 mi. were suitable for motor traffic. Licensed motor vehicles (Dec. 1950): cars 2,500, commercial 1,750. Railways: 487 mi. Air transport (Ethiopian Air Lines, 1951): passengers carried 36,795; passenger-miles 16,099,506; freight ton-miles 1,132,293.

Agriculture.—Coffee production: (1949) 36,500 metric tons, (1950) 31,200 metric tons. Livestock (Sept. 1951): cattle 18,000,000; goats and sheep 20,000,000; camels 9,000,000; chickens 10,000,000; horses and mules 3,000,000.

European Coal and Steel Community: see EUROPEAN UNION; FRANCE.

European Defense Community: see EUROPEAN UNION.

European Economic Cooperation, Organization for: see MUTUAL SECURITY PROGRAM.

European Payments Union: see EXCHANGE CONTROLS AND EXCHANGE RATES; INTERNATIONAL TRADE.

European Recovery Program: see MUTUAL SECURITY PROGRAM.

European Union. The unification of Europe made more significant progress in 1952 than in any preceding year. The emphasis shifted from the Council of Europe, created by a multilateral treaty signed in 1949, and to which by the end of 1951 most European states outside the soviet orbit belonged, to the closer integration of "little Europe," the growing federation of France, Germany, Italy, Belgium, Luxembourg and the Netherlands. The fundamental progress of European unification in 1952 consisted in the elaboration of closer ties among these six nations. It proceeded on two different lines, in building up a community of heavy industry (the Schuman plan for merging coal and steel production) and of defense (the European Defense Community treaty for the creation of a common army). Of these two plans, the Schuman plan was in the stage of realization at the end of 1952, while the European army plan was still in the discussion stage. For the first time, however, it was clearly and officially envisaged, that these two partial and functional organizations should be stepping stones toward the creation of a more inclusive political and economic federation. At the beginning of 1952, the foreign ministers of the six countries negotiating for a European army agreed in principle to the drafting of proposals for a European parliament. Accordingly the European Defense Community treaty, signed on May 27, 1952, provided in article 38 that within six months of the establishment of its assembly, it must prepare recommendations on "the constitution of a European Community Assembly elected on a democratic basis; the powers to be granted to such an Assembly; the changes that should eventually be made in the E.D.C. (European Defense Community) Treaty in order, among other things, to safe-guard adequate representation for the member States." Article 38 further instructed the assembly to "be guided in its work by the following principles: the final organization which is to replace the present provisional one shall be conceived in such a way as to constitute one of the parts of an eventual federal or confederal structure founded on the principles of the separation of powers and comprising a bi-cameral system of representation."

As it became clear, however, that the ratification of the

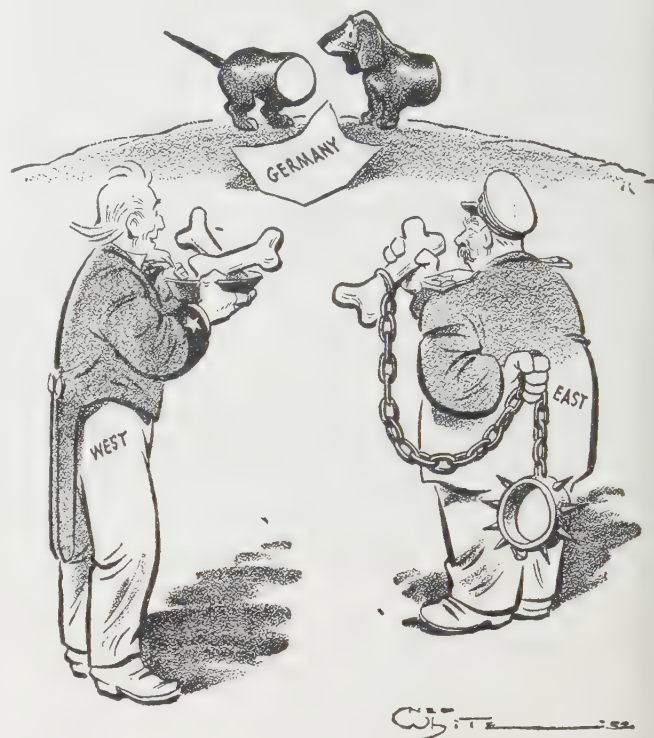
E.D.C. might take time, it was decided in the fall of 1952 to entrust the elaboration of the federal structure to the assembly of the new steel and coal community. The 50-year treaty for merging the 231,000,000-ton coal resources and 37,000,000-ton steel capacity of the six nations into a single market of 157,000,000 people, customs free regarding these commodities, came into force in June 1952 after all the parliaments of the six nations involved had ratified it. The most important of these decisions were those by the French national assembly, which ratified the treaty constituting the European Coal and Steel Community (E.C.S.C.) on Dec. 13, 1951, by a majority of 377 against 233 votes, and by the Federal German parliament, which voted on Jan. 11, 1952, to ratify the plan by 232 to 143 votes. The E.C.S.C. was open to all the countries that wished to participate in it. The national production of coal and steel would henceforth come under the direct jurisdiction of the new common institutions created by the treaty. They were:

1. The High Authority which is the executive power of the community and to which is attached a consultative committee composed of representatives of producers, consumers and workers.
2. The Council of Ministers, composed of six members, one for each participating state, which maintains the necessary liaison between the powers of the High Authority and those retained by each government. With respect to the voting procedure of the council, the production of each state in relation to that of the common market is taken into account, so that the council cannot be dominated by a coalition, either of the two principal producers (France and Germany) or of the others.
3. The Assembly, appointed by the various national parliaments or elected by direct suffrage, exercises democratic control over the High Authority and may by a vote of nonconfidence adopted by two-thirds of the members voting cause its resignation.
4. The Court of Justice, composed of seven judges appointed for six years by agreement among the governments, functions to hear appeals by member states against the decisions of the High Authority.

Thus the first step was taken successfully in the solution of an entirely new problem of an extraordinary scope, to bring sovereign states which had been completely independent for centuries willingly to abandon a fraction of their sovereign independence. The six nations quickly agreed in July on the first concrete measures to put the E.C.S.C. into immediate operation. It was decided that the High Authority and the court would sit in Luxembourg and the assembly in Strasbourg. The choice of a permanent capital was made contingent on a Franco-German agreement on the Saar. The High Authority met in Luxembourg on Aug. 10 under the chairmanship of Jean Monnet. With the creation of the High Authority all the restrictions imposed by the Allies on west German steel production were lifted and first steps taken to liquidate the International Authority for the Ruhr, created on April 28, 1949, as a security measure against German military and economic hegemony in Europe.

The High Authority consisted of nine members, two each from France, Germany and Belgium, and one each from Italy, Luxembourg and the Netherlands. Besides the chairman, there were two vice-chairmen, a German and a Belgian. An Italian, Massimo Piloti, was named president of the Court of Justice. In September the Council of Ministers met for the first time and German Chancellor Konrad Adenauer functioned as its first chairman. The council decided unanimously to have the assembly work out a draft treaty establishing a European federal community.

The assembly met in Strasbourg on Sept. 11. The large majority of its 78 members clearly demonstrated their intention to move rapidly toward the goal of a political federation. Paul-Henri Spaak, a Belgium Socialist and an ardent supporter of federation, was elected president by 38 votes to 30 for Heinrich von Brentano, a German Christian Democrat. The election followed party rather than national lines. Brentano was made president of the 26-man committee to draft the federal treaty, which was asked to complete the job by March 10, 1953. The assembly also approved a proposal to add three additional delegates each from France, Germany and Italy. One of the questions debated was the establishment of a closer relationship between the



"HERE, FIDO!" a 1952 cartoon by White of the Akron Beacon-Journal

E.C.S.C. and nonmember nations, especially Great Britain and the United States. Both nations agreed to establish representation at the High Authority. Coal shipped from the United States to any of the six member nations would be contributed so as to aid whatever allocations the High Authority might make within the six-country area. The United States would act to recognize and re-enforce such sovereign powers as the High Authority possessed. A similar attitude was taken by Great Britain; thus the E.C.S.C. would be assisted by the political and financial backing of the United States and the co-operation of Great Britain, functioning as a part of the Atlantic community rather than as a purely continental group of nations.

One of the problems faced by the E.C.S.C. was the co-ordination of its work with the Council of Europe, in which 14 European nations were represented. Its Consultative assembly, consisting of 132 members elected by the parliaments of the member states, met in Strasbourg in Sept. 1952 and adopted a proposal, made by British foreign secretary Anthony Eden, for establishing close organic links between the E.C.S.C. and the nonparticipating members of the Council of Europe. According to these proposals, Great Britain, the Scandinavian countries, Ireland, Iceland, Greece and Turkey could send observers to the meetings of the assembly and of the ministerial organs of the E.C.S.C. with the right to speak but not to vote. It was generally recognized in Great Britain and France, that the close co-operation of Britain with the developing federal structure of "little Europe" would allay many French fears of a possible German domination of the new structure. One additional stumbling block in the realization of the federal plans was the German-French controversy about the future of the Saar territory.

The Consultative assembly of the Council of Europe approved on Sept. 25 a plan to pool the resources of its members for the development of dependent areas and to create a new vast trad-

ing area embracing the British Commonwealth and the nations of western Europe and their overseas territories. The plan would also enable Germany to help create new sources of raw material in the economically backward areas and raise living conditions there. By such a close economic union, Europe might become self-supporting. The plan foresaw the setting up of a European bank for the development of overseas territories; long-term international contracts on basic products; and a system of preferential tariffs between Great Britain and the commonwealth countries on the one hand and the other European nations on the other hand. Other proposals for the integration of Europe which gained almost universal adherence were a plan for the co-ordination of the highway, rail and canal networks of western Europe, and a health pool in which doctors, laboratories and medicines would be joined in a common fight against disease. A European Transport council was suggested to lay down priorities on future transportation developments and to take the lead in fitting existing systems together by pooling and standardizing equipment, by creating joint installations and by establishing the most economical routes and freight rates. The Consultative assembly also demanded the establishment of a European credit fund to finance housing projects in bombed-out and overcrowded regions as a special help to war victims and refugees. A proposal for the establishment of a committee for the co-ordination of social security legislations, leading to an eventual common system, was also unanimously approved by the Consultative assembly. A French suggestion for an agricultural pool for putting the wine, grain, milk and vegetables of the continent into a near-common market was still in the discussion stage. All these plans showed the new effervescence of the ideal of union and federation growing in Europe to a degree hardly foreseen by any observer a few years before. It was also of great importance that the practical steps taken tended to bridge the gulf between the "federalist" approach suggested by the continental countries and the "functional" approach favoured by Great Britain and the Scandinavian nations.

Meanwhile the six nations forming the E.C.S.C. proceeded with closer plans for pooling their economic resources. On Sept. 11 Pres. Luigi Einaudi of Italy opened in Genoa a conference of 100 experts from the six nations to study plans for the co-operative economy of a federated Europe, especially a unified monetary system, a unified tax system, and mobility of labour across the existing national frontiers. The six nations of the E.C.S.C. asked on Oct. 7 for the necessary legal authority from the General Agreement on Tariffs and Trade to establish a practically free trade area including the six nations. To that end, the six nations would be relieved of their obligations to extend to members of the General Agreement on Tariffs and Trade all tariff concessions granted to one another. They would undertake to establish a common tariff on iron and steel products that would apply to all six countries in their dealings with nonmembers of the E.C.S.C., and also would undertake to make this common tariff considerably lower than the existing tariffs of France, Germany and Italy.

Perhaps the most difficult step toward European union was taken in the plans for the creation of a European Defense Community (E.D.C.). After 15 months of negotiations, a draft treaty to create a common integrated defense force of France, Germany, Italy, Belgium, the Netherlands and Luxembourg under the North Atlantic Treaty command was initialed in Paris on May 9, 1952. Its purpose was twofold: to allow the rearmament of Germany in view of the potential threat of the U.S.S.R. to western Europe, and to allay the fear of France and other European nations of the threat of German domination. The six nations represented were the same as those united in the E.C.S.C., but the E.D.C. was much more closely integrated

with the Atlantic community than was the E.C.S.C. The forces of the E.D.C. would be closely integrated under a centralized administration with a common procurement system and would maintain the closest possible liaison with British and other North Atlantic Treaty forces. Great Britain gave the E.D.C. a guarantee that any attack on the E.D.C. would automatically bring Great Britain into the war. France demanded a similar guarantee from the United States and above all precise guarantees by Great Britain and the United States against any future withdrawal of Germany and German armed forces from the E.D.C.

With the ratification of the E.D.C. treaty by the six nations, the full sovereignty of Germany would be restored. The treaty foresaw the creation of a total of 43 combat groups, of which 12 would be German, and of a tactical air force of 5,200 planes, including 1,350 German planes. The total German manpower contribution was fixed at 409,000, of whom there would be 156,000 in the ground forces, 156,000 in service and supply forces, 85,000 in the air force and 12,000 in the navy, which would be limited to vessels of 1,500 tons or less. This new European army would have a solely defensive role. The member nations pledged themselves to build their military strength without retarding social progress. The organs of the E.D.C. would consist of a council, an assembly and a commissariat. The council, formed by one ministerial representative from each of the six nations and with the chairmanship rotating among them, must approve the appointments of the higher officers. The commissariat would prepare and carry out the organizational plans for the army and would decide upon a common defense budget, a program for a common armament production, and common mobilization plans. The army would include both draftees, whose active service period was intended to be 18 months, and volunteers who would sign up for longer periods of service. Special European army schools were to be organized to train officers for this new integrated army.

After ratification of the E.D.C. agreements and of the peace contract between Germany and the Allies, the Allied control on the German production of heavy and light weapons would be lifted. The E.D.C. agreement provided that production of armaments for its forces, of which Germany would be a member, must be licensed by the E.D.C. commissariat and that orders for the production of certain weapons would not, in general, be given to plants located in strategically exposed areas, such as the Ruhr and the Rhineland. The German government, while allowed to engage in nonmilitary atomic research, pledged not to manufacture atomic, chemical and biological weapons, guided missiles, naval vessels and military air craft, on the condition that German troop contingents would be supplied with these weapons on as favourable a basis as other contingents of the E.D.C.

Thus the foundations were laid for the creation of the first European army in history, based upon the voluntary co-operation of the contributing members. This army was clearly envisaged as a part of the North Atlantic Treaty forces and was thus an important step toward the integration of Germany, France, Italy and the Low Countries into the Atlantic union. Yet at the end of Oct. 1952 the nationalist fears and hopes of the various European nations, especially in France and Germany, were still strong enough to make ratification of the E.D.C. agreements by the various parliaments doubtful. The memories of bitter conflicts in the past still bred a distrust, which the leading statesmen of the nations involved tried hard to overcome. There was also the danger that certain circles in Germany and France, and to a lesser degree in the other countries, would use the plans and slogans of European union for the furtherance of nationalist purposes. In spite of these diffi-

culties, the future of European unity, within a wide Atlantic union, looked brighter at the end of 1952 than in any other period of history. (See also MUTUAL SECURITY PROGRAM; NORTH ATLANTIC TREATY ORGANIZATION).

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Events of the Year: see CALENDAR OF EVENTS, 1952, pages I-16.

Exchange Control and Exchange Rates.

The rise in raw material prices following the outbreak of war in Korea had caused the terms of trade of most industrial countries to deteriorate. This, together with the impact of rising rearmament expenditures, had weakened the international economic position of various European countries. As a result, the currencies of raw material producing areas had generally been relatively strong in 1951 and some countries had relaxed their exchange controls. At the same time there had been a tendency toward more strict exchange controls in Europe.

In 1952 these movements showed signs of reversing themselves. Most raw material prices fell, but inflationary conditions—which had sometimes been stimulated by the 1950-51 boom—persisted in certain raw material producing countries. On the other hand, the terms of trade of most industrial countries improved, and their balance of payments deficits were reduced as the restrictions they had imposed on imports began to take effect. Therefore 1952 saw some currency depreciations, or tighter exchange controls, or both, in various raw material producing countries. In industrial countries, on the other hand, there were very few rate changes. In a few instances exchange controls were eased, but on the whole the strain on available resources imposed by rearmament continued so that these relaxations were neither numerous nor far-reaching.

United States.—In the course of 1951 the United States balance of payments position had grown stronger, a net gold and dollar loss of \$89,000,000 in the first quarter of the year having given place to a net gain of \$325,000,000 in the last quarter. The movement in reserves, however, probably exaggerated the change in the country's international economic position, since imports were seasonally high and were also influenced by inventory building abroad while there was a lag in the outflow of foreign aid pending the passage of new legislation.

The international economic position of the U.S. remained strong in 1952, and the U.S. dollar was still at a premium in most free markets of the world, with the notable exception of Canada. As the months passed, measures were taken both in the U.S. and abroad to alleviate the disequilibrium which was reflected in the inflow of gold. The current account surplus was reduced mainly because the European coal situation improved, the restocking movement ran its course and the import restrictions which were imposed in some countries to stem the outflow of gold and dollar reserves began to take effect. Furthermore, the amount of U.S. government aid began to increase again, with a rising proportion being devoted to the support of the defense efforts of western Europe. In the first quarter of 1952 the U.S. surplus on current account (goods and services) amounted to \$1,400,000,000 compared with \$1,900,000,000 in the last quarter of 1951. In the spring the U.S. gold reserve continued to rise, but through the summer months it remained

virtually stationary at about \$23,500,000,000. Foreign dollar balances, on the other hand, rose steadily and at the end of July were about \$1,000,000,000 higher than they had been at the end of 1951.

Canada.—Mainly as a result of its improving trade position and the continued inflow of capital from the United States the Canadian dollar had appreciated gradually in the latter half of 1951, and on Dec. 14 the Canadian monetary authorities had abolished all exchange controls. By the middle of Jan. 1952 the Canadian dollar was at par with the U.S. dollar. Influenced by heavy London buying and also by seasonal factors such as the beginning of the tourist season, it touched U.S. \$1.04 at the beginning of July. Thereafter, the premium dropped back to about 2% as Canadian purchasers, taking advantage of the high rate, began to purchase securities payable in either U.S. or Canadian dollars, and as U.S. holders of Canadian shares realized their profits. Official Canadian gold and U.S. dollar reserves rose from U.S. \$1,779,000,000 at the end of 1951 to \$1,830,000,000 at the end of June 1952.

Latin America.—Domestic inflationary conditions, which had sometimes been aggravated by the post-Korean raw material boom, weakened the international economic position of several Latin American countries. Argentina and Uruguay in addition suffered from the sharp fall in wool and linseed prices.

In Argentina various changes were made in 1952 both in the exchange rate structure and in the system of exchange controls. In the summer of 1951 the granting of licences for imports payable with exchange obtained on the free market was suspended because the demand had increased sharply for nonessential imports, particularly automobiles, paid for in this manner. As a result the free dollar rate had risen very substantially. This system of importing was reinstated in Jan. 1952. The balance of payments position continued weak, however, particularly after the price of wool fell, and in an effort to stimulate exports, the government introduced a series of mixed rates applicable to various products. These new rates all implied a substantial depreciation of the peso. From February on, 60% of the proceeds of cheese, butter and casein exports had to be sold at 7.5 pesos per U.S. dollar and the remainder at the free rate of about 10 pesos per dollar, giving a depreciation of 25% from the rate of 7.5 pesos previously used. In July the effective exchange rate for wool exports was depreciated by 20% to 6.25 pesos per U.S. dollar by a similar procedure. Whereas wool exports had previously taken place at the 5-peso rate, now 50% of the proceeds could be sold at the 7.5-peso rate. Further, in February the 7.5-peso rate was made applicable to exports of frozen cooked meats which had previously moved at the 5-peso rate. In a further effort to stem the outflow of reserves tighter import controls were instituted at the end of July.

A very high level of imports brought about by a fear of shortages and increased prices following the Korean war had caused a considerable decline in Brazil's foreign exchange reserves in 1951. The foreign exchange position remained difficult in 1952 despite a purchase of \$37,500,000 from the International Monetary fund in February. The curb rate dropped from Cr\$ 36 to the dollar in October, compared with about 30 at the end of 1951, and rumours of devaluation were prevalent.

Largely because of inflationary developments at home and a fall in the world market price paid for Chilean copper, Chile's balance of payments position was also weak in 1952. The hope which had been raised in 1950 that Chile might proceed to stages to a unitary rate proved false. In a further attempt to stimulate agricultural exports new mixed rates were introduced involving a substantial depreciation of the peso. The free-market rate for the dollar weakened steadily, from about 93 pesos per U.S. dollar at the end of 1951 to 136 pesos per dollar in August

The foreign exchange position of Paraguay remained weak in 1952 and in August, after consultations with the International Monetary fund, important changes were announced in the country's exchange rate structure. These changes involved a substantial devaluation of the guaraní. The par value of 6 guaraníes per U.S. dollar remained unchanged but was applicable only to government nontrade payments. A basic buying and selling rate of 15 guaraníes per U.S. dollar replaced the two rates of 6 and 15 guaraníes per U.S. dollar which had been applicable to most imports. A limited number of essentials such as wheat and petroleum products was imported at a temporary subsidy rate of 6 guaraníes per U.S. dollar, while surcharges of 6 and 15 guaraníes were levied on semiessentials and luxuries, giving effective rates of respectively 21 and 30 guaraníes per U.S. dollar for these classes of goods.

In Uruguay the decline in reserves which had begun in the previous year continued in 1952. It was attributable to the high level of imports generated in part by the 1950-51 boom in wool and was accentuated by the failure of these and other basic exports such as hides to move after the export boom had passed and world market prices had dropped substantially. To correct this weakness, which was reflected in a rise in the free dollar rate from 2.35 pesos per U.S. dollar at the end of 1951 to 2.73 in March 1952, the monetary authorities took various administrative steps to restrict the availability of foreign exchange for imports, particularly those requiring payment in dollars.

The Sterling Area.—The weakening of the sterling area's position, reflected in the \$1,500,000,000 drain in its gold and dollar reserves in the second half of the year, had been the most spectacular international economic development in 1951. It had been caused in part by the continuing deficit with the European Payments union, which was latterly being met fully in gold. Discussion had been held among the commonwealth finance ministers on the means of halting the drain, and each country was to take appropriate measures to ensure that the area as a whole would be in external balance by the end of 1952. For the United Kingdom itself, this was to mean a reduction of its deficit with nonsterling countries to £100,000,000 and the maintenance of a surplus of the same magnitude with the rest of the sterling area.

Following the commonwealth finance ministers' conference, new restrictions had already been imposed in Nov. 1951 on U.K. payments to nonsterling countries, and the first half of 1952 saw further measures taken by the various countries in the sterling area to achieve the aforementioned aims. Licensing controls were tightened in the British Commonwealth countries in March, and additional steps had to be taken in the summer in Australia, in Pakistan and also in the U.K. itself. In that country the over-all deficit on current account of almost £400,000,000, recorded in the second half of 1951, was replaced by a surplus of £24,000,000 in the first half of 1952 so that the U.K. achieved its first objective of balancing with the rest of the world by the end of 1952. Mainly as a result of the cuts made in imports and also because of the increasing volume of U.S. aid, the drain on the sterling area's gold and dollar reserves had been halted by March and these remained fairly steady around \$1,700,000,000 in the second quarter. No doubt because of this improvement the rates for transferable account sterling grew firmer in the summer.

The position of the sterling area remained precarious, however, and the efforts to increase exports were not meeting with the success hoped for. Furthermore, the fall in the prices of some raw materials made it more difficult than had been expected for some of the sterling area countries to improve their balance of payments position. In these circumstances a con-



"HELLO, SHORTY," a cartoon by Manning of the McNaught Syndicate, Inc., published in 1952

ference of the British Commonwealth countries to survey every aspect of the sterling area's financial, commercial and economic problems was arranged for November. It was expected that this would be followed early in 1953 by talks with the United States.

There were no important exchange rate changes in the sterling area in 1952. A par value of Rs. 4.76190 per U.S. dollar was established for the Ceylon rupee on Jan. 17, 1952. This was the same as the effective rate since the devaluations of Sept. 1949. In the course of the year the fall in rubber prices brought about a decline in the country's foreign exchange reserves, and in September the limits on remittances to foreign countries and on basic travel allowances were lowered.

Continental Europe.—There were not many important developments in European exchange control systems in 1952. Such changes as occurred were associated with shifts in the position of various countries either with the dollar area or with the rest of Europe. The latter changes are shown in the operations of the European Payments union. At the end of 1951 Belgium, Italy, Switzerland and Portugal had built up large surpluses with the union; the Netherlands, Germany and Denmark were improving their positions; while France and the United Kingdom were accumulating heavy deficits which they had to meet largely in gold. After the spring of 1952, when France and the U.K. had taken drastic measures to restrict imports, when Italy had tried to expand them by relaxing import and exchange controls and when Belgium had even gone to the extreme position of curbing exports in order to limit the credit it had to extend to the European Payments union, the transactions became more balanced. The positions of France and the U.K., though still weak, were no longer deteriorating so rapidly, while Belgium was no longer recording large surpluses. On the other hand, both Germany and the Netherlands were accumulating substantial surpluses for part of which they were receiving payment in hard currency.

There were few important changes in European rates of exchange. One noteworthy development was the spread of hard

Exchange Rates of Selected Countries

Note: Includes only currencies regularly quoted in New York during 1952. Averages of certified noon buying rates in New York for cable transfers. In cents per unit of foreign currency, corrected to two decimal places.

Country	Unit quoted and type of exchange	Annual average rates			Monthly average rate, 1952			
		1938	1950	1951	Jan.	March	June	Aug.
Argentina	Peso							
	Basic	32.60	26.57	20.00	20.00	20.00	20.00	20.00
	Pref.	—	13.33*	13.33	13.33	13.33	13.33	13.33
	Free	—	8.29†	7.07	6.98	7.17	7.18	7.19
Australia	Pound	389.55	223.15	223.07	221.92	223.03	221.88	222.19
Belgium	Franc							
	Official	3.38	1.99	1.99	1.98	1.98	1.98	1.99
	Bank notes	—	1.97‡	1.96§	—	—	—	—
Brazil	Cruzera||	5.84	5.44	5.44	5.44	5.44	5.44	5.44
British Malaysia†	Dollar	—	32.79	32.85	32.69	32.78	32.51	32.45
Canada	Dollar							
	Official	—	90.91¶	—	—	—	—	—
	Free	99.42	91.47	94.94	99.49	100.38	102.09	103.98
Ceylon	Rupee	—	20.85	20.85	20.80	20.92	20.83	20.88
Denmark	Krone	21.83	14.49	14.49	14.49	14.49	14.49	14.49
Finland	Markka	—	—	0.44□	0.44	0.44	0.44	0.44
France	Franc	2.88	0.29	0.29	0.29	0.29	0.29	0.29
Germany (Fed. Rep.)	Deutschemerk	—	23.84°	23.84	23.84	23.84	—	—
India*	Rupee	36.59	20.87	20.87	20.82	20.95	20.87	20.89
Ireland	Pound	—	—	280.38*	280.38	280.38	278.46	278.85
Mexico	Peso	22.12	11.57	11.56	11.56	11.56	11.56	11.62
Netherlands	Guilder	55.01	26.25	26.26	26.32	26.32	26.32	26.32
New Zealand	Pound	392.35	277.28	277.19	275.39	276.91	275.71	276.09
Norway	Krone	24.57	14.02	14.02	14.02	14.02	14.02	14.02
Philippine Republic	Peso	—	49.62	49.64	49.66	49.68	49.68	49.68
Portugal	Escudo	4.43	3.47	3.47	3.49	3.49	3.48	3.48
South Africa	Pound	484.16	278.38	278.33	276.95	278.55	277.42	277.81
Sweden	Krona	25.20	19.33	19.33	19.33	19.33	19.33	19.33
Switzerland	Franc	22.87	23.14	23.06	22.88	22.95	23.14	23.29
United Kingdom	Pound	488.94	280.07	279.96	278.15	279.67	278.46	278.85
Uruguay	Peso							
	Basic	64.37	65.83	65.83	65.83	65.83	65.83	65.83
	Pref.	—	56.18	56.18	56.18	56.18	56.18	56.18
	Pref.	—	42.55	42.55	42.55	42.55	42.55	42.55

*Based on quotations beginning Sept. 1, 1950.

†Based on quotations beginning July 13, 1950.

‡Based on quotations beginning Oct. 11, 1950.

§Based on quotations through Sept. 19, 1951.

||Prior to Nov. 1, 1942, the official designation of the Brazilian currency was the milreis.

¶Beginning Aug. 27, 1951, quotations on Straits Settlements dollar were discontinued and quotations on Malayan dollar substituted. The two rates had been identical for a considerable period.

□Based on quotations through Sept. 30, 1950; official rate abolished after that date.

°Based on quotations through Aug. 14, 1952.

°Based on quotations beginning Oct. 29, 1951.

¶Based on quotations beginning June 22, 1950.

*Excludes Pakistan, beginning April 1948.

†Based on quotations beginning Oct. 29, 1951.

currency "retention schemes" which in fact resembled selective and competitive exchange depreciations. The first had been introduced in the Netherlands, which since 1949 had allowed Dutch exporters to retain 10% of their dollar earnings and sell them at a premium in the free market. Although the plan was adopted in an effort to expand Dutch exports to the dollar area, the premium tended to induce Dutch merchants to search for other foreign goods which might be shipped there, and arbitrage developed in several commodity markets. As a result it was widely alleged that the country using the retention scheme gained hard currency that might otherwise have gone to the countries in which the goods originated. In part as a reaction to the steps taken by the Dutch, similar schemes were adopted in five other countries, Austria (for a time and to a limited extent), France, Denmark, Germany and Norway. Objections to the use of this device were raised at the annual conference of the International Monetary fund, and an investigation of the prevalence and consequences of the practice was instituted.

In Austria export industries had been allowed to retain part of their foreign exchange earnings to meet the cost in foreign exchange of their import needs. On Jan. 2, 1952, these quota arrangements were abolished, and exporters were required to turn over all their export proceeds to the National bank for immediate conversion into schillings. In place of the retention quota, however, preferential treatment in the allocation of exchange for imports was given to the export industries.

Notably because of its continued strong position in the European Payments union, Belgium's gold and foreign exchange reserves rose by the equivalent of U.S. \$150,000,000 in the first half of 1952. The large Belgian surplus caused the E.P.U. acute problems, and it was financed partly by receipts of gold and partly by credits granted to E.P.U. In these circumstances Belgium sought to reduce its surplus with E.P.U. and at the

same time strengthen its dollar position. Various steps were taken, ranging from the blocking, for a period of up to six months, of up to 25% of Belgian export proceeds, to the remission of export taxes on sales to the dollar area. Despite these measures the E.P.U. had to take special steps involving substantial gold payments to cover its deficit to Belgium. Later in 1952, however, when the demand for steel had become less insistent, and when the position of textile exporters was rather difficult, the surplus shrank and the curbs on exports were made less strict.

On the occasion of a drastic monetary reform a new currency was introduced in Bulgaria on May 12. The new leva contained 130.70 mg. of gold and 1.70 leva was equivalent to one rouble. This gave a rate of 6.80 leva per U.S. dollar compared with the previous rate of 288 leva. Like the Rumanian measures of Jan. 1952 and those in Poland and the U.S.S.R. in previous years, the appreciation of the lev had the effect

of bringing it into line with the other currencies of the Soviet bloc, all of which were greatly overvalued in terms of the U.S. dollar. Like the measures taken in these other countries also, however, the change had little or no effect on Bulgarian foreign trade transactions, which continued to be negotiated by state-owned agencies on the basis of world market prices.

Because of the improvement in the country's foreign exchange position in the latter part of 1951, Denmark's exchange restrictions, particularly those relating to travel allowances and other Scandinavian countries and the U.K., were relaxed somewhat in the first half of 1952. The dollar position remained precarious, however, and in an effort to encourage dollar exports a scheme was introduced on Aug. 15 whereby exporters of Danish products to the dollar area were permitted to import European goods that were still subject to quantitative import controls up to a value of 10% of their dollar exports.

The official buying and selling rates for the Finnish market remained at 229 and 231 per U.S. dollar. In order to put an end to uncontrolled transactions in Finnish currency which were taking place at a considerable discount and also to reduce costs for foreign travellers to Finland on the occasion of the Olympic games, preferential rates were introduced on June 1 for tourist transactions. The premiums for purchases of Finnish currency ranged from 34% to 56% above the official rate, with U.S. dollars and Swiss francs carrying the highest, and Norwegian and Danish currencies the lowest premiums. Finnish travellers abroad, on the other hand, had to sell their currency at corresponding discounts.

Mainly because of inflationary developments at home, the deterioration in the French foreign exchange position, which had started in the second half of 1951, gained momentum in the last months of 1951 and the beginning of 1952. In February when the free-market rate in Paris had reached more than

per U.S. dollar and the stabilization fund was losing substantial amounts of hard currency to E.P.U., the French government imposed strict curbs on imports. Later the French position E.P.U. improved somewhat, and the restrictions were eased slightly. However, France's foreign exchange situation remained precarious despite substantially larger U.S. aid. In August the exchange rate for the U.S. dollar had again risen to more than 410 francs, compared with a low of about 390 achieved in May.

In the first few months of 1952 Germany's gold and dollar reserves fell because its hard receipts from E.P.U., although substantial, were not sufficient, together with Mutual Security Agency aid, to cover its dollar deficit. To reduce the dollar gap mainly by eliminating exports of German goods to the dollar area through third countries, the ministry of economic affairs introduced on April 1 a system whereby all exporters could retain 4% of their proceeds to import designated goods for export production. In addition, exporters to hard-currency areas were allowed to retain 36% of their proceeds either for the export of various raw materials and other essential goods or for sale to other importers. In the second quarter of the year German gold and dollar reserves rose again, particularly because of the country's growing surplus with E.P.U.

On Aug. 14 Germany became a member of the International Monetary fund. For the time being, however, no par value was established for the deutschemark.

A monetary reform similar to those carried out in recent years in the other currencies of the soviet bloc was initiated in Rumania on Jan. 28, 1952. Like the other changes it involved sharp appreciation of the leu, and its definition in terms of gold and the rouble, the rate for which was set at 2.80 lei. This gave a cross rate of 11.2 lei per U.S. dollar instead of the previous rate of 150 lei. Like the measures taken by the other countries of the soviet bloc, this step had no practical importance for foreign trade.

At the end of 1951 important changes were made in the Yugoslav economic system. Greater reliance was placed on the market mechanism and less emphasis was given to the centralized direction of production and trade. In 1952 the relaxation of administrative controls was carried further. As of July 1 the monopolistic position of the state foreign trade organization was abolished, and authorized enterprises were allowed to do business with foreign countries. The licence requirements for practically all exports and most imports were withdrawn, but different types of transactions were made more or less attractive by subsidy and surcharge arrangements. Exporters were permitted to retain 45% of their proceeds for their own import needs and also to sell this exchange on the "free" market to other importers who possessed import permits but had not been permitted exchange at the official rate. However, the Yugoslav National bank, which organized these exchange operations, retained the right to intervene in the market.

Middle East.—In the middle east the currencies of some countries weakened in response to the fall in raw material prices. The most striking developments, however, the devaluation of the Israel pound and the weakening of the Iranian rial, were brought about by conditions peculiar to those countries. In Afghanistan the currency was devalued by almost 30% in January when all other efforts to stop the steady fall in the purchasing power of the currency had failed. The new buying and selling rates were respectively 16.08 and 16.71 afghanis per U.S. dollar.

In 1951 when the price of cotton was high, the freedom of Egyptian exporters to dispose of their export proceeds was increased. With the volume and price of cotton exports falling and with the country's transferable sterling balances decreasing, Egypt became short of sterling. To cope with this situation the

scope for transactions in "export pounds" was sharply reduced in the spring. In June further measures were taken. Banks were required to ask importers to cover any credit opened for sterling imports by paying in Egyptian currency the total amount of the credit. In addition import licences had to be obtained for most goods which were produced domestically and also for luxury and semiluxury articles.

Following the stoppage of oil production and exports in mid-1951, Iran's monetary reserves had declined gradually. To re-establish the balance between foreign exchange receipts and expenditures a strict import-licensing policy and an exchange certificate system were inaugurated. Licences were required for all purchases of exchange which were not to be used for the purchase of certain goods considered essential, and foreign exchange was to be furnished only to holders of exchange certificates which could be purchased in the free market from exporters. The price of these certificates rose steadily. When it reached about 83.50 rials per U.S. dollar at the end of April, the Bank Melli was authorized to intervene in the market and buy and sell certificates at 42.50 rials per U.S. dollar. Since the official selling rate was 32.50 this gave an effective selling rate of 75 rials per U.S. dollar.

Because of the continuing disequilibrium in Israel's balance of payments, the free-market rate for the Israel pound had weakened steadily in 1951 and the first months of 1952. On Feb. 20, when it had dropped to 50 cents per pound, compared with the official rate of \$2.80 per pound, a new exchange rate system was adopted. Foreign exchange transactions thereafter took place at three different rates. The old rate of \$2.80 per pound was still applicable to government transactions, to essential imports and diamond exports. Institutional remittances, tourist receipts and the proceeds of various exports, notably citrus fruits, were converted at a rate of \$1.40 per pound, which was also applicable to goods classified as semiessential. The third rate, \$1 per pound, was applicable to other export transactions and, in order to attract private capital from abroad, to most incoming exchange destined for investment.

On Aug. 29 Jordan became the 54th member of the International Monetary fund, without, however, a par value being established for the Jordan dinar.

The exchange rate structure in Lebanon was simplified on May 24 when the government abolished the requirement that companies operating under special concessions (mainly oil companies) purchase 80% of their local currency needs at the official rate of L.L. 2.2 per U.S. dollar. The last of the mixed rates was thus eliminated. Apart from government operations, which continued at the official rate, all commercial and financial transactions were carried on at the fluctuating free rate, which fell slightly in sympathy with the downward trend of the world market price for gold.

Far East.—Apart from the exchange rate changes in Indonesia, which amounted to a substantial devaluation of the rupiah, brought on mainly by inflationary conditions within the country, there were only minor changes in exchange rates and controls in the far east.

Burma became a member of the International Monetary fund on Jan. 3, 1952. No par value was established for the rupee, however, and the effective rate remained unchanged. Effective July 1 a new currency unit, the ryat, was introduced, equivalent to the rupee.

Important changes were made in the exchange rate system in effect in Indonesia. On Feb. 4, 1952, the old exchange rate certificate system was abolished, and a new official rate of 11.40 rupiah per U.S. dollar replaced the old rate of 3.80 rupiah, which had, however, had only nominal significance. This new rate was applicable to all nondollar receipts from exports and

financial transactions and to all essential imports from countries outside the dollar area. For luxury imports from those countries a 70% surcharge had to be added to the official rate, giving an effective rate of 19.43 rupiah per U.S. dollar. For transactions with the dollar area, a certificate system was retained, the aim of which was to maintain a balance between dollar income and outgo. Exporters to the dollar area received, in addition to rupiah at the official rate, negotiable dollar certificates which importers of dollar goods had to produce in addition to rupiah at the rate applicable. At first these certificates were marketed at 2 rupiah per U.S. dollar, giving effective rates for dollar imports of 12.93 and 20.93 rupiah per U.S. dollar respectively. However, the price dropped gradually to 0.25 rupiah per U.S. dollar. Later in the year falling rubber prices caused a drop in Indonesia's foreign exchange reserves, and on Aug. 12, in an effort to curb luxury imports further, the authorities introduced additional surcharges, giving two new effective rates of 22.86 and 34.29 rupiah per U.S. dollar applicable to imports of semiessentials and luxuries respectively. The dollar certificate system was retained and was applicable to all the previously mentioned basic rates.

There was no change in the Japanese exchange rate structure, but the dollar retention scheme in force since 1949 was changed in July to permit exporters to retain a larger proportion of their foreign exchange proceeds to import goods important either for the export industry or for the rehabilitation of the economy. On Aug. 13 Japan became a member of the International Monetary fund, but no par value was established for the yen. (See also GOLD; INTERNATIONAL TRADE; TARIFFS.)

(A. STE.)

Exhibitions: see FAIRS AND EXHIBITIONS; SHOWS.

Experiment Stations, Office of: see AGRICULTURAL RESEARCH ADMINISTRATION.

Exploration and Discovery.

During 1952 a considerable amount of exploratory activity took place and a number of expeditions were in the field. The early months of 1952 saw the conclusion of the large antarctic expedition which was under Norwegian-British-Swedish auspices. The expedition had its base in Queen Maud Land, and had devoted several years to a thorough study of this region. Topographic surveying was carried out, both by land parties and also by aerial photography. Ice thicknesses were measured by the sonic method and much other scientific data were gathered. At the end of the antarctic summer the expedition personnel were evacuated and the work which had gone forward over a period of several years was terminated.

During this same time, the Expéditions Polaires Françaises under the leadership of Paul-Émile Victor operated both in the south and north. The southern expedition carried out further exploratory work in Adélie Land, while the northern component operated in central Greenland. Inasmuch as the seasons are opposite, it was possible for several of the expedition personnel, including the leader, to take part in both phases of the operation. Some of the personnel remained in the camps over the winter and carried out routine meteorological measurements as well as making physical studies of ice thickness, movement, temperatures and densities at various depths. The Greenland station was in the centre of the Greenland icecap. The most important geographical discovery was that in places the ground beneath the ice was below sea level, suggesting that perhaps Greenland is in fact two or three separate large islands.

The Juneau Ice Field Research project of the American Geographical society continued its work. The winter party consisted of eight men who spent a month during the middle of the winter at the camp which had been established on the Juneau ice field

in Alaska. The summer party was larger and made mainly geological studies, glaciology and meteorology being included usual. Surveyors and medical officers accompanied the party. This extensive program had been going on since 1948 and a vast amount of scientific material was being gathered.

A French expedition to Mt. Ararat, one of the objectives which was to seek the reputed remains of Noah's ark, returned after scaling the peak and spending some time on the mountain with the report that the large object which had been seen far below and which had given rise to the rumour that it was Noah's ark was in fact a large basalt rock of odd shape.

Oceanographic exploration of the ocean bottom continued, most notable work in this connection being that done by an expedition from the Woods Hole Oceanographic institution and Columbia university. Maurice Ewing, on board the seagoing "Kevin Moran," made an extensive survey of the northwest Atlantic floor, and found that the floor was surprisingly flat. Further, he found it to be transected at one place by a canyon about 300 ft. deep, which was followed for more than 800 miles running in an approximate north-south direction. The gorge was located roughly 800 mi. E. of Boston, Mass.

Important new work was done on the recently discovered islands of ice which were afloat and frozen into the ice field of the Arctic ocean. Three large ice islands, designated as T-1, T-2, and T-3, in the sector north of Alaska and Canada, were selected for study, and the U.S. air force landed a DC-3 equipped with skis on T-3. Astronomical position determinations showed that the island moved about 1½ mi. per day, in an erratic direction. Ice cores were taken to a depth of 22 ft., and several layers of dirt were found. These appeared to be of a wind-carried nature. It was concluded that the movement of the island was mainly caused by wind stresses, since the relative motion of the water was measured and found to be small. Polar bears and foxes were found in this region, as well as a gull-like bird, the jaeger. The ocean bottom, as shown by seismic soundings, lay at 12,000 ft. below sea level in this region, and was comparatively flat. A few suboceanic mountains were found, rising at 3,000 ft. above this flat bottom. The station on T-3 was occupied for several months. Test flights over the north pole and down to Ellesmere Land were undertaken, and a landing was made on T-1, which was found to have the same general characteristics as T-3.

Further attempts to climb Mt. Everest were made during 1952. It was agreed, since there was time in a climbing season for only one serious attempt and since Alpinists from several nations desired the opportunity to climb this peak, that the opportunity to send an expedition in 1952 should go to the Swiss. Accordingly a Swiss expedition started from Nepal and got up to within 1,000 ft. of the summit in the spring. A second expedition, also Swiss, was making another attempt on the peak late in the year. This was the first time that the fall climbing season had been used, as it is generally even shorter than the spring season. An old Himalayan legend, that of the "Abominable Snow Man," again appeared in the news as the Everest climbers reported seeing its tracks. The leader of the Swiss expedition, Edouard Wyss-Dunant, stated that in his opinion there was probably a large bear. In the meantime, Eric Shipton of the Royal Geographical society and other British organizations attempted an ascent of Cho Oyu. This peak is about 26,800 ft. high and is located about 18 mi. W. of Everest. Acclimatization studies were made and new routes pioneered on the Nepalese side of the high peaks.

The ship "Discovery," working for the Falkland Islands Dependencies survey, continued its work in antarctic waters and carried out a number of new studies in this region.

Speleology had an active year, if a somewhat disturbing

Exploration of caves led to some new discoveries and to one tragedy. A group of 15 Italians undertook the exploration of a cave at Vesolo, on the Salerno peninsula. The cave was more than 2,000 ft. deep, the deepest on the peninsula. The expedition was under the leadership of Pietro Parenzan of the University of Naples. A new room about 300 ft. high and a subterranean lake were found. Almost simultaneously a Swiss expedition exploring a new cave in the mountains near Luzern was trapped by waters which rose rapidly after an unexpected rain. Fortunately, the expedition had sufficient food supplies and was rescued after several uncomfortable days. The expedition in the French Pyrenees did not fare so well. Here, during a descent a rope clamp came undone and Marcel Loubens fell to the bottom, where he subsequently died. The cave in this case was named the Pierre St. Martin, and was located in the central Pyrenees close to the Spanish border. Before the accident, the expedition had found several large new rooms, and had recorded a maximum depth of more than 1,100 ft. by sounding fires.

Studies and exploration of the upper atmosphere continued, without any new records being established. A new technique was successfully pioneered in the far north, a rocket being carried aloft by a large plastic balloon and fired from the balloon when it was about 20 mi. up. The technique was found to be workable, and a much smaller rocket was used than would have been necessary if it had been shot up from the ground. The experiments were carried out in Baffin bay. The New York University Cosmic Ray Research project also made a series of high-altitude balloon flights in the vicinity of the north geomagnetic pole for the purpose of measuring the number of cosmic ray neutrons. The number of neutrons must be known to enable the radio-carbon dating procedures to be carried out with accuracy.

The Indian Geological survey was engaged in rechecking all the altitudes of the main Himalayan peaks. Many of the peaks were triangulated upon from distances of 50 mi. or more, and the refraction correction alone in this case was estimated to be as much as 1,000 ft. It was expected that new and improved altitudes would in due course be available. Further evidence seemed to be accumulating that mountain building was still going on, and that the heights of the peaks might be slowly rising. Mt. Fitz Roy, in Argentina near the Chilean border, was included. Although this mountain is not among the highest in the Andes, being only 3,440 m. (roughly 11,000 ft.) in height, the highest 1,400 m. (more than 4,000 ft.) is a granite spike with extremely steep sides. It therefore presented a problem of considerable technical difficulty. This was solved and a French expedition reached its summit.

Further study of the peaks in the Wrangell group in Alaska were carried out. In preparation for a cosmic ray research expedition planned for 1953, Terris Moore, president of the University of Alaska, and Serge A. Korff of New York university flew around and over the peaks, and made practice landings on snow surfaces at various altitudes in order to test the feasibility of logistic support to ground parties.

The Mexican archaeologist Alberto Ruz Lhuillier made an important find at Palenque in the state of Chiapas in Mexico, where a ceremonial chamber, a great altar and several skeletons were found inside what had previously been considered a solid structure. The skeletons were evidently sacrificial victims. This had altered the belief that all Mexican pyramids are merely solid mounds.

An expedition led by W. Q. Kennedy of the University of Leeds, Eng., spent three months in the Ruwenzori, preparing geological maps of the area which, it was hoped, would shed new light on the formation of the Great Rift valley. An expedition under the auspices of the Durham University Exploration so-



ADM. ROBERT E. PEARY'S CACHE, left in 1909 on Ellesmere Island, 413 mi. from the north pole. It was found by members of a U.S. air force expedition on May 4, 1952. The cache of wood-crated metal boxes was marked by a tripod of ski runners

ciety studied glaciology in Iceland near Esjufjoll. An Oxford University Exploration club expedition to Terhi-Garhwal studied the customs of the Himalayan tribes. The expedition of Prince Peter of Greece and Denmark, unable to obtain permission to enter Tibet, made anthropological studies in Nepal and Assam. (See also ANTARCTICA; ANTHROPOLOGY; ARCHAEOLOGY; COAST AND GEODETIC SURVEY, U.S.; MARINE BIOLOGY; NATIONAL GEOGRAPHIC SOCIETY; OCEANOGRAPHY; SMITHSONIAN INSTITUTION.)

(S. A. K.)

Explosions: see DISASTERS.

Export-Import Bank of Washington. From Jan. 1, 1952, through Sept. 15, 1952, the Export-Import bank, as the foreign lending arm of the United States government, approved new loans of \$523,300,000, bringing the total loans authorized since the time of its establishment in 1934 to approximately \$5,800,000,000. Disbursements during this period were approximately \$405,000,000 and repayments \$152,000,000. Outstanding loans and undisbursed commitments of the bank totalled approximately \$3,318,000,000 in 48 countries as of Sept. 15, 1952.

These loans were for development projects designed to strengthen the economic stability of the free world in the fields of transportation, power development, agriculture and industry, including development and expansion of foreign sources of materials essential to U.S. industry in general and the defense stockpile in particular. Such financing is generally limited to the dollar costs of development projects in other countries which increase their productive capacity, thereby improving their foreign exchange position. Loans were also made for the purchase of U.S. raw cotton for use by industries in other countries. The bank also extended credits which assisted U.S. suppliers in financing exports to friendly countries.

(S. SD.)

Exports: see AGRICULTURE; INTERNATIONAL TRADE. See also under various countries.

Eye, Diseases of the. Toxoplasmosis is a disease of infants and children which occasionally appears in adults as a result of infestation by an organism which had been identified microscopically as a protozoan parasite. The mode of transmission of this parasitic infection from animal to animal or to humans had not by 1952 been demonstrated. The chorioretinitis— inflammations of tissues of the eye—and other ocular changes which occur in human congenital and infantile toxoplasmosis are valuable diagnostic signs of the disease. Before toxoplasmic chorioretinitis was discovered, fundus disease which was frequently observed in the eyes of infants and young children had been variously diagnosed as "foetal chorioretinal infection," "congenital developmental anomaly of the retina and choroid" and "birth injury with chorioretinal haemorrhage." Through the use of proper clinical and laboratory studies, a considerable number of these cases could now be classified as being caused by toxoplasma. In those cases of acquired juvenile and adult toxoplasmosis which had been reported, there were apparently no associated ocular lesions. Toxoplasmosis had not been proved to be the undoubted cause of uveitis in adult patients.

It was reported in 1952 that the organism of toxoplasmosis had been demonstrated in some types of chorioretinitis in adults. Although the cause of some types of choroiditis in children had been known to be toxoplasmic in origin on the basis of serologic examination, the presence of the organism in adults with acquired choroiditis was in doubt until the recent demonstration of the organism in eye lesions previously undiagnosed or thought to be caused by some other disease, particularly tuberculosis.

It was thought that protection of the human lens against cataract formation by X-rays might be provided by the intravenous injection of cysteine if results, which had been successful in experiments on animal eyes, were equally successful in humans. The eye of an untreated animal, when exposed to 1,500 roentgen of X-rays, will become cataractous within a few weeks, but the administration of measured amounts of cysteine just prior to the exposure to X-rays protects the lens from developing a cataract. Another important protective feature was that falling out of eyelashes did not occur. Of a series of chemicals tested, cysteine proved to be the most effective. Large doses of glutathione decreased to a moderate degree the radiosensitivity of the lens. Thiourea also protected the lens from X-ray damage but only to a moderate and equivocal degree. The drugs which did not contain sulfhydryl groups did not have beneficial effects. This discovery supported the chemical mediation theory of biologic effects from radiation against the target theory of direct ionization.

A substitute acrylic lens may be inserted into the anterior chamber of the eye after removal of a cataractous lens. The advantage of this procedure over the usual cataract operation is the possibility of useful vision following removal of the cataract without the necessity of wearing "cataract glasses," which permit good vision over a restricted field and are often difficult to adjust for good binocular vision where only one eye is affected and the other eye has good vision. By the use of the implanted acrylic lens, single binocular vision (stereopsis) may be restored without having to resort to use of contact lenses or to await the removal of a cataract from the second eye. (See also CHEMOTHERAPY; CORTISONE, HYDROCORTISONE AND CORTICOTROPIN.)

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Sallmann and C. M. Munoz, "Further Efforts to Influence X-Ray Cataract by Chemical Agents," *Tr. Am. Ophth. Soc.* (1951), 49:391-417 (1951); Harold Ridley, "Intra-Ocular Acrylic Lenses: A Recent Development in the Surgery of Cataract," *Brit. J. Ophth.*, 36:113-122 (March 1952). (W. L. BE.)

Facsimile: see TELEGRAPHY.

Faeroe Islands. A self-governing part of the kingdom of Denmark, the Faeroe Islands are situated in the North Atlantic between Iceland and the Shetland Islands about 200 mi. N.W. of the latter. Area: 540 sq.mi.; there are 21 islands of which 18 are inhabited. Pop.: (1945 census, 29,178; (mid-1951 est.) 32,000. Language: Faeroese, akin to Icelandic rather than to Danish. Religion: Lutheran. The capital is Thorshavn, on the island of Stromo (pop. 1945, 4,390). Governor general in 1952, C. A. Vagn-Hansen.

History.—On Feb. 1, 1952, the Sjoivinnu bank suspended payments; thus the crisis, which dated from large post-World War II investments, was not being overcome either by the subscription of new shares or by the 2,000,000 Kr. loan from the Danish government in Aug. 1951. All the share capital of the bank was lost. The Sjoivinnu bank reopened on Feb. 27 after having been reconstructed by the subscription of 500,000 new shares in the islands, a 1,600,000 Kr. loan from the Danish government, a further 1,350,000 Kr. government loan guaranteed by the Faeroese landsting (upper house) and a 5,000,000 Kr. loan from the Danish National bank, also guaranteed by the landsting. From the European Recovery program fund 4,000,000 Kr. were lent to re-equip the Faeroese fishing fleet. The crisis roused a strong Labour opposition to the Sambandspartiet party and the Folkeflokkurin, the latter, whose leader Thorstein Petersen represented the employers, being held responsible for the crisis. (H. LN.)

Fairs and Exhibitions. **United States and Canada.** Many fairs and exhibitions in the United States and Canada showed a drop in attendance in 1952, but this by no means indicated a slackening of interest in the annual events. Unfavourable weather, polio in widely scattered areas, unsettled economic conditions and the presidential election were blamed for the drop, which was mainly among smaller fairs. Exhibits of livestock, poultry, agricultural and horticultural products and general farm exhibits were up to normal and there was a noticeable increase in the size and content of commercial exhibits. At the Texas state fair, Dallas, 14 implement and farm machinery manufacturers signed more than 100,000 ft. of exhibit space. Among large exhibits were the International Harvester company, Allis-Chalmers, John Deere Plow company and General Motors truck division. At the Michigan state fair, Detroit, Ford automobile dealers erected a \$150,000 exhibit building. Fair executives showed a trend toward emphasizing industries whose operations were conducted within their state or within the drawing area of their town. An example was the Wisconsin state fair's huge array of exhibits under the title "Wisconsin at Work." A new trend was shown in exhibits of large brokerage firms, which turned to fairs as a fertile field for interesting people in stocks and bonds. At the Florida state fair, Tampa, two large firms had comprehensive exhibits showing how stock, bond and commodity markets operate, and similar exhibits were being planned for other leading fairs in 1953.

While entertainment at fairs is more or less standard, many of the smaller annuals which in the past had preserved mainly acrobatic and thrill acts added revue type shows for the night grandstand offerings, and these proved popular. The more than 2,000 fairs of the country spent in excess of \$10,000,000 for entertainment in 1952. Budgets for the grandstand revues ranged from \$1,500 at small fairs to \$25,000 or more at

large state fairs and provincial exhibitions. There was a marked falling-off in horse racing as an afternoon attraction and a corresponding increase in auto racing and auto thrill shows, which were among the most popular attractions.

The Canadian National exhibition, Toronto, Ont., again led all fairs in attendance, setting a record figure of 2,717,000. The exhibition's fair plant continued to be the finest in North America. Its grandstand, built after World War II, seats 25,000 and cost more than \$5,000,000. Attendances at the western Canada fairs—Edmonton, Calgary, Regina, Saskatoon—were on a par with those of 1951, but most of the eastern Canada exhibitions drew slightly smaller crowds than during the previous year.

In the United States the 16-day Texas state fair came close to its 1951 record, and the Los Angeles county fair, Pomona, Calif., drew a record 1,085,478 attendance in 17 days. These two fairs led all others. The Minnesota state fair, St. Paul, had its lowest attendance since World War II, 819,015, because of a polio epidemic. The California state fair, Sacramento, drew 778,756 in 11 days, a new high; the Michigan state fair, Detroit, attracted 630,240 against 708,000 in 1951; the Indiana state fair, Indianapolis, 650,500 in 10 days; the Iowa state fair, Des Moines, 511,008 compared with 543,461 in 1951; the New York state fair, Syracuse, 417,365; the Kansas Free fair, Topeka, 390,000; the Kentucky state fair, Louisville, 314,948, a drop from 1951 because of polio; the Ohio state fair, Columbus, 168,468.

State fairs continued to increase in size and importance. Plants of the state fairs in Minnesota, Indiana, Illinois, Iowa and several other states each represented an investment of several million dollars. New and better exhibit buildings were being built, and more generous premiums for exhibits were being offered. At the Illinois state fair in 1952 premiums paid amounted to \$193,993, more than half of it for livestock. The fairs were credited with providing a strong incentive for livestock breeders to improve their herds and for encouraging young farmers to raise better farm products. (See also PHOTOGRAPHY.)

(NA. G.)

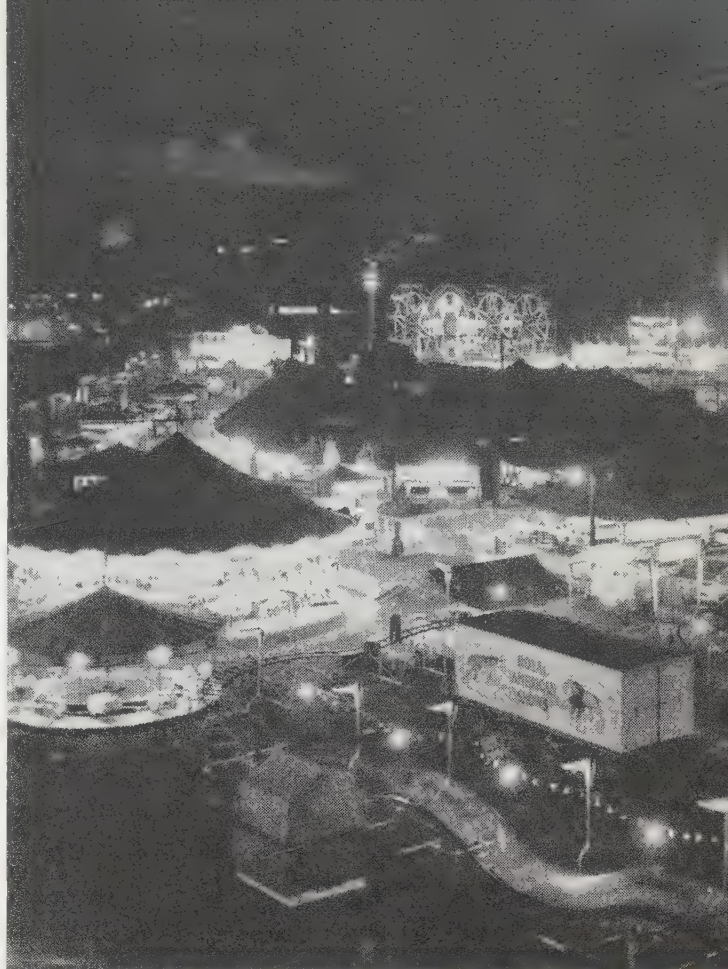
Great Britain.—The 31st British Industries fair (May 5-16, 1952) was held as usual at Olympia, Earls Court, London, and at Castle Bromwich, Birmingham. The fair was visited by Queen Elizabeth and the duke of Edinburgh on May 6. A commonwealth trade day was held at Earls Court on May 14. The attendance of overseas visitors was down by about 25% from 1951 and at the London sections the number of home visitors declined by about 30%. There were 2,472 exhibitors—slightly less than in 1951. The total attendance at Castle Bromwich was 194,891.

The Radio show was again held at Earls Court at the end of the summer season (Aug. 26-Sept. 6). With the extension of television to the north of England, a radio and television exhibition was held at City hall, Manchester (April 23-May 3), the first held in the north of England since World War II. More than 1,025,000 persons visited the *Daily Mail* Ideal Home exhibition at Olympia (March 4-29).

The 37th Motor show was held at Earls Court (Oct. 22-Nov. 1). Many of the cars on show were available for immediate delivery for the first time since World War II. The first Commercial Motor Transport exhibition in two years was held in the same hall (Sept. 26-Oct. 4).

Civil and military aviation was shown at the annual flying display and exhibition of the Society of British Aircraft Constructors at Farnborough (Sept. 2-7). A serious accident on Sept. 6 caused 27 deaths, but despite this about 350,000 persons attended the exhibition—140,000 on the day after the accident.

The fifth London Fashion fortnight was held from June 4 to



CARNIVAL LIGHTS on the midway at the Kansas Free fair for agricultural exhibitors which opened at Topeka in Sept. 1952

June 18. Consisting of wholesale fashion displays covering the whole range of women's wear, this event attracted many overseas buyers to London.

Agricultural Shows.—The widespread outbreaks of foot-and-mouth disease throughout England, Wales and Scotland caused many show societies to cancel their cattle classes. This naturally affected attendances but, at many shows, these were only slightly below the 1951 figures.

The annual show of the Royal Agricultural Society of England was held for the first time in Devon at Newton Abbot (July 1-4). The total attendance was 93,318, about 40,000 fewer than at Cambridge in 1951.

Ashton Park, Preston, was the venue for the Royal Lancashire Agricultural show (Sept. 3-6). There were 4,204 entries, or only 216 fewer than in 1951. The society was considering a permanent showground for future shows. The Great Yorkshire show was held at Harrogate (July 7-9). The only livestock on show were horses. The largest show in the home counties was the Royal Counties at Guildford (June 17-21). The total attendance was 51,693 or 1,000 more than at Southampton in 1951. The Three Counties show went to Worcester (June 10-12), and the Bath and West to Wollaton Park, Nottingham (May 28-31). The total attendance was 73,775 or 16,000 fewer than in 1951 and about the same as in 1950 when the show was last held in the Midlands. The leading agricultural show in Wales, the Royal Welsh, went to Caernarvon (July 23-25); Scotland's premier show, the Royal Highland, was held at Kelso, Roxburghshire (June 17-20); and Ulster's show, the Royal Ulster, was held at Balmoral, Belfast (May 21-24). All these agricultural shows were handicapped by the absence of cattle, sheep and pigs.

Commonwealth.—An exhibition was held in Colombo, Ceylon, to display the work of the Colombo plan. This was the most

spectacular function in Ceylon for many years. Malta's first trade fair was held in October. The total attendance was 48,200 and there were 100 exhibitors.

From June 19 to 21 the Kenya Royal Agricultural show was held in the New Mitchell park, Nairobi. The Van Riebeeck festival fair at Capetown, U. of S.Af., to mark the 300th anniversary of the colonization of South Africa, was opened by E. G. Jansen, governor general, on March 13. The 44th Rhodesian Agricultural and Horticultural show at Salisbury attracted 56,752 people, a new record.

Fair Trade Laws: *see* LAW.

Falk Foundation, Maurice and Laura: *see* SOCIETIES AND ASSOCIATIONS, U.S.

Falkland Islands. British colony and dependencies in the South Atlantic. The colony consists of East and West Falkland and adjacent islands. Dependencies: (1) South Georgia (four whaling stations) with South Orkney and South Sandwich and (2) South Shetland and Graham Land. Area of colony: 4,618 sq.mi. Pop.: (1946 census) 2,239; (1951 est.) 2,300, mainly of British descent and Protestant. Only town, Stanley (cap.; *c.* 1,250). Governor in 1952, Sir Miles Clifford.

History.—Of the two Colonial Development corporation projects in the colony, one, the building of a freezing plant for beef and mutton, continued and was expected to be in production by May 1953; but the other, a sealing project, was abandoned during 1952 because of a fall in the price of oil and a marked falling off in the number of seals coming to the beaches. A £10,000 grant from Colonial Development and Welfare funds was being made to improve local broadcasting from Port Stanley.

The uneasy political situation in the dependencies continued, with Argentine and Chilean bases established on British territory as well as those of the Falkland Islands Dependencies survey. At Hope bay in Graham Land Argentine personnel fired on a British party landing stores, but the Argentine government admitted that it was done in error and there were no repercussions.

(K. G. B.)

Education.—Nine schools; also travelling teachers. Pupils (1951) 340.

Finance and Trade.—Currency: sterling, with local notes. Budget (1952-53 est.): revenue £336,606; expenditure £330,919. Foreign trade (1951): imports £3,312,000; exports £3,723,000. Principal exports: wool, hides and skins.

Industry.—Whaling (1951-52 season): catch 2,630 whales; oil 144,614 bbl.; guano 112,383 bags; total value of products £2,358,657.

Famines: *see* AGRICULTURE.

Farm Co-operatives: *see* CO-OPERATIVES; FARM CREDIT ADMINISTRATION.

Farm Credit Administration. Farmers and farmers' co-operatives in the continental United States and Puerto Rico obtained \$2,400,000,000 in loans in the year ended June 30, 1952, from the banks and associations operating under the supervision of the Farm Credit administration of the U.S. department of agriculture. This may be compared with \$2,200,000,000 for the year ended June 30, 1951.

This co-operative farm credit system operates through 12 district offices and local credit co-operatives. Farmers obtain short-term operating credit from 499 local production credit associations and long-term farm mortgage credit through 1,180 local national farm loan associations. Each farmer-borrower is a member and owns capital stock in his association equal to at least 5% of his loan. Farmers' business co-operatives deal directly with the bank for co-operatives of the district in which

the co-operative is located or, in the case of the large regional co-operatives, with the Central Bank for Cooperatives. Each borrowing co-operative owns stock in the bank for co-operative from which it obtains its loan.

Farmers and farmers' co-operatives at June 30, 1952, owned more capital stock in their co-operative farm credit system than at any previous time. They owned a total of \$180,000,000 compared with \$155,000,000 at June 30, 1951.

Farmer-borrowers owned all the capital stock of the national farm loan associations and, through their associations, all the capital stock of the 12 federal land banks. The capital stock of the 12 federal land banks totalled \$65,000,000 on June 30, 1952, compared with \$61,500,000 the year previous.

Farmer-members of production credit associations owned \$96,600,000 in capital stock of their associations, compared with \$77,000,000 on June 30, 1951. Government capital in these associations declined from \$12,700,000 on June 30, 1951, to \$8,700,000 on June 30, 1952. During the year, the production credit associations increased their membership from 468,468 to 475,546. On June 30, 1952, 243 production credit associations were completely member-owned compared with 179 on June 30, 1951, and 134 on June 30, 1950.

Farmers' co-operatives increased their capital ownership in the 13 banks for co-operatives from \$16,500,000 on June 30, 1951, to \$18,000,000 on June 30, 1952.

Farmers in the year ended June 30, 1952, obtained 41,500 farm mortgage loans amounting to \$237,000,000 through the national farm loan associations and federal land banks. This may be compared with 40,377 loans for \$206,000,000 for the previous year. On June 30, 1952, farmers were using 310,638 land bank loans totalling \$1,000,000,000, the largest amount since July 1945. Funds used to make these loans were largely obtained by the sale of consolidated farm loan bonds to investors. The bonds are not guaranteed in any way by the United States government.

In the year, farmers obtained 281,062 loans totalling \$1,400,000,000 in credit from the 499 production credit associations compared with 286,619 loans and \$1,200,000,000 in the year ended June 30, 1951.

Farmers' marketing, purchasing and business service co-operatives obtained 1,417 loans for \$537,000,000 in operating capital, facility and commodity loans from the 13 banks for co-operatives in the year ended June 30, 1952, compared with 1,607 loans for \$510,000,000 the previous year. The number of loans made by the 13 banks decreased 11.8%, but the amount of loans increased 5.4% over the preceding year. The funds obtained were used directly in purchase of farm production supplies and marketing, processing or distributing foods and fibre products by farmers.

The 12 federal intermediate credit banks, the principal source of loan funds of the production credit associations and of part of the loan funds of the 13 banks for co-operatives, as well as certain types of privately financed credit institutions, made loans and discounts in the year ended June 30, 1952, totalling \$2,000,000,000 compared with \$1,900,000,000 in the year ended June 30, 1951. The consolidated debentures of these banks sold to investors were the source of their loanable funds. The debentures are not guaranteed by the United States government. The banks' total loans and discounts for the year included 82.7% for production credit associations, 5.8% for banks for co-operatives, 10.9% for privately capitalized institutions and 0.6% for farmer co-operatives.

Another important work of the Farm Credit administration is carried on through its co-operative research and service division. As directed by congress in the Cooperative Marketing act of 1926, it conducts research and service activities to help farmers through their co-operatives develop sound merchandising

ising, management, accounting, membership and other programs important to the success of the purchasing and marketing ranches of their business. This division had under way 102 research and service projects under this program during the year ended June 30, 1952.

(I. W. D.)

Farmers Home Administration. The major emphasis of this agency of the U.S. government in 1952 was placed on helping small farmers make full use of their land, labour and capital resources. Many of the farm families who received assistance were young couples, particularly war veterans. They borrowed funds to purchase foundation livestock, tractors, fertilizer and similar operating essentials; to add additional acres to their farms or to improve the land they already owned; to build or repair farm houses; and to build or improve their farmstead water supply systems.

Developments during 1952 included an increase in the average size of farm operating loans, a widespread demand for emergency production loans because of the drought, and a steady increase in farm housing loan activity.

The average size of initial loans needed to meet farm operating expenses rose from \$1,795 in 1951 to \$2,680 in 1952. The demand for larger loans had been increasing for several years as the cost of farm operating expenses rose. Legislation passed by congress in 1951 made it possible to meet the need for larger loans.

The widespread drought of 1952 made it necessary to designate most of the southeastern and New England states as disaster areas. In these areas special disaster loans were made to farmers to buy feed, to re-establish pastures and to take other steps to maintain production.

In the early months of 1952 the increased housing loan activity exhausted the annual fiscal year appropriation for these loans. Additional funds, approximately \$19,000,000, were made available on July 1 by congress.

Through Aug. 1952 loans were made to 69,475 families who had no other source of credit to finance improvements in their operations, buy or improve farms, or continue in production after drought or similar disaster. Veterans received about 53% of the appropriated funds advanced.

The agency's farm and home management supervisors helped the farmers who received the loans to develop systems of farming that would get maximum income from their farms and still maintain the strength of their soil.

Operating loans totalling \$80,546,476 were made to 42,729 families. Approximately 2,417 loans were made for the purchase or improvement of family-type farms. The farm ownership loans amounted to \$20,591,942, of which \$8,136,092 was advanced to private lenders with the guarantee of the government that the loans would be repaid in full.

Housing loans totalling \$16,671,528 were made to 3,123 farm owners for the construction or repair of homes and farm buildings. Water facilities loans amounting to \$3,880,806 were made to 936 individuals and 39 associations in the west. Emergency loans amounting to \$29,184,574 were advanced from a revolving fund to 20,270 farmers who had production losses from drought and similar disasters.

Records of families who completed paying their loans showed substantial increases in their production and their equity in farm equipment, livestock, land and other means of production. For example, the 34,595 borrowers who repaid their operating loans in full and continued to farm increased their farm production from an average of \$2,021 to \$3,356 during the three and one-half years they operated with the aid of supervised credit. Their average net worth rose from \$2,667 to \$5,029.

Total principal and interest repayments during the first six months of 1952 were \$56,803,583, including \$2,068,650 collected on behalf of private lenders under the insured mortgage program.

In June congress passed legislation extending the farm housing program an additional year, through June 30, 1953. Basic legislation authorizing the agency's other loan services had no termination date.

(D. B. L.)

Farm Income: see AGRICULTURE.

Farm Machinery: see AGRICULTURE.

Farm Population: see CENSUS DATA, U.S.

Farouk Fuad, PRINCE (1920—), the only son and eldest child of King Fuad I of Egypt and the great-great-grandson of Mohammed Ali, founder of the dynasty, was born in Cairo, Egy., on Feb. 11. In 1935, as Prince Said, he was sent to England to complete his studies. Upon his father's death on April 28, 1936, he returned to Egypt, where a regency council acted for him until his coming of age on July 29, 1937, when he was invested as king. On Jan. 20, 1938, he married Farida, daughter of Zulfikar Pasha; three daughters were born and on Nov. 17, 1948, the marriage was dissolved. On May 6, 1951, he was married to Narriman Sadek, the daughter of a government official, and a crown prince, Ahmed Fuad, was born on Jan. 16, 1952. At the end of January there were riots in Cairo and Farouk dismissed his prime minister, Mustafa el Nahas Pasha, for failing to maintain order. The king's popularity was waning rapidly, particularly in army circles, and on July 23 occurred a military coup d'etat led by Mohammed Naguib, which resulted in Farouk's abdication three days later in favour of his son, who became Fuad II. King Farouk, his wife, son and three daughters left Egypt the same day. On July 29 Farouk asked Pres. Luigi Einaudi of Italy to allow him to stay in Italy for an indefinite period as a private citizen. President Einaudi consented and Farouk and his family moved to Capri for the first part of their exile.

Fascism. Fascism continued in 1952 in power in Spain and in Argentina and seemed to gain in influence in some Latin-American countries. These semifascist regimes were backed, like the regime of Juan D. Perón in Argentina, by the armed forces, while they were at the same time supported by the masses, to whom they appealed with the promise of social betterment and with strong invectives against United States "plutocracy." Peronism aimed at organizing a confederation of Latin-American states for protection against United States "aggressive imperialism." In Asunción, Parag., a Committee of United Latin American Trade Unions was formed for "joint actions against capitalist imperialism." There Jose G. Espejo, secretary-general of Argentina's all-labour confederation, declared that his country was desirous of winning liberty for "all the humble who have suffered so long under Roosevelt's imperialism." He asked the conference to pay homage to Puerto Rico "because it has not gained its independence yet." Peronism was eager to influence not only Argentina's small neighbours like Paraguay and Bolivia, but also Chile and Brazil, and to a certain extent it was successful.

On May 1, 1952, the holy day of labour, Perón turned over the expropriated *La Prensa*, formerly the greatest liberal and independent newspaper in Latin America, to the Argentine General Confederation of Labour, which was the main stronghold of the Peronista regime.

Neofascist forces in Germany showed no appreciable strength in 1952, because they were organized in small splinter groups without any strong or united leadership. The largest of these

groups, the Sozialistische Reichspartei, which boasted of 40,000 members and received 370,000 votes at the May 6, 1951, election in the state of Lower Saxony, was torn by internal conflict which came into the open in Aug. 1952. On Sept. 12 it announced its dissolution, and nine officials of the party were arrested for organizing a fascist congress under the guise of a "national rally movement." On the other hand, nazi sentiment was widespread among parties which declared themselves opposed to naziism but which repeated many of the nationalist slogans of naziism and tried to win the votes and adherence of the members of the former nazi party and of the nazi elite.

A definite increase of fascist forces was noticed in 1952 in Italy, where persons like the former Marshal Rodolfo Graziani adhered to it. The Italian Social Movement, as the neofascists called themselves, showed very appreciable gains in the municipal elections at the end of May 1952. In coalition with the monarchists they won control of many important cities in southern Italy, especially of the two strategically important ports of Naples and Bari. Influenced by these results, the minister of the interior, Mario Scelba, proposed a law to the Italian chamber which would authorize the government to disband neofascist parties. This was to be done not in a repressive but in a preventive spirit, and not with the intention of building up an antifascist front but of strengthening democracy.

(H. Ko.)

Fashion and Dress: see WOMEN'S FASHIONS.

FBI: see FEDERAL BUREAU OF INVESTIGATION.

Fechteler, William Morrow (1896-). U.S. chief of naval operations, was born on March 6 in San Rafael, Calif., and was graduated from the U.S. Naval academy at Annapolis, Md., in 1916. He served aboard the flagship "Pennsylvania" of the U.S. Atlantic fleet during World War I. He was operations officer of the fleet destroyer command at the outbreak of World War II, and early in 1942 was named assistant director of the bureau of naval personnel. During the campaigns in the Pacific, he commanded the battleship "Indiana," and later commanded an amphibious group, a carrier and a task force. He was named assistant chief of naval personnel in 1945 and deputy chief of naval operations for personnel in 1947; on Feb. 1, 1950, as a four-star admiral, he became commander in chief of the Atlantic command and fleet. He served as chairman on the North Atlantic Ocean Regional Planning group, largest in the North Atlantic Treaty organization. In 1951 he was prominently mentioned for the post of NATO supreme Allied commander in the Atlantic, but when Adm. Forrest P. Sherman died, Admiral Fechteler was named to succeed him as U.S. chief of naval operations. He assumed the office on Aug. 7, 1951.

In the summer of 1952 Fechteler made an extensive tour of the far east. After visiting Formosa he declared his belief that the Chinese nationalists were fully capable of defending the island against an invasion from the mainland. He also predicted that the Chinese Communists would sign a truce in Korea.

Federal Bureau of Investigation. As the investigative arm of the United States department of justice, the Federal Bureau of Investigation has jurisdiction over more than 130 violations of federal law. Established in 1908 as a fact-finding agency, the FBI does not evaluate the results of its investigations or make prosecutive recommendations.

The two primary areas of FBI activity are general investigations and security operations. Within the latter field, it has jurisdiction over espionage, sabotage and subversive activities on a nation-wide scale.

During the 1952 fiscal year, much of the FBI's investigative time was directed toward the Communist party in the U.S. which attempted to conceal its activities in an underground work. In addition, the FBI continued to discharge its responsibilities for the national security in the fields of espionage and sabotage.

A further service of the FBI within the field of national security is the co-ordination of security information for dissemination to other government agencies which are authorized to receive it.

In the area of general investigative activity, the FBI located 11,100 fugitives during the 1952 fiscal year, a marked increase over the 6,370 fugitives it located in 1951. In 97.2% of the cases brought to trial during this period, verdicts of guilty were returned. There were 9,036 convictions compared with 8,000 in the preceding fiscal year. Sentences imposed totalled 22 years, 7 months and 23 days. Six persons received life imprisonment.

During the 12-month period ending June 30, 1952, 12 automobiles were recovered in cases investigated by the FBI. Fines imposed and the value of property recovered totalled \$918,535, an increase of more than \$22,000,000 over 1951. Negotiation act claims adjusted in favour of the government which were investigated by the FBI, totalled \$55,089,810.

In addition to its investigative activities, the FBI provides several co-operative services for law-enforcement agencies. Among these is the identification division, which provides a national repository for identification data based on fingerprints. At the close of the 1952 fiscal year, there were 124,417 sets of fingerprints on file in the FBI identification division. An average of 19,993 sets of fingerprints were received each working day from the 12,575 contributors to the identification division.

Services of the FBI laboratory are available to police and other agencies of the federal government free of charge. These services include the examination of evidence and the court testimony of laboratory technicians as expert witnesses. In the 1952 fiscal year the FBI laboratory completed 109,733 examinations, an increase of 4.6% over the preceding 12-month period.

Upon request, the FBI co-operates with local law-enforcement agencies in special training programs. These include the FBI National academy, which is conducted in Washington, D.C., and on the U.S. marine corps base at Quantico, Va., and police training schools which are conducted on a departmental basis throughout the nation. Represented among the 2,528 graduates of the FBI National academy as of July 31, 1952, were members of police agencies in all states and territories, as well as several foreign countries.

An additional FBI service to law-enforcement agencies is the publication of the *FBI Law Enforcement Bulletin* and the *Uniform Crime Reports*. Published monthly, the *FBI Law Enforcement Bulletin* provides a medium for exchange of ideas between law-enforcement agencies. The *Uniform Crime Reports Bulletin* is a statistical analysis of local crime on an annual and semi-annual basis.

The 52 field offices of the FBI are located in major cities throughout the United States and in Hawaii, Puerto Rico, Alaska. (See also CRIME; JUVENILE DELINQUENCY; POLICE; SECRET SERVICE, U.S.)

(J. E. H.)

Federal Communications Commission.

Resumption of the construction of new television stations on a greatly expanded and technically improved basis, following lifting of the four-year ban by the Federal Communications commission, highlighted the broadcasting field in 1952.

The commission's final decision, issued in April, authorized the use of 70 ultra-high-frequency channels to supplement the very-high-frequency channels previously employed, adopted new technical standards for the operation of stations to minimize interference, and set up procedures for the ultimate disposition of applications for station construction permits.

Prior to the lifting of the freeze on new construction, there were 108 stations operating in 63 cities. The new table of television frequency assignments issued by the commission made possible more than 2,000 stations in 1,300 communities throughout the United States, its territories and possessions. The plan was designed to make stations and service available in the smaller towns and the rural areas as well as the metropolitan centres.

An important part of the new system was the reservation of 2 channels in a like number of cities for use by educational institutions. At least one such assignment was made to every state in the United States and several states were assigned sufficient channels to permit the establishment of a state-wide educational network. The reservation of these 242 assignments was based upon representations made to the commission by leading educators as to the potential of television for education.

The commission resumed processing of applications for new television stations in July. By Oct. 15 the commission had received 750 applications and had issued construction permits for 12 new very-high-frequency stations and 56 new ultra-high-frequency stations in 50 communities. These included two very-high-frequency grants and seven ultra-high-frequency grants to educational institutions. The first ultra-high-frequency station began operation in Portland, Ore., in September.

The nation's television network relay system was expanded in 1952 to include all but one (Albuquerque, N.M.) of the 111 stations in operation as of Oct. 15. Further extensions were planned to accommodate new stations as they went on the air. The National Production authority lifted its ban on colour television equipment, except the production of home-type sets, in June. By the terms of this order the manufacture of colour equipment for theatre, industrial and other nonhome uses was permitted. Under certain specified conditions permission was to be given for home use but the authority pointed out that few manufacturers could qualify to produce home-type sets under requirements because of shortages in qualified personnel and certain critical materials.

The National Television System committee, composed of various industry experts, continued its study of the possibilities of a compatible colour television system.

Financial tabulations completed by the commission in 1952 showed that television broadcasters, who lost \$25,000,000 in 1949 and \$9,000,000 in 1950, earned \$41,000,000 in 1951, before federal income taxes. There were 18,500,000 television receiving sets in use.

A hearing was scheduled for the latter part of the year on a petition to set aside channels for theatre television. A petition for a hearing on subscriber television was pending before the commission.

About 2,350 standard (AM) radio stations were in operation. Use of radio in the telephone and telegraph services continued to grow during the year. Figures compiled by the commission showed that the public outlay for interstate telephone and telegraph services in 1951 reached a record of \$4,000,000,000. It was necessary to increase rates for certain classes of telephone and telegraph services during the year.

The safety and special radio services continued their rapid expansion during the year, the number of stations reaching 15,000. Establishment of the Radio Amateur Civil Emergency Service provided for participation by radio amateurs in civil

defense communications in event of a national emergency. (See also RADIO; TELEGRAPHY; TELEPHONE; TELEVISION.)

(P. A. W.)

Federal Deposit Insurance Corporation.

In the fiscal year July 1, 1951, to June 30, 1952, three insured banks with total deposits of \$5,812,180 required the assistance of the Federal Deposit Insurance corporation. More than \$3,000,000 was distributed by the corporation to facilitate mergers of these banks with solvent insured banks. Depositors in the distressed banks were thereby fully protected against loss.

Since its inception the Federal Deposit Insurance corporation had aided 419 banks with deposits totalling more than \$539,000,000. Depositors had lost less than \$2,000,000 of this amount. Liquidation of the assets of these banks had been completed in all but six cases at the end of fiscal 1952.

As of Sept. 19, 1951, the Federal Deposit Insurance corporation called for special reports from all insured banks for the purpose of estimating its contingent liability in insuring bank deposits. The banks reported 112,000,000 deposit accounts, of which 110,000,000 or 98.5% had balances of \$10,000 or less and were therefore considered to be fully protected by deposit insurance. On the basis of the survey it was estimated that insured deposits totalled \$96,400,000,000 out of a total of \$176,700,000,000 of deposits held by 13,655 insured banks on June 30, 1952. On that date the corporation's surplus, or deposit insurance fund, totalled \$1,322,485,000.

The board of directors of the Federal Deposit Insurance corporation was composed of Maple T. Harl, chairman, Preston Delano, comptroller of the currency, vice-chairman, and H. E. Cook.

(M. T. H.)

Federal Housing Administration: see HOUSING.

Federal Income Tax: see TAXATION.

Federal Land Banks: see FARM CREDIT ADMINISTRATION.

Federal Power Commission. In the first six months of 1952 the Federal Power commission authorized 1,915 mi. of natural gas pipe line facilities costing an estimated \$235,420,973. They were designed to add more than 1,250,000,000 cu.ft. to the daily delivery capacity of the nation's transmission systems, and would benefit 101 cities of 50,000 population or more in 25 states and the District of Columbia, as well as numerous smaller communities. During the fiscal year ending June 30, 1952, the commission authorized construction of 3,378 mi. of pipe line and compressor units aggregating 539,510 h.p., costing \$321,919,895. Since Feb. 7, 1942, when the existing certificate provisions of the Natural Gas act became effective, the FPC had authorized approximately 45,800 mi. of pipe lines and 3,300,000 h.p. compressor units at an estimated cost of nearly \$3,200,000,000, designed to add more than 17,000,000,000 cu.ft. of daily delivery capacity to the nation's gas pipe line systems.

Wholesale natural gas rate increase applications totalling approximately \$140,312,000 annually, filed by 25 companies, were acted upon, and \$19,200,000 were filed in June, too late for action, making a total of \$159,512,000 filed during the fiscal year. These represented a sixfold increase over the \$22,300,000 filed in the previous year, and were more than 200 times greater than the \$645,000 in increases filed in 1949, Chairman Thomas C. Buchanan announced. Of the \$140,312,000 acted upon in fiscal 1952, \$139,032,000 was suspended, \$1,280,000 accepted. The commission disallowed \$22,117,000 of the suspended filings, allowed \$15,295,000 to become effective, and permitted companies to withdraw \$7,103,000. Of the remaining \$94,517,-

000, \$36,001,000 was in effect under bond awaiting the commission's determination of the amounts to be allowed, and \$58,516,000 was still under suspension. Including the carry-overs, there was still a total backlog of nearly \$104,000,000. In addition, rate increases totalling \$72,852,000 were either suspended after June 30 or were awaiting commission action.

During the 12-month period ending June 30, 1952, the commission issued licences for hydroelectric projects having a total installed generating capacity of 1,410,900 kw., representing an investment of \$363,672,000. A record 125 applications were filed and 149 cases were completed. In the last 11 years the commission had issued licences for projects having a total installation of 3,794,000 kw. representing an estimated cost of \$874,551,000.

As of June 30, 1952, there were 673 FPC licences in effect involving a total installed capacity of 5,750,000 kw. and a claimed cost of \$1,419,000,000.

Combined utility and industrial production of electric energy passed the 450,000,000,000-kw.hr. peak for the first time in the 12-month period ending Aug. 31, reaching 450,573,305,000 kw.hr., 6.9% above the previous year. Electric utility production totalled 388,490,903,000 kw.hr., an increase of 8.1%. As of Aug. 31, total installed capacity of utility plants was 78,307,864 kw. and industrial generating capacity reached 14,685,586 kw., making a combined total of 92,993,450 kw. In the first six months of 1952, largely because of the steel strike, only 2,011,015 kw. of new capacity were added, of which 323,510 kw. were industrial and 1,687,505 kw. were utility. But during the fiscal year public utilities added 5,165,905 kw. and industrial plants 756,744 kw., a total of 5,922,649 kw.

Use of gas by electric utility plants in August reached a new high of 104,965,791,000 cu.ft., 18.7% above Aug. 1951 consumption. Coal stocks on hand Sept. 1 totalled 42,107,618 tons, 12.5% more than a year earlier, sufficient to last 152 days. Coal consumption was 8,569,173 tons, 4.4% less than in the same month a year earlier.

River basin and water power development studies made included the St. John, Kennebec, Androscoggin, Raquette and other rivers in the New England-New York area; the Alabama-Coosa, Tombigbee and Santee in the southeast; the Ohio river, including the Allegheny and Monongahela; tributaries of the upper Mississippi; the Missouri and tributaries; the Arkansas, White, Red and Guadalupe rivers in the southwest; the Columbia river and tributaries in the northwest; the Sacramento and tributaries in California; and the upper Colorado. The commission's field staff co-operated with the corps of engineers in 52 investigations, with the bureau of reclamation in 56 basin surveys or project investigations and with the department of the interior in flood control surveys in various watersheds.

Federal Power commission studies of water power potentials indicated that, including projects under construction or authorized, the total undeveloped water power of the United States was approximately 87,000,000 kw., which, if developed, would be capable of generating about 385,000,000,000 kw.hr. annually. Of this undeveloped power, 55%, or about 48,000,000 kw., was west of the continental divide, with 40%, or about 35,000,000 kw., in the north Pacific area, of which about 31,000,000 kw. were in the Columbia river drainage system. Of the remainder, California had about 7,500,000 kw., or 8.6%, and the Colorado river basin 5,300,000 kw., or 6.1%. The Missouri river basin had about 8,700,000 kw. of undeveloped water power, or 10% of the United States total. The largest concentration of undeveloped power east of the Mississippi river was in the north Atlantic drainage area, extending from the St. Croix river in Maine to the Rappahannock river in Virginia, with about 7,400,000 kw., or about 8.6% of the national total.

(See also ELECTRICAL INDUSTRIES; GAS, NATURAL AND MANUFACTURED.) (J. W. JE.)

Federal Reserve System. During the year 1952 the federal reserve system made further progress toward a more flexible open market policy. Inflationary pressures lessened, most selective credit controls were suspended. After extensive questionnaires, three weeks of hearings and further study, the congressional subcommittee on general credit control and debt management, with Representative Wright Patman of Texas as chairman, made its final report concerning the framework of the nation's monetary management.

Late in March the president requested the suspension of state, municipal and public-body financing by the regional voluntary credit restraint committees. In May the screening of applications for all financing was ended, and the voluntary credit restraint program was suspended. This action was taken by the concurrence of the board of governors in the recommendation to this effect by the national voluntary credit restraint committee. Finally, the Defense Production act amendments of 1952 ended statutory authority for any voluntary program for the control of credit.

The board of governors of the federal reserve system, effective March 24, amended Regulation W, relating to consumer credit, by removing the prescribed minimum down payment and maximum loan value in connection with home repairs. The board also, effective April 8, amended Regulation W so as to exempt all listed articles costing less than \$100 from the prescribed minimum down payment and maximum loan value. The board of governors recommended to congress that authority for the regulation of consumer credit be continued after June 30, 1952. Strong opposition to consumer credit control developed, however, and the board of governors suspended Regulation W effective May 7.

Somewhat later, in amending and extending the Defense Production act, congress repealed the authority for the control of consumer credit.

During the year Regulation X relating to real estate credit was first eased and later suspended. With the concurrence of the Housing and Home Finance agency, the board of governors effective June 11, amended the regulation to permit more liberal credit terms for conventionally financed one-family and four-family housing built after Aug. 3, 1950, and to reverse downward the minimum down-payment requirements for multi-unit housing. This action was accompanied by similar changes in the related regulations of the Federal Housing administration and the Veterans administration covering FHA-insured mortgages and VA-guaranteed loans, both of which applied to old as well as new housing.

The Defense Production act amendments of 1952 provided for the continuance of real estate credit regulations until June 30, 1953, but made such control subject to new limitations. These provided that no down payment requirement in excess of 5% of the transaction price be imposed if after any three consecutive months the annual rate of construction starts seasonally adjusted falls to a level below 1,200,000 starts per year. In accordance with this mandatory provision, after certification by the secretary of labour that new nonfarm housing starts were less than a seasonally adjusted annual rate of 1,200,000 units in each of the months of June, July and August 1952, the board of governors suspended Regulation X, effective Sept. 1, including credit terms on both residential and nonresidential properties. Under instructions from the administrator of the Housing and Home Finance agency, relaxations on government-aided housing credit (covering FHA-insured mortgages, V

guaranteed home loans and farm housing loans) were also made, effective Sept. 15.

After four years of hearings, in a proceeding under the Clayton act, the board of governors ordered the Transamerica corporation to divest itself of all capital stock in a large number of banks. Governors James K. Vardaman, Jr., and Oliver S. Powell dissented from the majority opinion, and governors Abbot L. Mills, Jr., and J. L. Robertson took no part in the board's consideration of the matter. The proceeding attracted wide attention in banking circles but in effect left unsettled the status of federal reserve policy toward bank-holding companies. (See also BANKING; CONSUMER CREDIT.) (J. K. L.)

Federal Security Agency. The major units of the Federal Security agency are the public health service, Social Security administration, office of education, Food and Drug administration, and the office of vocational rehabilitation. Through them, with the direction and coordination of the administrator and his staff offices, the agency carries out its programs.

During the year 1952, the public health service went steadily ahead on various fronts. Its National Institutes of Health were conducting research into all phases of medical problems.

In heart disease, which is responsible for more than half the nation's deaths, one major development was in gaining new understanding of hardening of the arteries. Clinical tests demonstrated that the new drug primaquine is a simple, inexpensive and almost sure cure for relapsing malaria. The quest for new knowledge concerning cancer and the maximum application of what was already known for control of the disease were pursued vigorously. In the area of mental health, special attention was given to drug addiction, alcoholism, mental deficiency, emotional problems of the aging and rehabilitation of the mentally ill.

By June 1952 the new Clinical centre, part of the National Institutes of Health, was 85% constructed. When completed, the centre would provide for 500 research patients, the first ones scheduled to arrive in April 1953.

Under the Hospital Survey and Construction act, the 1,000th hospital project to be completed was formally opened on Oct. 1. The federal government had put \$500,000,000 into these hospital projects, and the states and communities had invested almost twice as much.

The first checks to show the increased payments to beneficiaries of old-age and survivors insurance, made possible under the 1952 amendments to the social security law, were mailed in October. The 4,725,000 persons then receiving such checks received \$22,000,000 more in monthly payments. Individual monthly payments were raised by \$5 or 12½%, whichever was greater, for most retired workers, with proportionate increases for dependents and survivors.

The new amendments also increased the federal share of the cost of public assistance. While fewer persons were being aided in June 1952 than in June 1951, total expenditures were higher because many states took advantage of smaller case loads to raise payments to help offset increased living costs. By June 1952, 38 states had programs of aid to the totally disabled and were making payments to 145,344 persons.

The benefits to children of the increased federal child welfare services made available under the 1950 amendments to the Social Security act became apparent during 1952.

The bureau of federal credit unions issued 581 new charters during the fiscal year ended June 30, 1952, for the establishment of new credit unions and made 3,999 examinations of existing unions.

The 82nd congress appropriated \$195,000,000 for a program



DENTAL EXAMINER inspecting children's teeth for the U.S. public health service in 1952. Data were to be used in further research on benefits resulting from the fluoridation of the water supply

of school construction projects. The office of education reserves funds to provide grants to local school districts for critically needed school buildings in "federally affected" areas, such as communities adjacent to military reservations or defense "boom towns." The total of federal funds reserved from July 15 through Sept. 15, 1952, was \$117,000,000.

In September, 312 teachers, supervisors and school administrators from 49 different countries throughout the world arrived in the United States to spend six months studying and observing U.S. educational theory and practice. The office of education co-operated with the department of state in administering this teacher-training program.

During the year, the Food and Drug administration removed from consumer channels quantities of filthy and decomposed foods. During the fiscal year ended June 30, 1952, the Food and Drug administration approved 304 applications for the manufacture of drugs. These included such significant products as radioactive drugs, blood plasma extenders and antimalarials; new therapy for tuberculosis, acute leukemia in children, alcoholism, cardiac oedema and epilepsy; and an antagonist of certain narcotics.

The federal-state program for vocational rehabilitation during the fiscal year rehabilitated nearly 64,000 disabled persons into productive and useful lives. Of these persons 12% were taken from public welfare rolls and restored to financial independence.

A three-day nation-wide joint conference of state commissions on aging and federal agencies was held early in September in Washington, D.C. The conference was called at the suggestion of several state commission chairmen who asked the Federal Security agency to undertake its organization. The agency had given increasing attention to the problems of aging. In the short period of its existence, the agency committee on aging and geriatrics had stimulated the rehabilitation and placement of older handicapped workers and encouraged research grants in several aspects of aging, such as income, housing, public service and recreation.

All parts of the Federal Security agency were engaged in one way or another in defense activities during the year. Agency-wide services were rendered the Federal Civil Defense administration. The agency represents the interests of the civilian population in obtaining critical materials, equipment and supplies for the nation's education, health and welfare. This responsibility is exercised by presenting to the Defense Production administration estimates of quantities and types of critical materials needed and by issuing construction permits and allocations of these materials for school and college buildings, libraries, hospitals and related health facilities. (See also DRUG ADMINISTRATION, U.S.; EDUCATION; EPIDEMICS AND PUBLIC HEALTH SERVICES; SOCIAL SECURITY; VOCATIONAL REHABILITATION, OFFICE OF.) (O. R. E.)

Federal Trade Commission. During the fiscal year 1951-52, the Federal Trade commission issued 104 formal complaints and 136 orders to cease and desist from violations of law. It approved 131 stipulations to discontinue unlawful practices and promulgated new trade practice rules for 11 industries. Members of its staff, working from special divisional offices set up in five large cities as well as from its main and branch offices, made inspections of the labelling practices of 12,846 establishments of wool products manufacturers and dealers throughout the United States, and beginning Aug. 9, 1952, made similar inspections of fur labelling. A total of 636,096 advertisements were examined, of which 24,416 were set aside as possibly false, distributed as follows: 287,093 in periodicals, including newspapers, magazines and trade journals, of which 13,331 were set aside; 36,627 pages of mail order catalogues, with 233 set aside; 84,325 television continuities, with 3,648 set aside; and 228,051 commercial radio broadcasts, with 7,204 set aside. One new export trade association was formed to sell anthracite coal abroad.

For almost 40 years the commission (and its predecessor, the bureau of corporations) had been collecting and establishing a vast fund of information concerning the nation's important industries. The commission had collected, and made available to other government agencies on request, information with respect to industrial operations, covering costs of production, costs of distribution, marketing methods, and profits of a large number of industries and of the leading corporations in those industries.

At the request of the Office of Price Stabilization, and with funds supplied by it, the quarterly financial reports program, published in co-operation with the Securities and Exchange commission and previously concerned with manufacturers, was temporarily expanded in 1951 and early 1952 to include information about corporations engaged in wholesale and retail trade. Under the Defense Production act and pursuant to presidential directives, the commission continued to carry on certain activities intended to minimize factors which might tend to eliminate competition or otherwise promote undue concentration of economic power incident to defense mobilization.

During 1952 the commission placed increased emphasis on procedures to encourage more general observance of the laws it administers. Its program called for simultaneous industry-wide action wherever practicable, and expansion of the corrective and co-operative phases of its work as exemplified through its trade practice and stipulation procedures.

The commission administers, in whole or part, six different statutes, including the Federal Trade Commission act, designed to prevent unfair commercial practices such as restraint of trade, concerted price fixing and false advertising; the Clayton Antitrust act, making unlawful monopolistic price dis-

crimination and other specific practices tending to monopolize the Export Trade act, excepting foreign trade associations from operation of the antitrust acts; the Wool Products Labeling act requiring disclosure of the fibre content and source of wool products; the similar Fur Products Labeling act of Aug. 1951; and the Lanham Trade-Mark act of 1946 permitting the commission to petition for cancellation of registered trademarks in violation of law. Its members in 1952 were James I. Mead, chairman, New York; Lowell B. Mason, Illinois; John Carson, Michigan; Stephen J. Spingarn, New York; and Herbert A. Carretta, Virginia. (J. M. Md.)

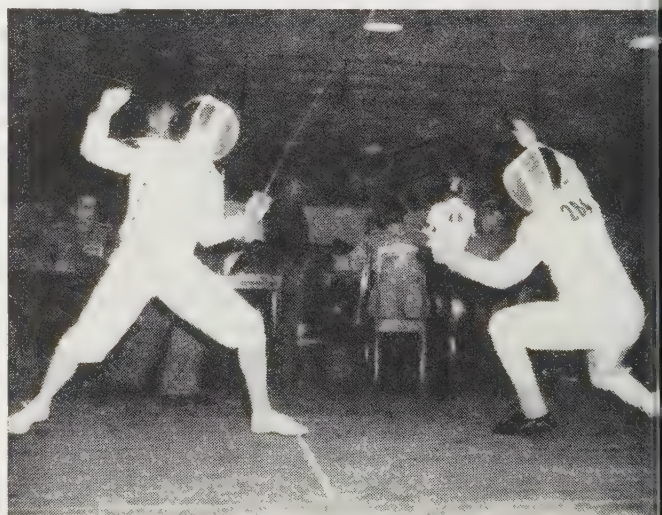
Federated Malay States: see MALAYA, FEDERATION OF SINGAPORE.

Fencing. The world championship tournament for women's fencing teams was held in Copenhagen, Den., July 12-14, 1952. The United States team consisted of Janice L. York, Polly Craus, Mrs. Maxine Mitchell, Bessie Aboula and Paula Sweeney. The event was won by Italy, Hungary was second, France third, Denmark fourth, the United States fifth and Great Britain sixth.

The United States national championships were held in New York city, June 13-20. The foil individual was won by Daniel Bukantz of the Fencers club of New York. The épée championship final ended in a five-way tie for first place, and after a fence-off Abelardo Menendez of Cuba was still tied with Paul Makler of the Philadelphia Fencers club. In the second fence-off Menendez won the championship. The sabre championship was won for the third straight time by Tibor Nyilas of the Salle Santelli club, New York, N.Y. The women's championship was won by Mrs. Maxine Mitchell of Alhambra, Calif.

The foil, sabre and three-weapon team championships were all won by teams from the Salle Santelli. The women's team event was won by a composite team of southern California, including Barbara Baxter, Mrs. Maxine Mitchell and Janice L. York.

The Pacific coast championships were held in Los Angeles, Calif., May 23-25. Edward Carfagno of the Los Angeles Athletic club won the foil and sabre championships and was second in the épée. Carl Shurz of the Faulkner School of Fencing, Los Angeles, Calif., won the épée title and was second in foil. Mrs. Maxine Mitchell won the women's championship. The Los Angeles Athletic club won all three of the men's team titles and the Faulkner School of Fencing won the women's team event.



DANIEL BUKANTZ of the U.S. team (right) and Norman Casmir of Germany during the second round of the Olympic foil team matches held at Helsinki, in July 1952

The midwest championships were held in Detroit, Mich., May 24-25. James Campoli of the Grosse Pointe Sword club, Grosse Pointe, Mich., won the foil championship, Albert Wolff of Louisville, Ky., won the épée and John Westley of the Illinois University club, Urbana, Ill., won the sabre. Paula Sweeney of the Salle de Tuscan (Michigan) successfully defended her women's championship.

The Intercollegiate Fencing association championships were held at Columbia university, New York city, March 14 and 15. The foil team was won by City College of New York and the épée team by New York university, New York city. New York university and Columbia shared the sabre team title. The foil individual title was won by Alfred Rubin of Columbia, Herman Wallner of New York university won the individual épée championship and Frank Zimolzak of the U.S. Naval academy, Annapolis, Md., won the sabre championship.

The National Collegiate Athletic association fencing championships were held at Yale university. Harold Goldsmith of the City College of New York won the individual foil title, Herman Wallner of New York university won the épée title and Frank Zimolzak of the U.S. Naval academy won the sabre title. Columbia won the three-weapon team championship.

The women's intercollegiate fencing championships were held at Hunter college, New York city, April 19. Hunter college won the team event, and Anne Drungis, a Hunter college girl, won the individual title. (For the winners of the fencing events in the 1952 Olympic games, see OLYMPIC GAMES.) (W. A. Dw.)

Ferguson, Homer (1889-), U.S. senator, was born at Harrison City, Pa., on Feb. 25. He studied at the University of Pittsburgh, took his law degree from the University of Michigan, Ann Arbor, in 1913 and practised law until 1929, when he became circuit judge for Wayne county, Michigan. As circuit judge and as a one-man grand jury, he received national attention for his investigation of crime and graft in Wayne county. He was elected Republican senator from Michigan in 1942 for the term 1943-49 and was re-elected in 1948 for the term expiring in 1955. In the senate he soon became known as one of the most vigorous opponents of the New Deal and the Fair Deal.

On Jan. 18, 1951, he was appointed to the senate internal security (McCarran) subcommittee and in this position frequently attacked the state department and Secretary of State Dean Acheson. He voted against sending additional U.S. troops to Europe and approved the cease-fire parleys in Korea with the proviso that there should be no appeasement of the Chinese Communists. A consistent foe of government spending, Ferguson on Sept. 18, 1951, was one of the small group of nine senators that voted to uphold Pres. Harry S. Truman's veto of a bill granting pensions to veterans for disabilities not connected with military service.

On April 16, 1952, Ferguson proposed an amendment to an appropriations bill which would forbid the president to use any of the funds to implement his seizure of the U.S. steel industry.

Fertilizers. Increased production and use of fertilizers containing the three primary plant foods, nitrogen, available phosphoric acid and available potash, had by 1952 become one of the most important international problems facing the world. Taking into account climate and rainfall, nearly all of the good tillable agricultural acres of the world were already growing crops. Population was increasing at an unprecedented rate in many countries. Unless presently cultivated acres could be made to produce greatly increased yields, there would not be enough food to go around and famine and starva-

tion would inevitably result.

The Materials Policy commission appointed by the president of the United States stated in a report in June, "Fertilizer, applied scientifically and used with other fruitful farming practices, is a cornerstone of the welfare of the Nation. It is the one single method above all others that will permit our farmers to meet our bigger future needs. Without more of it, the job cannot be done."

In 1951 the Food and Agriculture organization of the United Nations made a world-wide survey (exclusive of the U.S.S.R.) of the production and consumption of fertilizers and estimated that the total production of the three primary plant foods for the fiscal year ended June 30, 1952, would be 13,997,000 metric tons, only .7% more than had been produced in the previous year, 1950-51. It was believed that actual world production in 1951-52 slightly exceeded the F.A.O. estimate.

In the United States, one ton of commercial fertilizer containing about 22.5% in total of the three primary plant foods, if properly used in connection with other good farming practices, will produce on the average 125 bu. of corn, 85 bu. of wheat, 185 bu. of potatoes, 2 bales of cotton, 8,000 lb. of milk or 1,000 lb. of beef.

A 100-bu. crop of corn removes about 140 lb. of plant food from the acre of soil on which it grows; a 40-bu. crop of wheat removes 80 lb. of plant food; a 500-bu. crop of potatoes removes 340 lb.; and a 1½-bale crop of cotton removes 105 lb.

The soil is best looked on as a bank account into which nature placed substantial but varying amounts of the various essential plant foods to the credit of the farmers. Each crop harvested and removed from the soil is but a check drawn upon the soil bank balance of plant foods. Unless deposits are made into this soil bank account in the form of crop residues, manures and fertilizers, the account will eventually be overdrawn, the crop returns will be gradually reduced and bankruptcy (worn-out, unproductive soil) will result.

Food production is not keeping pace with population increase. In the United States alone it was estimated that by 1975 there would be 40,000,000 more people to feed than there were in 1950. The United States department of agriculture asked the fertilizer industry to supply by the year 1955 70% more nitrogen, 55% more phosphoric acid and 51% more potash to the farmers of the country than were used in the year 1951. In that year—1951—a total of 1,285,000 tons of nitrogen, 2,235,000 tons of available phosphoric acid and 1,445,000 tons of potash were used.

The goals set for the department for 1955 were 2,185,000 tons of nitrogen, 3,485,000 tons of available phosphoric acid and 2,185,000 tons of potash. Late in 1952 it appeared that the many new nitrogen-fixation plants which the National Production authority had authorized to be built would increase the nation's nitrogen production capacity sufficiently so that this goal could be met.

Certificates of necessity were issued by the NPA in 1952 up to Sept. 1 to 25 companies for the construction of additional nitrogen facilities. These certificates provided for a total increase of 1,055,600 tons in nitrogen capacity. The Defense Production administration had set a goal of 2,930,000 tons of synthetic nitrogen production by 1955. Estimated capacity for production, as of Jan. 1, 1951, was 1,639,000 tons. It was expected that about 231,500 tons of additional capacity would be constructed without the need for certificates of necessity. Likewise, two new potash mining operations together with increased imports and somewhat larger production by the older operations were expected to enable the potash goal to be met.

The increase in phosphoric acid production could not be so easily accomplished. Sulphuric acid, a principal ingredient

in the manufacture of superphosphate, the main source of available phosphoric acid, was in short supply because of the world shortage of sulphur. However, new processes for making the insoluble phosphates of phosphate rock into forms available to plants as food were under intensive research and development. One of the most promising seemed to be the use of nitric acid as a substitute, at least in part, for sulphuric acid in the acidulation of phosphate rock. Other methods under investigation employed thermal reactions. Much progress had been made and it seemed probable that the problems would be solved and the phosphoric acid goals would be met.

Certificates of necessity had been issued for the construction of several new concentrated superphosphate and nitra phosphate plants, and a number of others were under consideration or in the blueprint stage. (*See also* AGRICULTURE; BACTERIOLOGY; TENNESSEE VALLEY AUTHORITY.) (F. S. L.)

FHA (Federal Housing Administration): *see* HOUSING.

Fiction: *see* AMERICAN LITERATURE; BOOK PUBLISHING; CANADIAN LITERATURE; ENGLISH LITERATURE; FRENCH LITERATURE; GERMAN LITERATURE; ITALIAN LITERATURE; LATIN AMERICAN LITERATURE; LITERARY PRIZES; RUSSIAN LITERATURE; SPANISH LITERATURE.

Figs: *see* FRUIT.

Fiji: *see* PACIFIC ISLANDS, BRITISH.

Filberts: *see* NUTS.

Financial Review: *see* BUSINESS REVIEW.

Fine Arts: *see* MUSIC; PAINTING; SCULPTURE; etc.

Finland. An independent republic of northern Europe, Finland has an area of 130,159 sq.mi., including the Åland Islands. Pop. (1949 census) 4,042,500; (1951 est.) 4,051,000. Capital: Helsinki; pop. (1951 census) 375,981. Other cities: Turku (Åbo) 103,899; Tampere 102,910. Language and nationality: 90% Finnish, about 10% Swedish. Religion: Lutheran Christian. President in 1952: Juho K. Paasikivi; prime minister: Urho K. Kekkonen.

The Åland Islands, a Swedish-populated archipelago belonging to Finland, lie to the southwest at the mouth of the Gulf of Bothnia. Area: 581 sq.mi. Pop. (1951 census): 22,569. Chief town: Mariehamn, pop. 3,624.

History.—For the sports-minded Finnish nation, and for the world at large, the great event of 1952 was the Olympic games (*q.v.*) in Helsinki. The games were a great success, particularly in the number of records broken and in the participation for the first time of the Soviet Union.

In the economic-political realm the achievement of the year was the final payment on the reparations account to the U.S.S.R. The reparations had originally been set at \$300,000,000 (in 1938 dollar values) to be paid over six years. The period of six years was extended to eight, and the amount was reduced to \$226,500,000. (This was approximately \$570,000,000 in 1952 values.) In order to pay the bill, the Finns had reorganized much of their economy to produce the ships, electric cable and various machinery demanded by the Russians. By Sept. 19, 1952, the job was done.

Obviously the factories built on soviet demand had to go on producing and obviously their market would be Russian; in certain sectors of its economy, Finland was tied to its great neighbour as never before. Inflation and the decline in world market prices for pulp tended to increase the dependence on the U.S.S.R.

Nevertheless the Finns continued to plan and to build for their own future. Improved communication with the sparsely settled north of Finland was envisaged. This in turn would make possible the use of both farming and forest areas so far

undeveloped, but the keynote was to be industrialization. The power station on the Oulu (Ule) river was started and was expected to produce 1,000,000,000 kw.hr. per year by 1956. Such plants, and chemical and forest industries, could hardly be built with private capital; conditions in Lapland did not permit gradual development from small beginnings. Hence the policy of the state was to eliminate the moment of risk for private capital and to create a compromise economic structure.

The triparty coalition of Agrarians, Social Democrats and Swedish People's party continued to live, in tension, held together chiefly by the impossibility of any other combination. Prime Minister Kekkonen created some controversy when, in January, he spoke in advocacy of neutrality for Denmark and Norway. This was pleasing to Moscow, and perhaps to Sweden, but not to Danes or Norwegians or to large elements in Finland. In March further difficulties arose over demands of the labour organization for lower prices on food products, especially butter. Some of Kekkonen's fellow Agrarians tried to make political capital of the problem, and the prime minister offered his resignation. This resulted in a reaffirmation and strengthening of Kekkonen's position; his stabilization policies were approved.

In March the Finnish Swedes went to the polls to elect their "people's parliament" of 60 members—a unique minority assembly which since 1919 had helped to keep Swedism alive and which had developed relations even with the government. The Swedish-speaking people of the Åland Islands experienced a series of vetoes from President Paasikivi, notably in the matter of a local flag, which the president and the supreme court thought was too much like the Swedish flag.

The foreign minister, Sakari Tuomioja, resigned in September, under pressure to return to his post as head of Finland's bank. (*See also* INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT.) (F. D. S.)

Education.—Schools (1951): elementary 6,185, pupils 488,327, teachers 17,228; secondary (middle and lycée) 338, pupils 94,971, teachers 5,559; technical, commercial and special (1950) 457, pupils 25,867; for adults (1950) 80, pupils 3,915, teachers 769. Teachers' colleges 10, pupils 1,739, teachers 137; universities 13, students 9,273, professors and lecturers 642; other institutions of higher education 6, students 3,746, professors and lecturers 432.

Finance and Banking.—Budget: (1952 est.) revenue 171,397,000,000 markkaa, expenditure 171,357,000,000 markkaa; (1953 est.) revenue 176,917,000,000 markkaa, expenditure 176,843,000,000 markkaa. Total public debt (July 1952) 120,866,000,000 markkaa. Currency circulation (Aug. 1952) 45,800,000,000 markkaa. Gold and foreign exchange (Aug. 1952) U.S. \$176,000,000. Bank deposits (Aug. 1952) 55,700,000,000 markkaa. Monetary unit: markka with an exchange rate of 646 markkaa to the pound and 231 markkaa to the U.S. dollar.

Foreign Trade.—(1951): Imports 155,464,000,000 markkaa, exports 186,883,000,000 markkaa excluding reparations 12,396,000,000 markkaa. Main sources of imports (1951): U.K. 14%; Poland 7%; the Netherlands 7%; Denmark 5%. Main destinations of exports: U.K. 27%; U.S.S.R. 14%; U.S. 6%; the Netherlands 5%. Main imports (1951): machinery and vehicles 25%; textiles 17%; coal, petroleum and products 13%; iron, steel and manufactures 11%. Main exports: wood and manufactures 39%; wood pulp 33%; paper and products 20%.

Transport and Communications.—Roads (1950): 36,518 mi. Motor vehicles licensed (Dec. 1950): cars 26,780, commercial 34,469. Railway (1950): 3,533 mi.; passengers 43,000,000; freight net ton-miles 2,121,000,000. Shipping: vessels, 100 gross tons and over (July 1951) 344; total tonnage 555,321. Air transport (1950): passenger-miles 16,600,000; cargo net ton-miles 335,000. Telephones (1951): 328,394. Radio receiving licences (1950): 721,500.

Agriculture.—Main crops (metric tons, 1951): wheat 250,000; barley 196,000; oats 768,000; sugar, raw value 19,000; potatoes 1,481,000; flax fibre (1950) 1,000. Livestock (June 1950): cattle 1,844,000; sheep 1,330,000; pigs 470,000; horses 382,000. Fisheries: total catch (1951) 65,630 metric tons.

Industry.—Industrial establishments (1947): 5,999, persons employed 249,936. Electricity production (1951) 4,428,000,000 kw.hr. Raw materials (metric tons, 1951): pig iron 101,500; crude steel 133,200; copper smelter production 21,100. Forest products (1950): sawed softwood 875,000 standards; sawed hardwood 46,700 cu.m.; pit props 869,000 cu.m.; plywood 215,000 cu.m.; cellulose 1,194,000 metric tons; mechanical pulp 719,000 metric tons; newsprint 421,000 metric tons; other paper and paper board 350,000 metric tons.

Finletter, Thomas Knight (1893–), U.S. secretary of the air force, was born on Nov. 11 in Philadelphia, Pa. He studied at the University of

Pennsylvania, Philadelphia, where he received his bachelor's degree in 1915 and law degree in 1920, and practised law in New York city from 1920 to 1941. From 1941 to 1944 Finletter served as an adviser to the state department on international economic affairs.

He again came into public service in July 1947, when Pres. Harry S. Truman appointed him chairman of a five-man air policy commission to study aerial defense needs. The commission's report, "Survival in the Air Age," had much to do with U.S. decisions to step up research and production of both civilian and military aircraft. Finletter later served on the delegation appointed by Economic Cooperation Administrator Paul G. Hoffman to study U.S. and British productivity and distribution problems.

President Truman appointed him secretary of the air force in March 1950.

In June 1951 he warned, after a tour of Korea, that the Chinese reds were massing soviet-built planes and could be expected to step up their air operations against the U.N. forces. In July he declared that the ability of the U.S. strategic air command to deliver atomic bombs was the greatest deterrent to war.

In 1952 he continued his warnings that any substantial reduction in U.S. air force appropriations might lead to an attack by the U.S.S.R. He testified before the house of representatives' armed services committee on May 12 that \$5,000,000,000 would be needed for additional bases if the air force was to be expanded from 95 to 143 wings.

Fires and Fire Losses. Fire losses in the United States continued their ominous upward trend during 1952. Losses for the first nine months of the year totalled \$581,739,000. This was an increase of 6.1% over the first nine months of 1951 when fire losses amounted to \$548,475,000.

During 1951 there were 302 fires in the United States and Canada with individual losses of \$250,000 or more, producing an aggregate loss of \$213,310,000. Numerically, these large fire losses constituted a 24% increase over the previous year and

resulted in 40% more damage. It was an all-time record previously held by the year 1948.

Geographically, the greatest number of large losses occurred in New York (25); California was second (23), followed by Ohio (17), Pennsylvania (12) and Indiana (11).

A few major fires in 1952 occurred at warehouse M of South Dixie Warehouse, Louisville, Ky., January, total loss \$1,340,000; Cincinnati Sash and Door company plant, Cincinnati, O., January, total loss \$700,000; the Vancouver, B.C., pier fire, April, total loss \$1,370,000. (See also DISASTERS.) (L. J. A.)

Fish and Wildlife Service: see FISHERIES.

Fisheries. Fish and shellfish are sources of protein, fats, minerals and vitamins that can provide the world's undernourished population with an important portion of these food values. According to information released by the Food and Agriculture organization of the United Nations, the 1952 world production of all types of food was only sufficient to provide each person with an average of 2,260 calories daily, which was far below the minimum requirement for a healthful diet. Unfortunately, it was estimated that 60% of the world's population received an average of less than 2,250 calories each day, and in most of the countries which had an inadequate food supply, the quality of the food was also low.

The world production of fish as of 1952 was at an annual rate of about 55,000,000,000 lb. Officials of F.A.O. estimated that, by expanding facilities, this yield could be doubled without risk to the future of the resource. The catch of fishery products was being taken largely from waters over the continental shelves having a depth of 600 ft. or less, which comprise less than 10% of the total ocean area. More than 95% of the catch was being taken in the northern hemisphere. In many parts of the world the fishery industry remained relatively primitive in the light of existing scientific and engineering standards. In addition to the possibility of expanding the yield of fishery products from the sea, a large increase in yield could be derived

COUPLED OXEN hauling fishing boats to the water's edge, a Phoenician custom still common in the Portuguese coastal village of Nazaré in 1952



from fresh and brackish waters. According to an F.A.O. estimate, about 20% of the world's fish production was derived from these waters. Fortunately, large regions were available in which pond culture could be practised, including areas such as southern Asia and Egypt, where there was a great need for increased protein in the diet.

The methods used in preparation of fish for consumption varied widely in various areas, largely because of the needs of populations and the facilities available for preserving the catch and transporting it to consuming centres. Estimates prepared by the F.A.O. indicated that about 46% of the world catch of 55,000,000,000 lb. was marketed fresh and frozen. In the United States about 35% of the domestic catch was marketed in this manner. About 39% of the world catch was cured by drying, smoking and salting, while only 2% of the U.S. catch was cured. Only 5% of the world catch was used for canning, compared with 34% of the U.S. production used for this purpose. While 29% of the U.S. catch was used for reduction into oil and meal and as bait, only 10% of the world catch was used for these purposes.

The United States and Alaska catch of fish and shellfish in 1951 totalled approximately 4,400,000,000 lb. for which fishermen received an estimated \$345,000,000. The volume of the catch was about 10% less than in 1950, while the value declined about 5%. Reduced landings of pilchard and herring, because of the failure of these fish to appear in normal quantities, and of tuna as a result of marketing difficulties, were largely responsible for the decrease in production. The leading species taken during the year were: menhaden, 1,100,000,000 lb.; salmon, 400,000,000 lb.; pilchard, 325,000,000 lb.; tuna and tunalike fishes, 322,000,000 lb.; and ocean perch, 260,000,000 lb. The U.S. and Alaska catch was made by 165,000 fishermen who operated 10,500 vessels of 5 net tons and over, 48,000 motor boats and 34,000 other craft.

The fisheries of Norway set a new production record in 1951 with a yield of 3,600,000,000 lb. This figure was 25% greater than the former record established in 1948. The increase was the result of a record catch of winter herring, large catches of small and fat herring and good catches of spawning cod. Record catches of tuna were made by Norwegian fishermen during the summer of 1952. Most of the latter catch was shipped to Italy for canning.

Despite a rapidly growing population with most of its immigrants coming from countries having comparatively high per-capita fish consumption, Australia's total production of fish and shellfish was reported to be decreasing. The catch had averaged about 87,000,000 lb. in recent years, only 19% above the yield 20 years before, despite an increase of 66% in the number of fishermen operating.

Japanese fishermen continued to expand their fishing operations during 1952. A number of successful expeditions for tuna were made to equatorial and mid-Pacific areas. The first post-World War II salmon expeditions to the North Pacific exceeded the catch goals, returning with catches of more than 2,000,000 fish.

German fishing vessels resumed fishing in Greenland waters in 1952, after a lapse of 15 years. The fishing was conducted by diesel-electric trawlers which fished for bottom fish, such as cod and ocean perch. Prior to World War II, German vessels operating in the area fished hand lines for halibut.

Because of restrictions on fishing in Norwegian and Icelandic waters, British vessels conducted exploratory fishing operations in Greenland waters during 1952. Excellent catches were made, and it was considered likely that an important British fishery would develop off Greenland.

The South African pilchard industry registered a phenomenal

gain in production during 1951 with a catch of more than 600,000 lb., nearly 100% greater than the previous year's.

Although the volume of the Canadian catch of fishery products in 1951 was slightly less than in the previous year, market value established a new record of \$196,000,000.

The total production of whale oil in the antarctic in 1951-52 pelagic season amounted to 2,328,869 bbl. Production of the antarctic land stations during the 1951-52 season amounted to 144,812 bbl., bringing the total to 2,473,681 bbl., or 169 bbl. more than in the previous season. Outside the antarctic the total production in 1951 amounted to 656,426 bbl., compared with 382,699 bbl. in the previous year.

A maritime decision of major importance was rendered in 1951 when the International Court of Justice at The Hague decided that the method employed for the delimitation of fisheries zone by the Norwegian decree of July 12, 1935, was not contrary to international law. The Norwegian decree measured territorial limits from base lines running from extreme points of the coast instead of a curved line extending from the mainland three miles into the sea, measured at low water. For its determined base lines, Norway claimed a further four-mile limit as territorial waters. The British government had objected to the decree because it closed important fishing grounds to the British fishing fleets and also because it raised questions regarding the old convention of the three-mile limit for territorial waters.

Regulations establishing a four-mile zone for fishing around all of Iceland were issued by the Icelandic government on March 19, 1952. These regulations provided that the straight base lines of the delimited zone be drawn from the outermost points of the coasts, islands and rocks, and across opening bays. All foreign fishing activities were prohibited within a four-mile zone.

Research.—Exploratory fishing craft were employed in many areas throughout the world in 1952 in determining the extent of present fishing grounds, finding new fishery resources and in developing new fishing techniques. In both the United Kingdom and the United States, experiments were conducted to determine the feasibility of using underwater television cameras to locate profitable fishing areas and to study the operation of gear such as otter trawls which are fished on the bottom of the sea. German scientists developed methods of electrofishing in salt water which indicated that it was possible to direct the movement of fish with an electric current so that they could be captured. (See also MARINE BIOLOGY; OCEANOGRAPHY.)

International Fishery Conferences.—International fisheries conferences held during 1952 included those of the Caribbean Fisheries commission in Trinidad, B.W.I., March 24-28; association with the Caribbean Research council; the International Meeting on Fishery Statistics at Copenhagen, Denmark, May 26-31; the fourth annual meeting of the International Whaling commission at London, Eng., on June 3; the first meeting of the General Fisheries Council for the Mediterranean at Rhodes, in the Dodecanese Islands, July 21-24.

North Pacific Fisheries Treaty.—Ratification of the partial treaty for the North Pacific fisheries conservation was voted by the United States senate on July 4, 1952, and was followed by Japanese approval on July 5. Ratification by Canada would bring the treaty into full effect. The fundamental purpose of the treaty, as declared in the convention, was to assure that the high-seas fisheries of the ocean area concerned would be maintained on a maximum sustained-yield basis as one of the world's great sources of protein food.

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(E. A. PR

Canada.—The federal department of fisheries campaign to get Canadians to eat more fish progressed slowly: per-capita consumption in 1949 was 12.87 lb.; in 1950, 13.53 lb.; in 1951, 13.69 lb. There was a sense of urgency about the campaign in 1952, because fishermen landed 600,000,000 lb. of sea fish during the first half of the year; it was the first time since half-yearly figures were recorded that such a heavy catch had been accumulated by the end of June. There was a huge sardine catch, amounting to 21,488,000 lb. by the end of May, compared with 375,000 lb. for the same 1951 period; the 1952 pack by that time totalled 385,790 cases, compared with 53,467 cases for the first five months of 1951. A densely stocked bed of small scallops, discovered in the Northumberland strait in 1950, was in fine condition for fishing. Major aids were given to spawning salmon by the construction of two fishways on the Buckley river aided by a brail and flume system on the Babine river in British Columbia. The Fisheries Research board was active throughout the year with experiments to keep lobsters alive in artificial sea water (and thus expand the lobster-shipping area and the lobster market), to improve fish refrigeration, to find better fishing methods, to control fish predators and to increase the knowledge of size and composition of fish stocks. There were a number of 1952 provincial fisheries developments of interest: the federal government paid Newfoundland fishermen approximately \$840,000 in support of prices of the 1950 catch; Nova Scotia offered loans to fishermen who had suffered from the bad storms of the 1951-52 winter; Quebec and the federal government co-operated to provide long-liner diesel trawlers to Gaspé fishermen at cost; and Ontario experimented with stocking lakes with hybrid game fish.

The total landings of sea fish reached 1,291,733,000 lb. worth 2,660,000; in 1951 landings reached 1,335,696,000 lb. worth 7,730,000,000. (C. Cy.)

shing: see ANGLING.

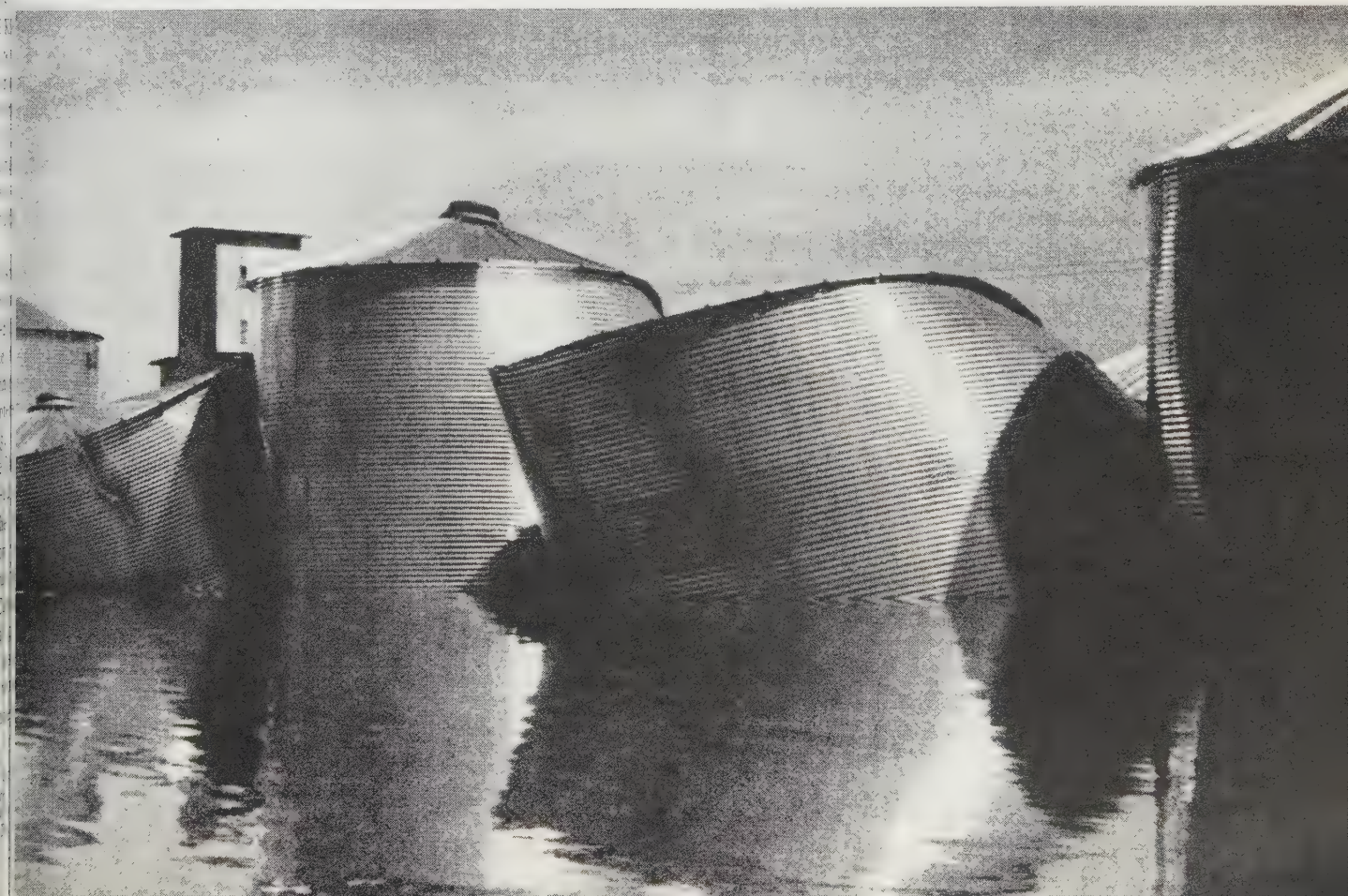
Flanders, Ralph Edward (1880—), U.S. senator, was born on Sept. 28 at Barre, Vt. After graduating from high school, he was apprenticed as a machinist from 1897 to 1901. From 1905 to 1910 he was associate editor of the magazine *Machinery* in New York city. He became director and manager of the Jones and Lamson Machine company at Springfield, Vt., in 1912 and later was president (1933-46). A close student of economics, he also became known as an authority on economic planning, serving on various state and national boards, as a member of the industrial advisory board of the National Recovery administration and as president of the Federal Reserve bank, Boston (1944-46).

In 1946 Flanders was appointed to fill the unexpired term of Sen. Warren Austin as Republican senator from Vermont and was elected the following November for the full term 1947-53. He was re-elected in 1952. A member of the liberal Republican group in the senate, he called for a "more progressive" Republican party program. He opposed the foreign policy views of Sen. Robert A. Taft and former Pres. Herbert C. Hoover, but criticized Pres. Harry S. Truman's removal of Gen. Douglas MacArthur. An ardent supporter of Gen. Dwight D. Eisenhower for the Republican presidential nomination, Flanders declared on June 28, 1952, that nomination of Senator Taft would threaten "ruin" for the Republican party.

Flax: see LINEN AND FLAX.

Floods and Flood Control. The U.S. flood control act, approved July 11, 1952, provided \$325,012,800 for flood control work during the fiscal year ended June 30, 1953. The funds were classified as follows: flood control, general, \$255,742,800; emergency fund,

GOVERNMENT CORN STORAGE BINS which burst and crumpled under pressure of corn which became swollen by Missouri river floodwaters near Blencoe, Ia., in April 1952



\$8,000,000; lower Mississippi river, \$60,020,000; Sacramento river, \$1,000,000; Mississippi river emergency fund, \$250,000. Of the flood control general fund, \$243,670,800 was specified for new construction; \$1,650,000 for advance planning, preliminary examinations and surveys; and \$6,112,000 for operation and maintenance. Exclusive of the lower Mississippi river and the Sacramento river, flood control construction was continued or begun on 72 projects in 30 states. The \$60,020,000 allotted the lower Mississippi river project was designated for work in 7 states: Kentucky, Illinois, Tennessee, Louisiana, Missouri, Arkansas and Mississippi.

Congress also appropriated \$1,600,000 for a general survey, \$465,000 for the Arkansas-White-Red river basin survey and \$410,000 for the New England-New York survey.

Dams and reservoirs placed wholly or partly in operation during the 1952 fiscal year included the Mansfield Hollow reservoir, Connecticut; the Harlan County reservoir, Nebraska; Cagles Mill reservoir, Indiana; Whitney reservoir, Texas; Tenkiller Ferry reservoir, Oklahoma; Mount Morris reservoir, New York; Pine Flat reservoir, California; and the Albeni Falls reservoir, Idaho. Local protection projects placed in operation included the projects at Portville, N.Y.; Olean, N.Y.; Mount Clemens, Mich.; Hoosick Falls, N.Y.; Adams and North Adams, Mass.; Amazon Creek, Ore.; and Milton-Freewater, Ore.

Floods occurred in many of the nation's major river basins during the year. The most devastating was that of March-April in the Missouri river basin. Flooding on the main stem was caused mainly by excessive local runoff and inflows from the flooded tributaries, as a result of the sudden thawing of a relatively heavy snow cover. Ice jams were important contributing factors in North Dakota. As the flood moved down the Missouri, it surpassed all previous records, including the historic flood of 1881. Because of its long crest and enormous volume, estimated at 10,000,000 ac.-ft., flooding of the more vulnerable points downstream often preceded the crests by nearly a week. Major flooding occurred at Sioux City, Ia., and points below. All privately built farm levees were overtopped in the reach between Sioux City and Kansas City, Mo. Three of the federal agricultural levees between Omaha, Nebr., and Kansas City were overtopped. To protect the cities of Omaha and Council Bluffs, Ia., one of the greatest flood fights in history was waged. In the fight that saved these cities from inundation, the corps of engineers, its contractors and army troops put in nearly 1,500,000 man-hours of work. Approximately 5,000,000 sandbags were used, 800,000 ft. of lumber and about 100,000 tons of stone. At the peak, about 25,000 people took part in all phases of the levee defenses at Omaha and Council Bluffs. Estimated damage caused by the flood was \$179,000,000. Total damage prevented by existing flood control works amounted to an estimated \$238,580,000.

The flood that occurred in April 1952 on the Mississippi river above Keokuk, Ia., was the highest on record and came from snow melt in central and southern Minnesota. Large floods occurred on the Mustinka, Sand, Elk, Crow, Rum and Minnesota rivers. Estimated damage caused by the flood was \$20,517,000, with \$9,000,000 in Minnesota alone. Damage prevented amounted to an estimated \$41,010,000.

Heavy rainfall fell over the state of New Jersey on March 11 and 12, 1952, with heaviest concentration along the watersheds of the northern tributaries of the Passaic river. The heavy runoff accompanying the storm caused total damage estimated at \$468,000. The Passaic river was in flood stage again on April 5-6, and a third flood occurred in the basin on June 1-2. Total damage in the Passaic river basin from these two floods amounted to \$1,694,500.

Floods also occurred in southern California during Jan. 1952.

The major stream basins affected were Los Angeles river, Gabriel river, Rio Hondo and Baloota creek. The principal types of property damaged by the flood were industrial, business, residential, street, highway and railroad. Estimated damage from floodwaters was \$4,510,000. The damage prevented by existing improvements was estimated at \$20,200,000. (G. H. B.)

Other Countries.—The year 1952 was remembered for severe flooding in the west of England which overwhelmed small north Devon seaside resort of Lynmouth, and the surrounding area, during the night of Aug. 15. The primary cause of the flooding was the phenomenal rainfall that occurred on moor and other districts of Somerset and Devon. At Longst Barrow, which stands at a height of 1,500 ft. along the north watershed of Exmoor, 4 mi. from Lynmouth, the rainfall during 24 hr. was 9 in., of which 5 in. fell in 5 hr. At Oakhampton on the north edge of Dartmoor, the fall amounted to 4.25 in. A heavy rain was associated with a shallow but slow-moving depression along the English channel, and the upper air conditions favoured rainfall of thundery intensity, while the height of moor and Dartmoor caused the rainfall to be concentrated on a relatively small area. In all, the floods struck an area of north Devon and Somerset from Dunster to Tiverton, South Molton and Lynton embracing more than 250 sq.mi. Public utilities services and numerous properties were damaged or demolished in many villages, and 18 bridges were either carried away or extensively damaged, thus restricting transport and hampering relief work. The full extent of the damage was estimated at £3,000,000 to £5,000,000. The number of persons immediately made homeless was 900, and the final death toll was 31, which represented the worst flood disaster in Great Britain since the beginning of the century. Subscriptions to a national relief fund exceeded £1,000,000.

The early part of August was unusually wet and flooding occurred in other parts of Great Britain as a result of thunderstorms. Many places had up to 2 in. of rain during a week and more than 3 in. was recorded at Douglas, Isle of Man. In Cumberland and Yorkshire several roads were impassable, and a large area of grain crop was flattened in Argyllshire. At Blackpool heavy seas damaged boats and buildings on the front, and thousands of acres of low-lying land on the shores of Morecambe bay were flooded. In Belfast, after 30 hr. of rain, the Blackstaff river overflowed its banks causing the worst flooding in living memory. About 2,000 houses were affected and more than 100 ac. in the Donegal road area of the city were inundated.

During the year further consideration was given to severe flood protection schemes, the largest being that dealing with the Great Ouse river which included the provision of works from Lynn down to the end of the training walls, the estimated cost of the works being £6,000,000. Preparations were begun for a £160,000 scheme to prevent flooding at Gainsborough, Lincolnshire. Fleetwood corporation approved a scheme for coastal protection at an estimated cost of £250,000 planned to be constructed over a period of three to four years; and at Selsey, Sussex, a sea defense project was considered, estimated cost £500,000.

Commonwealth.—The Ontario, Can., government announced in July that approval had been given to the construction of the Glen Allen dam, about 53 mi. above Galt, for the control of floods on the Conestogo river. The dam would form a reservoir with a surface area of 3 sq.mi. and was estimated to cost \$5,000,000.

In New South Wales, Austr., floods in June caused the formation of a lake about 60 mi. long and 50 mi. wide, about 20 mi. southwest of Forbes. Further floods in August resulted in the fifth major flood in five years at Maitland, and kept 2,000

people out of their homes.

In the suburbs of Bombay the heaviest July rainfall in 30 years was experienced. With more than 12 in. in 24 hr., and more than 6 in. between 6 A.M. and 8:30 A.M., the estimated maximum intensity was computed to be 4 in. an hour. The downpour disrupted air, railway and road traffic, and people in the low-lying areas of the city were forced to seek shelter in the upper floors of buildings. Also in July, heavy rain in the hills caused the Brahmaputra river and its tributaries to rise, and floods spread over upper and lower Assam. In West Bengal, the town of Alipier Duar was partly under water. In August, floods again occurred in Assam when the Brahmaputra river rose and flooded eight island villages. In Bihar it was reported that the state had suffered severe damage from drought in the south, and floods in the north; while 12,500,000 people were affected by drought within an area of 18,000 sq.mi. in south Bihar, crops were seriously damaged and 500,000 people were seriously affected by floods in the Kosi river valley in north Bihar. Flooding of the Gumti river, southeast of Dacca (East Pakistan), occurred in July and affected between 25,000 and 30,000 people, sweeping away large areas of rice paddy and jute fields.

Algeria.—In September, the Zarour river rose more than 18 in. in a few minutes when a cloudburst, lasting for about half an hour, occurred over the town of Tebessa in the region of Constantine. The tempestuous torrent swept away mud huts, brick houses, trees and cattle, and 25 persons were reported drowned. The plain of Merdzah, which stretches before the gates of Tebessa, was completely submerged.

Spain.—Heavy rains and floods in Navarre damaged crops and livestock estimated at £200,000, and at Allo 3 persons were drowned and 400 cut off by floods. (See also DAMS; DISASTERS; IRRIGATION; METEOROLOGY; SOIL EROSION AND SOIL CONSERVATION; TENNESSEE VALLEY AUTHORITY.) (J. Kd.)

Florida. The extreme southeastern state of the United States, Florida was admitted to the Union in 1845 as the 22nd state. It is called the "Sunshine state," and sometimes the "Peninsula state." Its coast, not taking into account the numerous bays and indentations, is greater than that of any other state, extending about 472 mi. along the Atlantic and 14 mi. along the Gulf of Mexico. Area: 58,560 sq.mi., of which 298 sq.mi. are water surface; population (1950 U.S. census) 771,305, an increase of 873,891 or 46.1% over that of 1940. Of this population 1,813,890 were urban dwellers and 957,415 were rural; 2,166,047 were white, 605,258 were nonwhite. The cities of more than 25,000 people in 1950 were: Miami, 249,766; Jacksonville, 204,517; Tampa, 124,681; St. Petersburg, 117,738; Orlando, 52,367; Miami Beach, 46,282; Pensacola, 43,799; West Palm Beach, 43,162; Fort Lauderdale, 36,328; Lakeland, 30,851; Daytona Beach, 30,187; Tallahassee (the capital), 23,737; Gainesville, 26,861; Key West, 26,433; Panama City, 23,814. On July 1, 1951, the state's population was estimated at 801,000.

History.—The state elective administrative officers in 1952, whose terms expire in Jan. 1953, were: Fuller Warren, governor; R. A. Gray, secretary of state; Richard W. Ervin, attorney general; C. M. Gay, comptroller; J. Edwin Larson, state treasurer; Thomas D. Bailey, superintendent of public instruction; Nathan Mayo, commissioner of agriculture. Dan McCarty of Fort Pierce received the Democratic party nomination for governor in the May primaries to succeed Governor Warren in Jan. 1953.

At the general election Nov. 4, 1952, the people voted on proposed amendments to the state constitution. One of these provided that part of the revenue from motor car licences



NEW CLUBHOUSE for the Gulfstream park race track, Hallandale, Fla., first opened in 1952

should be used for capital outlay and debt service for school purposes. Another would increase the number of state supreme court justices from seven to ten. Another provided for the granting of county charters by the legislature. Two proposed amendments would provide for an increase of two state senatorial districts, thereby increasing the size of the state senate from 38 to 40.

The 1951 legislature amended the homestead realty tax exemption law to the effect that a person must be a legal resident of the state for one year prior to making applications for homestead exemption to receive this benefit. The state supreme court declared this act unconstitutional.

Education.—Enrolment in the public schools for the year 1951-52 in grades 1 through 12 was as follows: white, 424,558; Negro, 129,412; total 553,970. Kindergartens: white, 2,821; Negro, 145; total 2,966. Junior colleges (grades 13 and 14): white, 1,026; Negro, 138; total 1,164. There were 1,273 elementary and 715 secondary public schools, 46 kindergartens and 5 junior colleges in the state, of which there were 767 white and 506 Negro elementary schools, 485 white and 230 Negro secondary schools, 44 white and 2 Negro kindergartens and 4 white and 1 Negro junior colleges. These schools had instructional staffs (exclusive of 202 supervisors) of 18,997 teachers and 851 principals, of whom 14,444 teachers and 683 principals were employed in schools for whites and 4,553 teachers and 168 principals were employed in schools for Negroes.

Social Insurance and Assistance, Public Welfare and Related Programs.—Florida disbursed for state welfare through the state welfare board \$43,421,390.92 in 1951-52. From grants by the federal government the state received in 1951-52 for old-age assistance \$19,763,700.83; for dependent children \$7,545,465.83; and for aid to the blind \$994,326.48; total \$28,303,493.14. Disbursements for old-age assistance were \$31,369,825.47; for dependent children \$10,450,359.31; and for the blind \$1,601,206.14; total \$43,421,390.92. Administrative and other welfare services amounted to \$2,672,630.21 which included \$1,245,993.84 in federal funds. The unemployment benefits receipts were \$11,125,833.35 with net benefit payments of \$7,124,770.05. The appropriations for prisons and other institutions for 1952-53 were: the prison at Raiford \$963,565; the prison farm at Belle Glade \$309,720; the industrial school for boys at Marianna \$408,714; the industrial school for girls at Ocala \$127,700; the Apalachee Correctional institution \$226,500; the Female Correctional institution at Forest Hill near Ocala \$75,000. The state supports state hospitals for the insane at Chattahoochee and Arcadia, the Florida Farm colony for the feeble-minded at Gainesville, and the Florida School for the Deaf and Blind at St. Augustine. The appropriations for these institutions for 1952-53, including capital outlay, were \$6,686,350, \$614,280 and \$521,950 respectively.

Communications.—The total highway and street mileage in the state at the end of the year 1951 was 51,915 mi., of which 21,923 mi. were paved and 3,837 mi. were hard surfaced with gravel or stone. Disbursements for the calendar year 1951 were \$58,617,751.49 for construction and \$9,944,151.97 for maintenance. The state road department's budget for the year 1952 amounted to \$110,387,200 for construction and \$7,758,720 for maintenance. Florida had in 1952 approximately 5,000 mi. of railroads exclusive of yard tracks.

Banking and Finance.—On June 30, 1952, there was a total balance in the state treasury of \$82,506,649.64 with outstanding warrants of \$13,108,010.94. The state is constitutionally forbidden to incur a debt by borrowing except to put down insurrection and repel invasion. The constitution also prohibits the legislature from levying an income tax, forbids

Table I.—Principal Crops of Florida

	Indicated 1952	1951	Average, 1941-50
Corn, bu.	9,236,000	9,616,000	7,378,000
Oats, bu.	1,080,000	500,000	454,000
Hay, tons	50,000	60,000	65,000
Tobacco, lb.	29,700,000	32,392,000	19,990,000
Cotton, bales	27,000	32,000	13,000
Potatoes, bu.	7,706,000	6,321,000	4,398,000
Sweet potatoes, bu.	488,000	510,000	950,000
Peanuts, lb.	51,150,000	62,640,000	64,016,000
Sugar cane, short tons	1,271,000	1,292,000	969,000
Oranges, boxes	81,000,000	78,600,000	49,940,000
Tangerines, boxes	4,700,000	4,500,000	4,100,000
Grapefruit, boxes	33,000,000	36,000,000	28,140,000

Source: U.S. Department of Agriculture.

Table II.—Indicators of Florida Manufacturing

	1950	1947	Change 1947-50 Florida	U.S.
Value added	\$439,680,000	\$349,976,000	25.6%	20.5%
Total number of employees	87,478	78,665	11.2%	0.5%
Total pay rolls	\$216,228,000	\$168,817,000	28.1%	17.4%

Source: U.S. Department of Commerce, Bureau of the Census.

Table III.—Value Added by Principal Florida Industries

	1950	1947	Percentage change 1947-50 Florida	U.S.
Chemicals	\$31,617,000	\$34,706,000	-8.9%	34.9%
Food	98,791,000	92,324,000	7.0%	11.9%
Lumber	68,478,000	47,184,000	45.1%	26.8%
Paper	84,395,000	55,777,000	51.3%	19.4%
Tobacco	34,211,000	18,723,000	82.7%	25.7%
Other	122,188,000	101,262,000	20.7%	20.2%

Source: U.S. Department of Commerce, Bureau of the Census.

any state ad valorem tax on real estate and exempts homesteads from taxation by local taxing units up to the value of \$5,000.

On June 30, 1952, there were within the state 63 active national banks with total deposits amounting to \$1,528,697,000 and 141 state banks and trust companies with deposits of \$754,432,212.76, representing total deposits of \$2,283,129,212.76, a gain of \$243,553,149.86 in the fiscal year.

Agriculture.—The sale of citrus products amounted to \$169,527,000 for the year 1951. The sale of truck crops, including strawberries, for the year 1951 amounted to \$127,025,000. On Jan. 1, 1952, the livestock resources of the state were as follows: 1,250,000 beef cattle and calves; 149,000 milk cows; 610,000 swine; 3,000 sheep; 27,000 horses; 25,000 mules.

The total income from the sale of agricultural commodities for the year 1951 was \$507,211,000. This included income from the sale of cattle and hogs \$51,394,000; poultry \$27,079,000; dairy products \$38,590,000; truck crops \$127,025,000; citrus \$169,527,000; greenhouse and nursery products \$22,615,000; and from field crops: tobacco \$23,302,000, potatoes \$12,578,000, corn \$1,079,000, sugar cane for syrup \$1,012,000, sugar cane for sugar \$8,939,000, cotton \$5,535,000 and peanuts \$5,271,000.

Manufacturing.—The value added by manufacturing in Florida increased from \$350,000,000 in 1947 to nearly \$440,000,000 in 1950, an increase of one-fourth in contrast to a one-fifth rise nationally. The total number of manufacturing employees rose by 11% from 1947 to 1950, compared with 0.5% for the nation.

National defense contracts, amounting to about \$116,000,000 from July 1, 1950, to September 30, 1951, were a great stimulus to industrialization in Florida.

There was also a great growth in the number of business firms. The number of all Florida business companies, both manufacturing and non-manufacturing, increased from 48,000 in 1944 to 91,000 in 1951, a rise of 89% compared with 32% for the nation. In Jan. 1952 the total manufacturing employment reached 112,800, which was 12.5% more than the number in 1950. (A. N. P.)

Mineral Production.—Table IV shows the tonnage and value of those mineral commodities produced in Florida in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet

Table IV.—Mineral Production of Florida

(In short tons, except as noted)

Mineral	Quantity 1950	Value 1950	Quantity 1949	Value 1949
Clays	127,000	\$1,955,000	96,000	\$1,447,000
Petroleum (bbl.)	487,000	"	441,000	"
Phosphate rock	9,056,000	45,378,000	7,633,000	37,858,000
Sand and gravel	2,794,000	2,807,000	2,244,000	1,880,000
Stone	5,313,000	6,885,000	4,215,000	4,748,000
Other minerals	"	10,692,000	"	9,085,000
Total	"	\$67,717,000	"	\$55,018,000

*Value included with other minerals.

available. Florida ranks first among the states in the production of phosphate rock and ilmenite, and stands 28th in the value of output, with .57% of the U.S. total.

Flour. **Flour Production.**—Commercial wheat flour production in 1951 for the U.S. totalled 239,300,000 sacks (100 lb. each), an increase of 2% over the 224,900,000 cwt. of 1950. Wheat ground into flour amounted to 535,200,000 bu., compared with 523,400,000 bu. for the previous year. Wheat

flour mills in 1951 operated at 79.9% of capacity, compared with 78.6% in 1950.

Rye flour production also registered an improvement amounting to approximately 2,292,000 cwt., a gain of 5% above the previous year's total.

Flour milling statistical data compiled by the U.S. bureau of the census are based on reports from mills having a day (24-hr.) capacity of 401 sacks and more, representing more than 97% of the total U.S. capacity. During 1951, 22 mills reported that they were going out of business, 13% of the number being in the 401 to 800 cwt. per day capacity group.

Flour Improvement.—A comprehensive survey by C. Harrel of the various methods and processes for achieving improvements in the baking characteristics of bread, cake and cookie flours was published in *The Baker's Digest*, May and June 1952. His study included references to 39 important technical sources and to 11 textbooks on the bleaching and maturing of flour. The survey dealt principally with the beneficial effects produced by various bleaches such as chlorine, chlorine dioxide, nitrogen trichloride, benzoyl peroxide and other commercially useful maturing agents.

Sanitation.—Sanitation standards for flour handling equipment as recommended for use by bakers and other commercial users of flour were developed by the Baking Industry Sanitation Standards committee. The recommendations of the committee were made available in a 13-pp. booklet, published June 1, 1951, which described the general principles of design and construction for practically all standard devices for the storage, moving and handling of flour.

Flour and Bread Enrichment.—By 1952, 26 states in the U.S. had supported the enrichment program with compulsory legislation, and in practically all other states a very high proportion of flour and white bread continued to be enriched with vitamins and minerals on a voluntary basis. (See Z. I. Kertesz, *Food Technology*, July 1952.) The Millers National federation and the American Bakers association were continuing their wholehearted support of the enrichment program. A complete report on the status of flour and bread enrichment was available from the National Research council.

Flour Specifications for Prepared Mixes.—George Garnatz, chairman of the Flour Specifications panel of the American Association of Cereal Chemists, enlisted the aid of prominent cereal mix manufacturers in specifying flour types or blends best suited to four different types of mixes, based on leavening as follows: (1) chemically leavened; (2) yeast leavened; (3) not leavened; and (4) not leavened (pie crust). In general the basic types of flour were employed in mix formulations: (1) soft wheat flour, for cake, doughnut, pancake and waffle, biscuit, muffin, cookie and pie crust mixes; (2) hard wheat flour, for bread, hot roll, raised doughnut and coffee cake mixes.

Flour Characteristics for the 1952 Hard Winter Wheat Crop.—The Southwest Cereal Chemists crop reporting committee issued its final report for the 1952 crop, with comments on the following flour characteristics: mixing time, fermentation time, absorption, floor time, proof, malt requirements, yeast food requirements, loaf volume, ash and protein. On the average it appeared that the protein content would be somewhat lower and that the mixing time would be correspondingly shortened, perhaps by as much as 30% in some cases. (*American Baker*, Aug. 1952, p. 12.)

Flour Technology.—Numerous scientific reports on various phases of flour technology appeared throughout the world technical literature, practically all of which were summarized and reported in various abstracting publications such as *Biological Abstracts*, *Chemical Abstracts* and *The Baker's Digest* abstract section. Typical of the more recent and reliable

U.S. Commercial Wheat Milling Production by Capacity Groups

1951			1950		
	Number of mills	Total (thousands of sacks)	Number of mills	Total (thousands of sacks)	Average per mill (thousands of sacks)
sacks and under					Daily 24-hr. capacity (sacks)
51- 100			73	88	1.2
101- 200			211	794	3.8
201- 300	*	16,338	220	2,051	9.3
301- 400			93	1,763	19.0
401- 500			54	1,466	27.1
501- 600	84	4,746	97	6,115	63.0
601- 700	49	7,876	57	9,994	175.3
701- 800	40	9,237	39	8,453	216.7
801- 900	45	21,545	49	20,942	427.4
901-1,000	35	23,651	39	26,617	682.5
1,001-1,200	31	27,236	29	26,443	911.8
1,201-1,400	32	37,622	30	32,436	1,081.2
1,401-1,600	24	38,212	22	35,346	1,606.6
1,601-1,800	15	52,829	15	52,391	3,492.7
1,801-2,000	*	239,292	1,028	224,899	218.7
2,001 and over					1,125,921
Total					

Not available.

cial on flour and flour milling technology was C. G. Harrel's article on "Maturing and Bleaching Agents Used in Producing Flour," a review prepared to serve as a source of information for professional men, students, educators and housewives. (*Industrial and Engineering Chemistry*, vol. 4, no. 1, pp. 95-100, 1952.)

Great Britain.—During 1952 there were no outstanding changes in milling and baking. In Great Britain the extraction rate of flour remained unchanged at 81% but, with the incorporation of the normal amount of whiter imported flour, bread for the public was, to all intents and purposes, made from 80% white flour. In other words, from 100 parts of wheat 80 parts of flour were obtained as opposed to about 72 parts obtained prior to World War II. The higher percentage, of course, resulted in the bread being darker.

Some minor relaxation of controls in bread manufacture took place, wrapped and sliced bread being quite commonplace. The character of bread is largely dependent on the nature of the flours used, but again there was little change during the year. Canadian and English wheat represented the bulk of the wheats used. In prewar days no less than 40 countries sent wheat to Great Britain, but by 1952 the number was 5.

In the training of bakers attention was being given to the underlying sciences involved so that greater economies could be effected and efficiency improved. In spite of many difficulties the quality of bread remained at a high standard and a compromise was reached between colour and nutritive value although it might still be advisable to make alterations in the future. Enrichment of bread with added vitamins, practised in the U.S. and other countries, did not spread to any extent to Great Britain. (See also BREAD AND BAKERY PRODUCTS; WHEAT.)

(D. W. K-J.)

Food and Agriculture Organization: see AGRICULTURE.

Food and Drug Administration: see DRUG ADMINISTRATION, U.S.

Food Supply of the World: see AGRICULTURE.

Football. Not all the news of United States intercollegiate football came from the playing fields in 1952. Following severe criticism of 1951, when schools were accused of going to any lengths to obtain athletes, a special committee of college presidents was appointed by the American Council on Education to investigate the evils undermining sports and make recommendations to aid in a general cleanup. The group, headed by John A. Hannah, president of Michigan State, was disbanded in November after almost a year of research, but before some progress toward reform had been made. Hannah's committee reported that the chief evil was the granting of scholarships in wholesale lots to stars, regardless of their previous schooling, and then allowing those athletes to slide through

four years of college by taking useless courses.

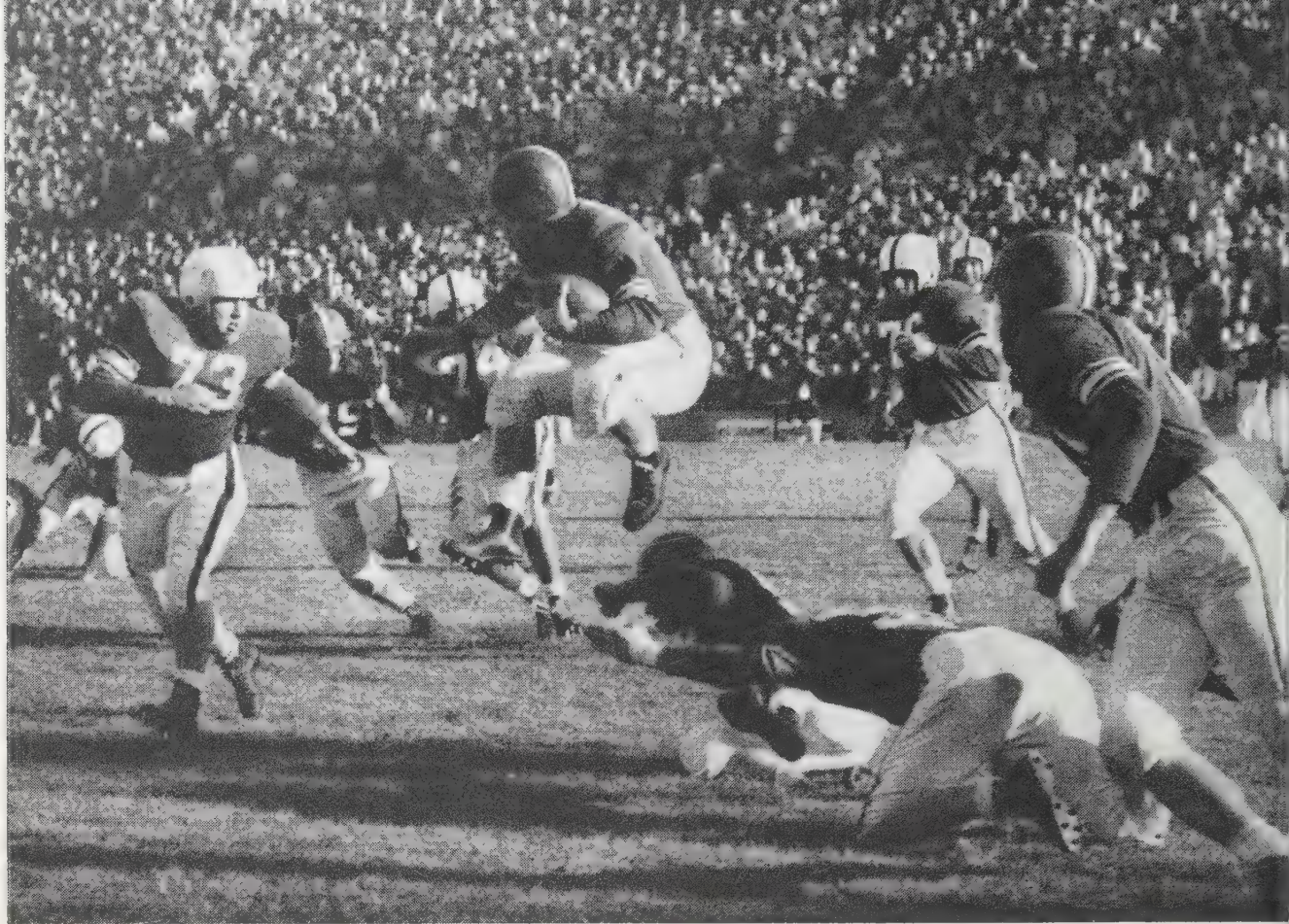
Following the recommendations of the committee, a number of leagues abolished spring training and barred postseason contests as steps toward de-emphasizing the game. Members of the Eastern (Ivy) league, which earlier had banned bowl games, signed an agreement limiting spring work and putting the scholarship requirements for athletes on the same plane with those for other students.

The Big Seven also barred postseason games, and several of the smaller schools dropped football completely. Many schools were looking into their athletic finances following another recommendation by the Hannah committee that all scholarship funds be handled by the universities, which would eliminate unqualified men from receiving aid directly from booster clubs.

Television remained a controversial problem. The National Collegiate Athletic association television committee, whose previous survey had found that telecasting on an open basis had cut into attendance, recommended a course of moderation, and restrictions were maintained during 1952, following the limited program tried the year before. One major contest a week was telecast, although in several instances stations were allowed to review a game locally. Attendance at the majority of colleges stayed up and gained in some places, although that at the smaller schools dropped considerably.

A number of rule changes, mostly designed to discourage unnecessary roughness, were made by the college rules committee. Illegal use of hands or forearms in blocking, which called for a 15-yd. penalty, also carried a mandatory suspension for a flagrant offender. Clipping was redefined so that blocking an opponent in any manner from behind became a violation. The former rule limited clipping to throwing the body across a rival's back below the waist. The penalty for an illegal shift was increased from 5 to 15 yd. Another major change was the increase from 5 to 15 yd. for holding when incurred by a defensive player.

The 1952-53 season had a preview on Aug. 15, when the Los Angeles Rams, defending champions of the National league, defeated the College All-Stars, 10-7, at Soldier Field, Chicago, Ill. The usual number of upsets marked the early college season and as football moved into November only five teams, Michigan State, Georgia Tech, Maryland, Southern California, and the University of California at Los Angeles, remained undefeated and untied among the major colleges. Princeton, with the longest winning streak carried over from 1951, added a 14-0 victory over Columbia and routed Rutgers 61-19, to extend its string through 24 encounters, then met defeat at the hands of Penn on Oct. 11 by a 13-7 count as 40,000 looked on. Penn, after tying a greatly improved Notre Dame eleven, 7-7, and stopping Dartmouth, Princeton and Columbia, was held to a 7-7 deadlock by Navy and then was surprised by a strong Penn State squad, 14-7, in one of the year's upsets. Maryland, with a good record carried over from 1951, swept aside Missouri, Auburn, Clemson, Georgia and Navy to enter the November stretch with 19 consecutive triumphs. Following the setback of Princeton by Penn, Michigan State's Spartans found themselves in possession of the longest winning streak in college football and were rated in every poll as the top team of the nation. Michigan State started its drive with a 27-13 decision over Michigan before 97,239 at Ann



EVAN SLONAC of Michigan State college leaping over fallen players after receiving a pass in the game with Pennsylvania State college played at East Lansing, Mich., Oct. 25, 1952. Michigan State won 34 to 7

Arbor, then toppled Oregon State, Texas Aggies, Syracuse and Penn State for 21 consecutive triumphs. With a month to play, most of the conference races were far from over. Penn, unbeaten by an Ivy league foe, and Princeton, halted only by the Quakers, were still duelling for the Eastern league title. Undefeated and bowl-bound Georgia Tech and Tennessee were pacing the southeastern group and Texas, undefeated in the Southwest conference, appeared on the way to the top of its circuit. Idaho State captured the Rocky Mountain laurels, and Utah and New Mexico were battling for the honours in the Skyline group. Michigan and Wisconsin, with only one loss each in the Western conference, were leading contenders for the Big Ten crown and the right to play in Pasadena's Rose Bowl. Meanwhile two coast titans, Southern California and U.C.L.A., were running unbeaten in an interesting battle for the Pacific coast crown and the opportunity to face the Big Ten winner on Jan. 1, 1953. Oklahoma and Missouri showed the way in the Big Seven and Duke was pacing the Southern conference although pressed by West Virginia, which furnished one of the campaign's upsets when it stopped an improved Pittsburgh eleven, 16-0.

Professional Football.—Close races developed in both the American and National conferences of the National Football league. The Cleveland Browns, although surprised by the New York Giants, 17-9, at Cleveland, Oct. 1, loomed as the champions of the Eastern half of the circuit although New York and Philadelphia had not been eliminated. Detroit, San Francisco and Green-Bay, Wis., were all in the running for the Western crown. With attendance up at the many preseason exhibitions, the league looked for a big year at the turnstiles although the new Dallas club proved disappointing. The Texans, who had replaced the New York Yankees in the National conference, failed to win any of their first eight starts, and drew little support at their home games. The future of the team, which was to finish

its season on the road, was to be decided at the league's convention. (For bowl game scores, Jan. 1, 1953, see p. 16.)

Canadian Football.—Attendance was on the rise in the part of the campaign. The East's Interprovincial Rugby union, popularly known as the Big Four, was paced by the Hamilton Tiger-Cats, with the Toronto Argonauts running second. Toronto and Western shared first place in the race for Canadian collegiate laurels. Vince Mazza, stellar tackle of the Hamilton Tiger-Cats, was the recipient of the Jeff Russell Memorial trophy awarded annually to the most valuable and sportsmanlike player of the Big Four. The schoolboy season was featured by the defeat of a United States eleven to Montreal on Oct. 27, when the Westmount High School team defeated Proctor Academy, Andover, N.H., 22-5. Canadian rules applied to the first half of play and United States rules were followed in the second half.

(T. V. M.)

Great Britain.—*Association.*—England and Wales shared the British international championship by drawing with each other and beating Scotland and Ireland. England's team made a continental tour in which it drew 1-1 with Italy at Florence, Austria 3-2 at Vienna and beat Switzerland 3-0 at Zürich.

In the British amateur international tournament, Scotland was successful, beating England 2-1 at Wembley, Ireland 2-0 at Glasgow and Wales 3-2 at Inverness. Newcastle United became the first club to retain the Football association cup since Blackburn Rovers' two wins in 1890 and 1891. Walthamstow Athletic beat Leyton 2-1 in the Football association amateur cup and Oxford beat Cambridge 2-1 in the university match.

Manchester United provided one of the biggest surprises, losing 0-2 at home in their first game to Hull City, a second division team captained by the veteran H. Carter; but later at last won full reward for being the most consistent side in the country since the war by winning the Football league championship by four points from Tottenham Hotspur, the holders, and Arsenal.

Libernian retained the Scottish league title. In the Scottish competition, the cup went to Motherwell. This was Motherwell's fifth final but only its first victory there. (For association football in the U.S., see the article SOCCER.)

Rugby Union.—The 1951-52 season was made notable by two striking teams, the South Africans in the British Isles and France and the Fijians in Australia.

The South Africans played 31 matches, winning 30, losing 1 to London Counties (9-11) and scoring 562 points against them. The Fijians startled Australia by beating club and state sides by brilliant and ceaseless open attack of the most unorthodox kind and losing once and winning once against the full Australian team. Australia also visited New Zealand and each won one of the two international matches.

Wales won all its four matches in the British home international championship and so won the Triple Crown for the first time. Wales beat England 8-6 at Twickenham, Scotland 10-3 at Cardiff, Ireland 14-3 at Dublin and France 9-5 at Wembley. England, Ireland and France were much inferior to Wales and much superior to Scotland. England beat Ireland by 13-0 in a blizzard at Twickenham, beat France by 22-0 by a try in Paris and beat Scotland 19-3 at Murrayfield. Wales beat France 11-8 in Paris and beat Scotland with 14-0 for 3 parts of the game by 12-8 in Dublin. France won 11-0 at Murrayfield.

Middlesex won the county championship, beating Lancashire in a final at Twickenham. Oxford won its fourth successive trophy over Cambridge in Dec. 1951 by 13-0.

Rugby League.—The New Zealand team which visited Great Britain in the 1951-52 season lost 10 of its 28 matches, including all three tests at 15-21, 19-20 and 12-16. Australia sent a team to England in the autumn and lost the first test 6-19.

France retained the home international title on points averaged over Other Nationalities and England.

Wigan won the Northern Rugby league title for the fourth time since the war and the eighth in all, beating Bradford Northern, which had finished top in ordinary games, by 13-6 in a final. Workington Town in 1951 was the first club outside Lancashire and Yorkshire to win the Northern league title, and in 1952 it became the first outside the two counties to win the Challenge cup, beating Featherstone 18-10 in the final at Wembley. (La. M.)

Ford Foundation: see EDUCATION; LIBRARIES; SOCIETIES AND ASSOCIATIONS, U.S.

Foreign Exchange: see EXCHANGE CONTROL AND EXCHANGE RESERVES.

Foreign Investments. **United States Investments Abroad.**—The value of United States private and government investments in foreign countries amounted to \$36,824,000,000 on Jan. 1, 1952, a rise of about \$10,000,000 over the same date a year earlier. By the end of 1952 their value had probably increased by an additional \$10,000,000 to \$1,500,000,000, reflecting a net outflow of United States private and government long-term capital of \$725,000,000 and \$1,000,000,000, respectively, and the reinvestment of foreign subsidiary earnings. Most of the movement of private capital, \$1,000,000,000, was in the form of direct investments and re-established important U.S. managerial interests in the recipient enterprises. The balance was in portfolio securities involving no important voice in the management of foreign enterprises.

Direct Investments.—The increase in foreign investments in the first half of 1952 roughly paralleled new plant and equipment expenditures in the United States. The high rate of both foreign and domestic investment indicated a continued need for

raw materials and processing facilities. This need was reflected in the flow of capital to Canada.

In 1950 about 38% of the overflow of U.S. direct-investment capital went to Canada. During the next year the proportion rose to 45% and probably was the same or higher in 1952. In dollar terms, the net movement of about \$250,000,000 invested in Canada during the first six months of 1952 was only 10% below the total for the year 1951. Of these sums, probably three-quarters went into petroleum and mining ventures during 1951-52 compared with 65% in 1950.

Although the investment of U.S. and other funds had been vast in the province of Alberta, the production of crude oil during 1952 was held in rein by the lack of adequate transportation. Work was in progress during the year on a partly U.S.-financed \$82,000,000, 24-in. pipe line extending 695 mi. from Edmonton to Vancouver, B.C. This would supplement an earlier U.S.-financed line to the Great Lakes that carried Alberta oil to eastern markets.

In April the Alberta legislature approved the export of natural gas. Shortly thereafter it was announced that a U.S.-financed pipe line costing more than \$110,000,000 would be built to carry the gas from that province to northwestern United States. Meanwhile nearly all the major U.S. oil companies were engaged in expending sizable sums exploring for oil and natural gas in the neighbouring province of Saskatchewan.

In the eastern tip of Canada, U.S. funds were expended on the 360-mi. railroad being built across the rugged area between the St. Lawrence river and Labrador—often in temperatures to -40° F. The rail line, when completed in 1953, would unlock a vast area of rich iron ore which U.S. stockholding firms in the enterprise intended to purchase.

Continued investments were also made in the development of lightweight metals. The U.S. investment in a major titanium mining, smelting and transportation project appeared to have been completed during 1952. During the second half of the year, Aluminum Company of America announced its intention to build smelting and electric-power facilities in the Canadian northwest, the cost of which might run from \$400,000,000 to \$700,000,000. Relatively cheap electricity produced by water power would be used to smelt aluminum from ore brought by ship from South America. The raw aluminum would then be shipped to the United States for processing.

Celanese Corporation of America, the world's largest producer of yarns and fibres made from cellulose acetate, announced in 1952 that in addition to its Canadian pulp-making operations it would process the pulp in Canada into flake and yarn. In this and in other ventures the company and others might invest approximately \$100,000,000.

In addition to these large and frequently spectacular projects, United States-controlled enterprises made investments in many other enterprises in Canada, particularly in manufacturing. These included electronics equipment, television sets, materials-handling and road-building machinery, aluminum building products, flour mills, fish processing and a mail-order business and retail-store chain.

It was believed that the inclusive United States ownership of Canadian industry—mining, petroleum, public utilities, railroads, merchandising and manufacturing—was probably less than one-quarter of the total investment in these industries in 1952. United States investments in Canadian manufacturing rose from about \$950,000,000 in 1926 to \$2,300,000,000 in 1951 and were at their highest point in history in 1952. The existence of this stake and the addition of annual new investments contributed to an increase in the volume of merchandise exchanged by the two countries.

The flow of United States direct investment capital to Latin

Table I.—Estimated Value of United States Investments Abroad, January 1, 1952

(In millions of dollars)

Type	Total	O.E.E.C. countries	O.E.E.C. dependencies	Other Europe	Canada	Latin-American republics	All other countries	International institutions
Total	36,824	12,785	640	1,185	8,040	7,198	3,171	3,805
Private	22,940	4,350	606	675	8,026	6,660	2,260	363
Long-term	21,175	3,899	586	602	7,797	5,956	1,972	363
Direct	14,889	2,483	564	357	4,349	5,504	1,632	—
Foreign Dollar Bonds	2,082	80	—	7	1,291	166	175	363
Securities payable in local currencies	2,480	374	—	38	1,984	26	58	—
Other	1,724	962	22	200	173	260	107	—
Short-term	1,765	451	20	73	229	704	288	—
Deposits	447	208	6	36	108	56	33	—
Other	1,318	243	14	37	121	648	255	—
U.S. Government	13,884	8,435	34	510	14	538	911	3,442
Long-term	13,536	8,181	31	506	9	529	838	3,442
Short-term	348	254	3	4	5	9	73	—

Source: United States Department of Commerce.

Note: No allowance has been made for direct investments damaged during World War II, written off, or expropriated without compensation. Holdings of portfolio securities of former enemy countries, or countries where no realistic valuations were obtainable, have been excluded.

America approximated \$175,000,000 during the first six months of 1952 compared with \$187,000,000 for all of 1951. Important additions were made in manufacturing in Brazil and Mexico, in distribution in the latter country, in copper-refining capacity in Chile, in iron-ore mining in Venezuela, and in international shipping and tanker companies flying the Panamanian flag.

Among the investment actions receiving publicity were: an announcement in May that a group of independent oil companies in Texas was prepared to invest \$40,000,000 in developing Bolivian oil, a new oil act that gave Peru a 50-50 share of all profits from oil produced by foreign interests, and the likelihood that the American Smelting and Refining company would invest \$75,000,000 in copper mines in the same country. In July that company announced the suspension of its copper-mining subsidiary in Bolivia, citing prolonged unsatisfactory labour relations and a poor economic outlook as the reasons.

At the beginning of 1952 investors were considerably disturbed by a Brazilian presidential decree that the law affecting the export of profits from that country had been misinterpreted. Pres. Getulio Vargas stated that while earnings equal to 8% of foreign capital could be exported, earnings over that figure had been erroneously allowed to be added to original investments by the Bank of Brazil and later remittances of profits figured on that increased capital.

Under the decree, reinvested earnings (more than 8% of foreign capital) were regarded as capital not enjoying the right of repatriation (20% a year of foreign capital may be repatriated) and could not be taken into account in figuring remittances. Moreover, all past remittances of income exceeding 8% of invested foreign capital must be deducted from future remittance quotas. The right to future remittances was lost by enterprises whose past remittances had exceeded their foreign capital plus the 8% relative to earnings.

President Vargas claimed that of about Cr.\$ 25,100,000,000 of foreign capital registered with the Bank of Brazil in 1950, only Cr.\$ 9,400,000,000 could be considered as capital actually brought into the country and that the balance represented profits which were not remitted and which had been incorporated into capital. The official rate for the cruzeiro had been 5.4406 cents (U.S.) for a number of years. The United States department of commerce estimated that income received from U.S. direct investments in Brazil was about \$83,000,000 in 1951. If enforced, the 8% limit as expressed by President Vargas would have reduced this figure considerably.

To meet the problem faced by investors, the Brazilian government prepared a bill during the summer of 1952 that was designed to solve the question of taking profits on foreign investments out of Brazil, by providing a free market in foreign exchange parallel with the official one in which the rates were rigidly controlled. Under this bill foreign capital, profits and

dividends could be traded in the new market while, U.S. nationals reported to have made investments in Brazilian manufacturing in the first 1952. However, it was known to what extent blocking of remittances reflected in these figures.

United States investments in other countries also increased in the first half of 1952, compared with the previous period, petroleum development being as one of the chief

tions. The Indian ambassador to the United States, Biju Pan Sen, urged U.S. investments in India. The first type of investment in India that the ambassador outlined envisioned participation in consortia, supporting various Indian industries rather than the same industries in which the U.S. company was involved at home. Participation either should be in finance or the supply of goods, he said, recommending government participation as a guarantee of confidence.

The ambassador was also reported to have recommended formation of an investment company in which both U.S. and Indian capital would participate initially on a 70%-30% basis. He suggested that at the end of a ten-year period the proportion might shift to 30% U.S. capital and 70% Indian.

Liquidations.—Two U.S. oil companies were reported to have withdrawn their interest in commonly owned refinery and petroleum distribution facilities in Argentina and sold the properties to the Argentine government for \$5,400,000. In Egypt the remaining U.S. company engaged in the exploration and development of small oil fields stepped up its efforts to produce crude oil. The company announced that a 1948 Egyptian law was too restrictive. Under that law 51% of the stock of foreign oil companies must be Egyptian owned. Furthermore, the law provided no guarantee that a company that had done exploration work and located a petroleum field would necessarily be permitted to develop it. U.S. companies retained their distribution facilities in Egypt.

After 30 years of business, a U.S. life insurance company ceased business in Guatemala, except to care for policyholders, because it was unable to meet the requirements of a new insurance law. Mexican interests purchased a U.S. air line in that country in what was described as a multimillion-dollar deal. In Chile proposed legislation sought to finance the nationalization of U.S.-owned electric light and power by special surcharges on power consumers. During 1951 petroleum interests offered to sell 40% of the stock of a Guatemalan distributing company to local investors. Shortly thereafter it was announced that about \$400,000 of shares had been sold to local institutions and small investors.

Investment Guarantees.—In August the U.S. government announced through the Mutual Security agency that U.S. companies were exhibiting a marked increase in interest in foreign investments in countries where they could not be insured by their own government against loss by expropriation or blocked exchange. At the time of the announcement, foreign countries participating in the Mutual Security program had signed formal agreements with the U.S. government in which they would not expropriate capital investments of its nationals, nor would they withhold their earnings by any form of exchange control. Two others had limited their agreements to the field of exchange control only. Shortly thereafter

tual Security agency extended its currency-convertibility guarantee program and its insurance against expropriation losses to investments made in Yugoslavia.

The agency further stated that from the inception of the program in 1948 it had taken in about \$500,000 in premiums from the 40-odd companies that had purchased insurance on nearly \$10,000,000 of investments and that no payments on claims had been made. The insurance coverage was concentrated on currency convertibility, only two companies having taken out insurance against expropriation.

Portfolio and Miscellaneous Investments.—The net investment of \$165,000,000 in foreign dollar bonds and in other securities and indebtedness of foreigners during the first half of 1952 was somewhat below the annual rate for 1951. Purchases of Canadian bonds may have reflected a change in the basic situation prevailing since the fall of 1950 which had favoured the purchase of Canadian securities in the United States. The rise in the Canadian dollar to a premium rate of more than three cents above the United States dollar during the first five months of 1952 made borrowing in the United States less attractive, because the proceeds in Canadian currency for every United States dollar borrowed had declined.

Holders of defaulted bonds issued by other foreign countries were encouraged during the year by German and Japanese steps to restore their credit standing. Representatives of the Japanese government negotiated with British, French and United States bondholders' groups in New York city on Japan's external indebtedness, including dollar bonds of approximately \$1,000,000 of face value and accrued interest of about \$50,000,000 on these bonds which had been in default since shortly after the attack on Pearl Harbor.

Negotiations between representatives of the German government and its creditors were held in London on a considerably larger volume of German government, municipal and corporate bonds in default since the depression of the 1930s. However, a large portion of Germany's dollar debt was no longer held by United States investors, having been repatriated at great losses by investors during the depression. The complicated negotiations were interrupted at one point when the U.S. negotiators walked out of the conference over a disagreement regarding the settlement of the Dawes and Young loans.

Some of the terms of the agreement reached in August for the settlement of the German debts were as follows:

1. In most cases there was no reduction of original principal payments.

2. In the main, future interest rates were somewhat reduced from those provided in the original contracts.

3. Arrears interest was to be reduced, except for obligations to the Reich government which would be funded at contractual rates only to the extent of their accumulation to the end of the year.

4. Amortization of principal of most of the debts would be deferred after five years and maturity dates for most debts were extended.

5. Provision was made for more rapid repayment of capital interest in certain types of debt, if these were to be made in blocked deutschmarks which could be utilized for investment in Germany.

Other developments during the year included sales to the public of shares of investment companies with portfolios of Canadian securities. This development—that of indirectly purchasing a diversified list of foreign securities through a U.S. company—has been watched with interest in investment circles. In June 1952 the remaining \$4,800,000 of a \$50,000,000 loan granted to that country by the International Telephone and Telegraph corporation and used as part payment for the com-

pany's properties sold to the Spanish government in 1945.

Earlier in the year the Foreign Bondholders Protective Council, Inc., announced its approval of the announced terms of a proposed revision of the Peruvian government's debt settlement of five years earlier to which the council had objected. Under the revised terms maximum interest rates were to be raised from 2½% to 3% and back interest scrip amounting to about \$90 per \$1,000 bond was to be paid to present bondholders.

In addition to proposing a settlement of debts as a means of attracting foreign capital, Japan revised the foreign investment law of 1950 during 1952. As amended, the law incorporated a number of changes favourable to foreign investors. These included provision for the full remittance of dividends and interest, the remittance of principal and capital gain from share purchases within six years and a day after an investment was made, the switching of investments, and the protection of for-

DRILLERS preparing the right of way for a railroad being built in 1952 to carry iron ore from Ungava, on the Quebec-Labrador border, to Seven Islands on the St. Lawrence river. The railroad was being jointly financed by steel and mining companies of the U.S. and Canada



Table II.—Estimated Value of Foreign Investments in the United States, Jan. 1, 1952

Type of Investment	(In millions of dollars)							
	Total	O.E.E.C. countries	O.E.E.C. dependencies	Other Europe	Canada	Latin-American republics	All other countries	International institutions
Total	21,166	9,395	410	233	3,318	2,547	2,482	1,964
Private	15,723	8,394	326	215	2,342	2,356	1,948	142
Long-term	9,092	5,758	215	126	1,813	857	317	6
Direct	3,499	2,272	18	25	967	141	76	—
Corporate stocks	3,684	2,305	91	25	673	445	145	—
Corporate bonds*	428	279	22	25	33	53	10	6
Other	1,481	902	84	51	140	218	86	—
Short-term	6,631	2,636	111	89	529	1,499	1,631	136
Deposits	5,783	2,171	105	62	497	1,328	1,543	77
Other	848	465	6	27	32	171	88	59
U.S. government	5,443	1,001	84	18	976	191	534	1,822
Long-term	738	327	35	15	—	80	31	250
Short-term†	4,705	674	49	3	976	111	503	1,572

*Corporate bonds include about \$100,000,000 of state and municipal obligations.

†Includes U.S. currency and coin held abroad with an estimated value of \$817,000,000 which cannot be distributed by area.

Source: United States Department of Commerce.

eign investors in new-issue transactions threatening the dilution of their equity. During the year dividend yields were reported at about 15% to 20% of market prices on the Japanese chemical, shipbuilding, metals, machinery and textile shares held by a U.S. investment banking firm.

United States Government.—Long-term loans of the United States government to foreign countries totalled \$331,000,000 in the first half of 1952, the outflow of \$141,000,000 in the first quarter alone equalling the total for all of 1951. The increase reflected larger credit advances to foreign countries under the Mutual Security program of that government than had taken place under the European Recovery program in 1951.

Income from Investments.—Earnings on United States investments in foreign countries approximated \$2,700,000,000 in 1951 the U.S. department of commerce announced in Aug. 1952. Of this sum about \$2,000,000,000 was calculated in the United States balance of payments as income received. A total of \$700,000,000 of foreign subsidiary earnings remained abroad for reinvestment and an unspecified portion of the income received from branches abroad was also returned, as new investments. From indications available early in 1952 receipts from abroad for the year were expected to exceed 1951.

The vast bulk of earnings were accounted for by direct-investment company earnings of about \$2,300,000,000 which reflected the rapid postwar development of production facilities abroad and the great expansion in output that was achieved. Increased rates of return, related to high demands for the products which these facilities were able to satisfy, and the rise in the general price level contributed to the rise in earnings since World War II.

Oil company profits reflected the rapid replacement of Iranian oil by increased production by U.S. companies abroad. Production of crude oil by the major U.S. companies abroad, which had averaged 1,800,000,000 bbl. per day in 1950, rose to an average of 2,400,000,000 bbl. per day for the last half of 1951. The increase in earnings of the companies in that year was reported as directly proportional to the increase in production. One of the companies involved, Standard Oil company (New Jersey), reported that approximately \$320,000,000 or 60% of its consolidated net income in 1951 was earned by subsidiaries operating outside the United States. Several additional foreign countries asked for an increase in their share of profits to a 50% basis during 1952 on oil and mining concessions that had been earlier granted to U.S. firms.

Foreign Investments in the United States.—The value of foreign investments in the United States on Jan. 1, 1952, of \$21,166,000,000, showed little change from a year earlier, rising by about \$100,000,000 during this period in contrast with an increase of \$2,600,000,000 for 1950.

During the first six months of 1952 a noticeable change in value resulted from a rise of \$730,000,000 of foreign short-term claims on the United States.

Short-Term Investments.—During a portion of the first quarter of the year foreigners suffered losses of gold and dollars to the United States, continuing this characteristic of the short-run turbulence of international economic relationships from mid-1951. With a marked increase in U.S. exports during the whole of the first quarter of the year the export surplus of the U.S.

reduced and on balance foreigners increased their short-term claims on the United States by \$168,000,000, although \$557,000,000 of gold to the U.S. treasury. The improvement in international economic relations that became evident in May was reflected in further increases of about \$560,000,000 of foreign banking balances and other short-term assets in the second quarter although the United States acquired somewhat in excess of \$100,000,000 of foreign gold in this period. The gold losses were mainly by Great Britain, the United Kingdom accounting for \$520,000,000 of the \$557,000,000 so that the United States by foreigners in the first quarter of the year.

The rise in banking claims on the United States in the first six months, on the other hand, was shared in by a large number of countries, reflecting the relative strength in their international economic relations at that time. Details available for the first five months of the year showed that of a total increase of \$560,000,000, \$189,000,000 was for Canadian accounts, the United Kingdom accounted for \$114,000,000 of a total of \$139,000,000 for Europe, Venezuelan and Cuban balances each rose about \$67,000,000, and Japan's increase of \$130,000,000 comprised the bulk of the rise of \$214,000,000 for Asia.

The rise in Japanese balances was mainly the result of an agreement by the United States to pay, beginning July 1, approximately half of the expenditures of the U.S. army in Japan in dollars, and of the continued large purchases of goods and services by the armed forces for use in the Korean operations. In connection with Japan's intention to resume settlement on its international obligations (referred to earlier), about \$500,000,000 was set aside for this purpose by the Japanese government with the Federal Reserve Bank of New York. In May the National City Bank of New York granted a \$20,000,000 loan to Spain guaranteed by gold, thereby temporarily, at least, increasing Spanish balances in the United States. During the third quarter of the year the Mutual Security agency gave a \$200,000,000 advance to France with the same effect on French balances.

During the first portion of the year the U.S. treasury department was reported in the press to have blocked the dollar in that country of east Germany, a number of west German enterprises, and two leading Swiss banks in actions aimed at avoiding financial transactions by which the funds were procured to procure materials for Communist China and North Korea from western Europe and South America. The action was denied in Switzerland and high resentment was reported in Swiss stock exchange quarters. In mid-June a decline in the dollar-franc rate in Zurich from 4.33½ Swiss francs to the 4.30½ was reported in the press as attributed largely to anxiety over possible further blocking by the U.S. treasury. The average rate for Swiss francs in New York was 23.138 cents in June, a slight rise for the month.

Long-Term Investments.—Aside from liquidations of \$100,000,000 of U.S. government securities, foreigners engaged

relatively small transactions in long-term investments in the United States during the first half of the year. Both the turnover and net sales of securities were at a reduced volume from the previous six months. On the other hand, several potentially large direct investments were announced.

The chairman of Bowaters Newfoundland Pulp and Paper Mills announced that a \$51,500,000 newsprint and kraft mill would be built in southern Tennessee. The plant would have an initial annual capacity of approximately 130,000 tons of newsprint and 50,000 tons of kraft sulphite and was designed essentially to meet the newsprint shortage in southern states. Courtaulds Ltd., which in 1941 sold the American Viscose corporation to U.S. interests to provide Great Britain with sorely needed dollars, announced that it planned a comeback in the United States. The new company, Courtaulds, Inc., planned to produce 50,000,000 lb. of viscose rayon staple a year.

While U.S. firms were actively developing oil properties in Canada, Canadian firms were purchasing oil lands in the United States. The New Continental Oil Company of Canada, Ltd., was reported to have paid \$6,000,000 for land and 35 producing oil wells in Texas. Other Canadian interests were engaged in transactions in the United States section of the Williston basin, mainly in Montana. Canadian interests were also reported ready to acquire prospective oil lands in northern Wyoming.

In July the British firm of Ferranti Electric Ltd., through its U.S. subsidiary of the same name, won a U.S. army award for power transformers for a dam in North Dakota with a bid totalling more than \$1,100,000. Under the Buy America act, foreign bids may be accepted automatically if they are more than 25% below the lowest U.S. bid.

Income from Investments.—Total foreign earnings on investments in the United States were about \$540,000,000 in 1951 while income payments to foreigners were just under \$400,000,000, the difference being undistributed earnings of direct-investment subsidiaries. While only meagre data were available for 1952, it appeared that income payments would be higher than in 1951. (See also EXCHANGE CONTROL AND EXCHANGE RATES; EXPORT-IMPORT BANK OF WASHINGTON; INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT; INTERNATIONAL MONETARY FUND.) (M. AB.)

Foreign Loans, U.S.: see UNITED STATES: *Foreign Credits of the United States Government.*

Foreign Ministers' Conferences: see EUROPEAN UNION; NORTH ATLANTIC TREATY ORGANIZATION.

Foreign Missions: see MISSIONS. FOREIGN (RELIGIOUS).

Foreign Trade: see INTERNATIONAL TRADE.

Forests. **United States.**—In the report of the President's Materials Policy commission (*q.v.*), issued in June 1952, forest products were grouped among important production materials that are scarce in relation to their potential use. Total consumption of forest products in the United States had declined during the half century since 1900, although the population doubled during this period and the consumption of minerals increased sixfold. One of the reasons for decreased use of lumber, the report said, had been dwindling domestic supplies. Most of the country's virgin timber had been felled. New growth on the cutover areas was running behind the annual output of saw timber. The consequent higher costs, reflecting both market scarcity and costs of replacement, had edged timber out of uses to which it was well adapted, and exhaustible materials had taken the place of renewable timber because they were cheaper.

"The extent to which new growth of timber can be brought to balance with consumption will depend importantly on how

well forest land is managed and how efficiently its products are used," said the commission's report. "There is still plenty of land for trees to grow on. About 460 million acres—roughly one-quarter of continental United States—are suitable and available for producing commercially valuable crops of timber. . . . Only in the last 50 years has the United States begun to treat forests as renewable. Annual growth of saw timber still is less than half enough to meet current requirements and future demand on a sustained-yield basis."

The President's Materials Policy commission, headed by William S. Paley, was appointed by Pres. Harry S. Truman to study the long-range materials problem of the United States and its relation to future needs. Its recommendations with respect to forest resources called for increased attention by the federal government, in co-operation with the states, to reforestation and to the protection of forest lands from fire, insects and diseases. Also recommended were an expansion of technical assistance to small-scale woodland owners and timber processors, and a national system of forest credit and forest insurance. Construction of access roads was recommended to open up federally owned commercial timber lands in the western states. The report called upon the federal government to assist the states in establishing systems of compulsory regulation to prevent destructive timber cutting and said that if, after a period of years, serious gaps remained in state systems of regulation, the federal government should establish minimum cutting regulations. To relieve tax pressure toward premature cutting, it recommended that the states substitute yield taxes for ad valorem taxes on timber.

A serious epidemic of Engelmann spruce beetle was reported in the northern Rocky mountains in the summer of 1952. The insect outbreak was the result of violent windstorms in 1949 which damaged great numbers of trees and provided favourable conditions for development of the beetles. Logging operations were accelerated to salvage as much of the infested timber as possible. In Colorado, a control program started in 1950 against an epidemic of the same species of insect appeared to have been successful. Beetle infestations in 1952 were greatly reduced. Control operations against an outbreak of southern pine beetle in Mississippi were started during the year.

Richard E. McArdle became chief of the United States forest service July 1, 1952. He succeeded Lyle F. Watts, who retired after nearly 40 years of governmental forestry service, including 9 years as U.S. chief forester. (C. E. R.)

Canada.—During 1952 the woodlands section of the Canadian Pulp and Paper association announced it would "engage on a major effort to grow more and better trees" to expand wood fibre supplies. The federal government's eastern Rocky mountain conservation project, covering 8,618.74 sq.mi. in Alberta, was improved by increasing the money available annually for maintenance and by extending the time of the \$6,300,000 capital expenditure program, which by 1952 saw the completion of 16 forest fire lookout towers equipped with short-wave radio and a fair start at building suitable access roads. The federal government signed an agreement with British Columbia for co-operation in reforestation and for a forest inventory, and an agreement with Prince Edward Island for reforestation.

New Brunswick suffered a serious infestation of spruce budworm, and a special aerial spray project covered 300 sq.mi. in June. By September surveys indicated that between 4,000 and 5,000 sq.mi. in addition were affected, and four major pulp and paper companies joined forces to form the Forest Protection company to combat the threat; five airfields were constructed and 1,560 sq.mi. were scheduled for spraying in 1953. Pulp and paper companies in Quebec planted 811,539 trees in reforestation projects. Ontario's forest inventory, begun in 1946,

neared completion, and the government announced a program of sustained yield beginning with crown lands forests; a new policy involved a charge of 1.4 cents each for Scotch pine and 1 cent each for other nursery seedlings, which had formerly been free. The provincial forestry branch of Saskatchewan planted 255,000 trees, mostly in the Fort à la Corne forest; a forestry survey revealed that the province might have approximately 30,000,000 cords of standing softwood suitable for pulping in its north-eastern parts.

(C. Cy.)

Great Britain.—The Forestry act, 1951, which came into force in Oct. 1951, prohibited the felling of any growing tree over a given diameter without a licence and brought about a fundamental change in British forestry by giving the commissioners powers to attach replanting conditions to a felling licence. The commissioners were also empowered to require an owner to thin a neglected plantation or to fell blocks of trees which were deteriorating.

For the year ending Sept. 30, 1952, the maximum amount of timber licensed for felling was 26,000,000 cu.ft. broadleaved and 7,100,000 cu.ft. conifers. In spite of increased government grants for planting and maintenance, the total acreages planted by private owners and by the state were estimated to be only about half the allotted program for 1952. Labour shortages and the difficulties in acquiring sufficient plantable land were stated to be the chief obstacles to adequate state planting. Experiments with selective weed killers were carried out in research centres, particularly in the suppression of fast-growing weeds in forest nurseries and young plantations.

Commonwealth.—The British Commonwealth Forestry conference was held at Ottawa, Ont., in Sept. 1952 and was attended by leading representatives from Great Britain and all parts of the commonwealth. The agenda covered all aspects of forestry, including policy, silviculture, management, protection, utilization and research activities. The delegates crossed Canada to the Pacific coast, visiting maritime, prairie and mountain forests en route.

New Zealand was faced with the problem of the extraction and utilization of the thinnings from extensive areas of young coniferous plantations, particularly *Pinus radiata*. An important project known as the Murupara scheme was launched for an integrated sawmilling, timber pulp and newsprint industry to be established in the vicinity of the Kaingaroa State forest. It was expected that the project would require about 23,000,000 cu.ft. of logs a year and that the logging problems involved would require new methods of exploitation; mechanical cableways were being considered. The National State survey of New Zealand's indigenous forest resources was extended during 1952, and sustained yield management was introduced for certain indigenous forests, notably those of *Nothofagus*.

An inter-African forestry conference was convened, by the Commission for Technical Co-operation in Africa, at Abidjan on the Ivory Coast and attended by delegates from all African forestry departments.

In Tanganyika the government directed that an additional 17,500 sq.mi. of forest should be reserved by 1960, and a considerable increase in the forestry staff was sanctioned to hasten the survey of the very large areas of still unchartered forests.

In Gambia the reservation of forests was started with the demarcation of 25 forest parks, averaging 1,000 ac. each, but the legislative council rejected the usual designation of "forest reserves" for these areas.

In Northern Rhodesia, where protection against forest destruction and degradation of the soil was one of the greatest problems of the forest department, a new forest policy was formulated in which one of the essential operations was to be the early burning, under control, of the grass and forest litter

to prevent the more serious fires and damage that occur when the annual burning is delayed until late in the dry season.

In British East Africa, particularly in Kenya and Tanganyika, the planting of exotic conifers was continued as the most economic means of growing the maximum volume of marketable timber on a given area.

In British West Africa, particularly in Nigeria, the use of mechanical equipment increased the extraction and conversion of timber, and the sawmills and plywood factories reached a high standard.

In Sarawak measures were taken under the Forest Ordinance to increase the control of forest areas by formation of permanent forest reserves. It was estimated that shifting cultivation was destroying the forests at the rate of about 100 sq.mi. a year.

In Fiji systematic forest management started, 76 sq.mi. of mangrove forests being controlled on a regular rotation for firewood production, but the forest reserves were still limited.

In British Guiana, detailed topographical surveys and timber enumerations in the large forests of the Crown corporation concessions were completed, and systematic fellings could be carried out under silvicultural control.

An experimental attempt was made to extract crabwood from above the Camaria falls on the Cuyuni river, but losses were heavy and only 490 logs were delivered to the mills from 100 floated through the falls, so the operation was suspended. It was considered that about 14,000 sq.mi. of forest in the interior of the colony could be considered economically accessible and would be sufficient to provide for the needs of the timber industry for 25 years.

Local forest resources in Ceylon were developed by modern methods through the assistance of the Food and Agriculture Organization of the United Nations (F.A.O.). Plans were made to open up large previously inaccessible forests in order to produce the large quantities of timber still being imported to meet the country's needs.

Similar developments were taking place in the Chittagong hills in East Pakistan.

In Cyprus a new £50,000 forestry college at Prodomos was opened for Cypriot and Arab forestry students. This college would serve the needs of the whole middle east area.

Although many members of the forestry staff in Malaya were still engaged on full-time emergency duties, steady progress was made. The Forestry Research institute continued its work under considerable difficulties, and the forestry school was enlarged to include students from Borneo.

In North Borneo the monopoly held by a timber company since 1920 was terminated, but new concessions were granted with special safeguards for systematic work and forest conservation.

Europe.—The F.A.O. again gave technical and financial assistance in forestry, particularly in Austria and Yugoslavia. The Austrian government was given help in reafforestation and the construction of forest access roads and cableways for logging.

Forest experts were sent to Yugoslavia to advise on modernizing of timber extraction and processing methods and also to install a forest products research laboratory at Zagreb. (See also LUMBER.)

(A. H. Li)

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Formosa. (TAIWAN). Formosa is a large island in the western Pacific, separated from China to the west by the Straits of Formosa and from the Philippines to the east by the Bashi and Balintang channels. Area 13,906 sq.mi.

cluding the Pescadores and 75 neighbouring islands. Population (est. 1951) 10,000,000, including Chinese nationalist troops and fugees from the mainland.

The capital is Taipei (or Taipeh, formerly Taihoku) (pop. 1,077,777 in May 1950); other municipalities are Kaohsiung (formerly Takao) (275,563); Tainan (229,452); Tai-chung (formerly Taichu) (207,009); and Chilung (or Keelung, formerly Irun) (145,240).

The principal religions are Buddhism, Confucianism and Taoism. Governor in 1952 was K. C. Wu.

History.—Formosa, the only territory remaining in the control of the Chinese nationalist government after the successful advances of the Chinese Communists on the mainland, was converted into a nationalist military stronghold in 1949 and 1950. To assist the nationalist government in the defense of Formosa, the United States established the U.S. military assistance advisory group on May 1, 1951, under the command of Maj. Gen. William C. Chase. It was reported in March 1952 that the United States planned to double the size of its military assistance group from the 360 officers and men then on Formosa in order to speed the training of 500,000 Chinese troops for defense of the island. The possibility of these troops participating with United Nations forces in the Korean conflict was voiced from time to time during the year, but training for the defense of Formosa remained the objective of the U.S. military assistance program.

Education.—In 1949 there were 1,199 primary schools with 900,648 pupils; 206 intermediate schools (middle, normal and vocational) with 114,616 students; and 6 higher schools (1 university and 5 colleges) with 5,905 students. The literacy rate in 1951 was estimated to be 60%.

Finance.—The currency is the new Taiwan dollar, issued in June 1949. A dual exchange-rate system was instituted on April 10, 1951, providing a foreign exchange certificate rate and an official exchange of NT 1.65 and NT \$10.30 respectively to U.S. \$1.00. Certain transactions on the government account, as well as certain specified private transactions, were accorded preferential treatment. On April 30, 1952, the total note issue was about NT \$565,000,000. Total revenue of the central, provincial and local governments in 1952 was estimated at NT \$2,428,000,000. Expenditures were NT \$2,715,000,000. Total bank deposits at the end of May 1952 were NT \$1,429,000,000.

Trade.—Formosa had a favourable trade balance in 1951 including U.S. aid, with exports totalling U.S. \$98,200,000 and imports U.S. \$50,500,000. In the first six months of 1952, Formosa had total exports U.S. \$69,400,000 and imports of U.S. \$59,000,000. The chief export in 1951 were sugar, 283,500 metric tons valued at U.S. \$56,400,000, and rice, 84,900 metric tons valued at U.S. \$13,000,000. Japan was the major destination of Formosa's exports and the major source of its imports in 1951. Authorizations by E.C.A. (later M.S.A.) for assistance to Formosa in 1951 totalled U.S. \$113,000,000. In the first five months of 1952, these authorizations totalled U.S. \$25,000,000 and the initial authorization for the fiscal year beginning July 1, 1952, totalled U.S. \$50,000,000.

Transportation and Communications.—In 1951 there were about 925 mi. of government railroads, as well as about 1,625 mi. of sugar plantation roads, 250 mi. of forestry railroads and 250 mi. of push-car lines serving various agricultural areas. Average daily freight hauls were 100 metric tons and the average daily passenger load was 201,000 during the first eight months of 1951. There were about 16,380 mi. of roads, including 3,380 mi. of main highways. As of mid-1951 there were more than 18,000 telephone subscribers on the island.

Agriculture.—Agricultural production in the 1951-52 crop year in metric tons amounted to: rice (brown) 1,480,000; raw sugar 553,400; pineapples 42,200; bananas 102,300; citrus fruits 27,500; coconuts 7,800; jute 10,000; sisal 3,000; ramie 1,000; sweet potatoes 2,500; peanuts 60,000; wheat 20,000; barley 2,200; corn 3,000; millet 5,000; cassava 120,000; beans and peas 11,000; and fish 77,000. The developed area in 1952 was estimated at 3,180,000 ac., of which 80,000 ac. were privately owned. Of the latter, 2,060,000 ac. were under cultivation.

Industry.—Estimated industrial production in 1951, in metric tons, amounted to: coal 1,657,000; black iron sheet 1,215; cement 389,000; paper and pulp 28,000; chemical fertilizers 110,000; aluminum 5,543; cotton 284,000; cotton yarn 7,179; and cotton cloth 56,643,000 yd. In the first six months of 1952 industrial production, in metric tons, amounted to: black iron sheet 876; cement 203,000; paper and pulp 12,500; chemical fertilizers 58,200; salt 247,000; gasoline 43,000 kl.; diesel oil 100 kl.; fuel oil 70,000 kl.; copper (electrolytic) 344; caustic soda 26; chlorine 871; and hydrochloric acid 1,330. In the first six months of 1952, 654,000,000 kw.hr. of electric power were generated.

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Foundations: see COMMUNITY TRUSTS; SOCIETIES AND ASSOCIATIONS, U.S.

Four-H Clubs. Membership of boys and girls in the 4-H clubs of the United States reached 2,004,139, its highest figure, in 1952. Each boy or girl who joins a 4-H club undertakes a project, that is, some farming or home-making activity to be carried out according to the latest scientific methods at a member's home under the guidance of the county extension agents and the voluntary local leaders trained by the agents. In 1952 the members completed an average of about one and one-half projects per member. More than 78% of all projects undertaken during the year were completed. Completion of a project includes doing the actual work involved in growing the crop or animal, in performing the home-making tasks or whatever the project comprises, supplemented by keeping records of labour and cost, making an exhibit of the things produced in the project work and writing an account of what was done.

During the year more than 292,000 adults served as voluntary leaders, a considerable number of them former 4-H club members themselves. County extension agents held 61,072 training meetings, helping to prepare these leaders for their work.

The age limits for 4-H club members are usually from 10 to 21 years, with some variation in different states. As in previous years, the highest enrolment by age was in the 10- to 14-year groups. Membership in the 4-H clubs is voluntary.

Interest of other countries in the methods followed in the conduct of 4-H club work in the United States continued. Co-operative extension workers and 4-H members in a number of states were visited by representatives of rural youth organizations in other countries who spent from three to six months studying methods in various parts of the United States. A number of co-operative extension service employees spent some time in other countries, on their invitation, to discuss rural youth extension work.

The 4-H club work is a part of the educational program in agriculture and home economics of the co-operative extension service in which the U.S. department of agriculture, the state agricultural colleges and the county governments participate.

(M. L. W.)

Fowler, Henry H. (1908-), U.S. government official, was born on Sept. 5 at Roanoke, Va. He took his B.A. degree at Roanoke college in 1929 and his LL.B. at Yale university school of law in 1932; the next year he received his J.S.D. at Yale. He was admitted to the Virginia bar in 1933 and from 1934 to 1938 was an attorney for the Tennessee Valley authority. In 1939 he became assistant general counsel of the TVA and special assistant to the U.S. attorney general. In 1941 he was appointed assistant general counsel of the Office of Production Management, and from 1942 to 1944 he held a similar office with the War Production board. Later in 1944 he was appointed a staff member of the Foreign Economic administration, with the special task of estimating the remaining military and economic capabilities of Germany. Fowler returned to private law practice in 1946, at Washington, D.C. In Sept. 1951 Pres. Harry S. Truman appointed him deputy administrator and in Jan. 1952 head of the National Production authority, and on May 7, 1952, Fowler was appointed administrator of the Defense Production administration, effective June 1. On Sept. 5, 1952, President Truman named Fowler to the principal U.S. mobilization office, director of defense mobilization, to succeed John R. Steelman, acting director.

France. A republic of western Europe, France is bounded north by the English channel, northeast by Belgium and Luxembourg, east by Germany and Switzerland, southeast by Italy, south by the Mediterranean sea, southwest by Spain

and west by the Atlantic ocean. Area: 213,010 sq.mi., including the Mediterranean island of Corsica (3,367 sq.mi.) and small Alpine territories ceded by Italy in 1947 (273 sq.mi.). Pop.: (1946 census) 39,829,838; (mid-1952 est.) 42,239,000. Language: French is almost universally spoken but there are also other regional languages or dialects: German in Alsace and part of Lorraine; Breton in Brittany; Flemish in the northern corner of the Nord *département*; Provençal in the Alpes Maritimes, Basses-Alpes, Var and Bouches-du-Rhône *départements*; Catalan in Roussillon (Pyrénées-Orientales); Basque south of Bayonne; and Italian in Corsica. Religion: mainly Roman Catholic with c. 1,000,000 Protestants and more than 230,000 Jews. Chief towns (pop., 1946 census): Paris (cap.; 2,725,374); Marseilles (636,264); Lyons (460,748); Toulouse (264,411); Bordeaux (253,751); Nice (211,165); Nantes (200,265). President of the republic, Vincent Auriol; premiers in 1952, René Plevén, Edgar Faure and (to Dec. 23) Antoine Pinay (*q.v.*).

History.—During 1952 France had three premiers. René Plevén (Union Démocratique et Socialiste de la Résistance), who had come into office on Aug. 8, 1951, resigned on Jan. 7; Edgar Faure (Radical) was elected on Jan. 18 and resigned on Feb. 29; Antoine Pinay (independent) was elected on March 6. Neither Faure nor Pinay had been premier before.

Robert Schuman (M.R.P. or Mouvement Républicain Populaire) was foreign minister and Charles Brune (Radical) minister of the interior in all three governments. René Mayer was minister of finance in the Plevén government; in the two subsequent governments the premier himself took this portfolio. Georges Bidault was minister of national defense under Plevén and Faure, Plevén under Pinay.

Throughout 1952, successive governments were trying to become masters of the inflationist trends released by the Korean war. These were given fuller scope in France than in most countries, partly because confidence in stability had been undermined by 35 years of progressive inflation and partly because 1951 was an election year. The cost of living index for Paris had reached 144.8 in Feb. 1952, little more than two years after the new basis of 100 had been adopted at the end of 1949. In consequence it was not surprising that the balance of

payments deficit, which had shrunk to the equivalent of \$ 000,000 in 1950, had expanded again in 1951 to \$1,058,000. To support the Pinay government's effort at stabilization nearly a quarter of the deputies of Gen. Charles de Gaulle's Rassemblement du Peuple Français (R.P.F.) broke away from their leader, thereby widening the basis of the parliamentary regime and permitting the Socialists to go into opposition without incurring the odium of making it impossible to govern. Although Pinay stood farther to the right than any previous prime minister of the fourth republic he enjoyed widespread popularity for his attempt to base policy on the defense of the consumer, whether employer or employee.

The year was unusually free from industrial strikes. Communist attempt to launch political protest strikes totally unsuccessful and showed that the party's electoral strength could not easily be transposed onto other planes.

Plevén Cabinet.—The ratification of the European Coal and Steel Community on Dec. 13, 1951, by 377 to 233 votes the new national assembly its first occasion to show that though it had so far proved an inadequate instrument of government, it had fine debating qualities. The Gaullist speaker criticized the treaty on the ground that for a united Europe was an inadequate starting point, which should have been political federation. This was an argument that was to provide common ground for Gaullists and Socialists when the European Defense Community was first discussed in February. The Gaullist attitude to the Coal and Steel Community was, however, one of caution, not opposition. They insisted on the necessity of continued investment to enable the French heavy industry to compete with the German, and on the importance of making the Moselle navigable so as to give the Lorraine-Saar industrial complex a waterway to the sea. These recommendations were incorporated in the law authorizing ratification.

The government's main political preoccupation as 1951 drew to the end was the budget. Indeed it was hope of consolidating a majority to pass it that led the government to postpone disastrous consequences further discussion of reforms with the Tunisian government, since these plans were causing alarm among deputies concerned with the interests of the North African settler community. This concession to the latter proved no avail, since the Plevén government was at all events defeated by 341 to 243 on Jan. 7 over its measures for balancing the budget. The elements of the budget as proposed were as follows: Expenditure: civilian administration and service on debts 1,000,000,000 fr., state equipment 170,000,000,000 fr., economic modernization and equipment 395,000,000,000 fr., reconstruction 400,000,000,000 fr., defense expenditure 950,000,000,000 fr., special accounts 85,000,000,000 fr.; total 3,365,000,000,000 fr. Revenue: existing taxes 2,665,000,000,000 fr., increased charges for gasoline and tobacco 70,000,000,000 fr., U.S. 70,000,000,000 fr., new taxes 160,000,000,000 fr.; total 2,905,000,000,000 fr. Deficit 400,000,000,000 fr.

The new taxes were to be provided by a 10% increase in most forms of income tax as well as of some indirect taxes. The government was also asking for powers to reorganize the railways and social security so as to diminish the deficits that were a serious drain on the treasury. These proposed powers, though carefully circumscribed, brought the Socialists into opposition. (See also EUROPEAN UNION.)

Faure Cabinet.—It was expected to be long before anyone would win the necessary 314 votes to be elected premier after only 11 days Edgar Faure, the youngest premier since either the third or fourth republic had known (aged 43), was elected by 401 votes to 101 with the Gaullists abstaining and the Socialists voting for him though they refused to enter a cabinet which was almost identical with his predecessor's.



"NOT UNUSUAL, GENERAL . . . IT HAPPENS TO OLD SOLDIERS," a 1952 cartoon by Fischetti of the NEA Service, Inc.



FRENCH FAMILY in the doomed Alpine village of Tignes discussing their problems with a visitor before all residents were forced to evacuate in March 1922. Because of a new power dam, the village later disappeared beneath a lake formed by the dammed waters of the Isère river. (Note the cows being sheltered in the family living room)

program speech he carefully limited himself to immediate problems so as to avoid raising unnecessary occasions of differences in his coalition ranging from Socialist to Conservative. He showed himself a remarkable debater and threw himself with great courage into the three principal problems—pacification of Eastern Europe, obtaining some kind of mandate from the assembly for the negotiations with a view to creating the European Defense Community and representing France at the North Atlantic Treaty organization (NATO) Lisbon conference, and finally the budget and associated economic problems. In the second he was not very successful, but the third was to bring him down before he could show what he could do in the first. The urgency of the economic problems was shown almost at once by the reintroduction of import quotas on a big scale so as to prevent a ruinous loss of gold and dollars. An attempt to pilot a prudent form of automatic wage sliding scale bill through the assembly—to replace that voted by Communists, Socialists and Gaullists, which Faure's predecessor had had to let past him into the Chamber house in the hope of taming it on its return—broke down, so that Faure too had to hope that it could be put right at a later stage.

The three days allotted for a debate on the European Defense

Community spun themselves out to nine, but here at least a resolution was at last agreed upon that gave the French government the possibility of action at Lisbon. Fears and suspicions aroused by the scheme as worked out by the experts were expressed from almost all parts of the house, and from almost as many parts it was declared that if only the United Kingdom had joined the fears would not exist. The national units were found disquietingly big, offering, it was argued, encouragement and facilities to German irredentism, which, it was also argued, was the gravest danger to peace between east and west. The resolution, finally passed by 327 votes to 287, authorized the government to go ahead provided the German contingent in the European army was never larger than the French, that no recruitment should start in Germany before ratification, that the sole purpose of the European army should be to protect its members' existing territory, that the European army should only be progressively established in so far as organizations to command and direct it had been created. It was recalled that no state could join NATO without the agreement of all its members. The government was asked to obtain an Anglo-U.S. guarantee against the secession of any member of the European Defense Community.

When Faure finally left for Lisbon on Feb. 19, almost his last words were a warning that the delay in getting the budget balanced would mean additional burdens. It was further stated at the ministry of national defense that rising costs would



"SAVE THE FRANC" placard, of the kind displayed by most Parisian shops in 1952, implying to patrons that goods were marked down in support of the government's plea to halt inflation by lowering prices

increase the defense bill from 950,000,000,000 fr. to 1,200,000,000,000 fr. The new proposals laid before the assembly on Feb. 25 were a 15% instead of a 10% increase in taxes, and cuts of 8% in re-equipment and 3% in reconstruction credits. Faure reminded the assembly that a deficit was piling up at the rate of 1,000,000,000 fr. a day, that the treasury would soon have difficulty in meeting its obligations, that the country was faced with an increasingly grave deficit in its foreign balance of payments. On Feb. 29 the first article in the bill (*i.e.*, the increase of taxes) was rejected by 309 votes to 283. More than half of Faure's own party had abandoned him. After resignation, while still in charge of current affairs, he had to ask the assembly to authorize a loan from the Bank of France of 25,000,000,000 fr. for three weeks so that the French treasury should not stop payments.

Pinay Cabinet.—Antoine Pinay, Faure's successor, was equally unexpected in the premier's office. His election by 324 votes to 206 was caused by the revolt of 27 Gaullist deputies (instead of the expected dozen) against their party's decision to abstain. Pinay, aged 60, was a late comer to the forefront of national politics. In his declaration of policy he accepted the assembly's repeated rejection of additional taxes as final and adopted as principle that expenditure that was long-term investment (*e.g.*, re-equipment and reconstruction) ought to be financed from loans. Uncovered expenditure must be cut. Past offenses whether fiscal or political should be covered by amnesty and tax collection in future made much more strict, with the help of a simplified tax code. Prices must be rigorously held down. There was much in this to attract the more conservative followers of De Gaulle, who were at all events very dissatisfied with a policy that was so negative as to seem to court national disaster.

Many of those who had voted for Pinay had not expected him to obtain a majority. The M.R.P. members were concerned to find themselves linked to a premier so far to the right. Not all Pinay's own party colleagues were pleased at his success. The Gaullist rebels were uncertain for how long and how far they wished to rebel. The latter declined offers of portfolios, and the M.R.P. came in only on condition that foreign policy remained in the hands of Schuman, whom Pinay had shown

some inclination to replace.

In several respects the situation was more favourable Pinay than to his predecessors. The leanest period of the from the treasury's point of view was past. World prices of materials were falling. His predecessor had slashed imports initiated negotiations for \$100,000,000 credit with the European Payments union (E.P.U.) which forestalled the necessity of paying large sums in gold or dollars to settle foreign trade negotiations. This gave Pinay a good foothold for his anti-inflationist fight, which he pursued logically although the assembly was only a little less unwilling to cut expenditure than it had been to vote new taxes. He passed his amended budget through the assembly on April 13 with 200,000,000,000 fr. of currency credits blocked until covered by loans. This still left 400,000,000,000 fr. to be found by loan. The government stopped the rise in the cost of living, which fell from 14.1 in February to 14.2.8 in June.

Pinay finally secured the passage of an automatic scale bill in a form which gave a good deal of satisfaction in principle to its backers but which so fixed the starting point of calculation that the index figure would have to reach 144.8 before the basic minimum wage was increased. The 3.5% free loan with the gold value of the capital guaranteed could be described as a failure, for a total of 195,000,000,000 fr. of new money had been subscribed when it was closed on July 1. But it was also no triumph and indicated that a great many Frenchmen were quite unprepared to lend their savings in support of the government whose policy they approved. This was notably true of the peasants. Pinay risked their opposition by refusing their demand for an increase in the price of wheat over that of 1951, but offered some compensation by reduction of the prices of industrial products needed by the farmer. The reform of the tax system promised for June had to be postponed till October. In early July Pinay's initial success in uniting the Gaullist forces was confirmed by the resignation of deputies from the R.P.F. when the party leaders tried to enforce voting discipline. On July 13 he had the triumph of getting the parliament go on holiday till October; *i.e.*, on a traditionally appropriate date, which had been unobserved for many years.

The summer holidays were not altogether favourable to the Pinay government, for by the end of August the cost of the index figure had risen again to 144.8, partly as a result of drought and foot-and-mouth disease. On Aug. 30 Pinay took action against price rings and declared that stabilization should provide new capital for housing. Early in September recognizing the limits of a merely persuasive approach, he imposed a ceiling on the prices at the level obtaining on Aug. 31. This was not particularly successful in forcing down food prices. Industrial prices continued slowly to fall and at the end of the month the government felt reasonably safe against a further inflationary burst before the end of the year. It also proposed to help the big low-cost shops rather than the small high-price ones. The 1953 budget was prepared on the principle that the expenditure of no civilian ministry might be increased, but that of the ministry of education, which was faced with the problem of housing a steadily increasing school population, but this proved very difficult to apply.

The refusal of the U.S. government at the end of July to make any guarantee of offshore purchases beyond the current year, and also to include in these purchases some lines of primary manufacture to which the French government attached great importance, was a blow to the government both militarily and financially. But the government decided to maintain its arms program and an increase in defense costs became inevitable.

The Communist Rivalries.—The Communist party, in the

nance of Maurice Thorez, still an invalid in the U.S.S.R. after a stroke of Oct. 1950, suffered a series of defeats beginning with an unsuccessful protest strike called on Feb. 12, because of an additional demonstration commemorating left-wing counter-revolution in Feb. 1934 had been banned. None the less it was decided to hold on May 28 a large-scale demonstration against the presence in Paris of Gen. Matthew B. Ridgway. There was no sign of mass participation, but small groups of disciplined Communists attacked the police with great violence. After the rioting had subsided Jacques Duclos was arrested in his car near the area where it had occurred. He was held on the ground that he had been caught "red-handed" (in the perpetration of violence), the only condition on which a deputy can be either arrested or prosecuted without the assembly's permission. On July 1, however, a court decided that the police had failed to prove that Duclos had been caught in the act so that he had to be released and the case dropped. Meanwhile proceedings against other Communists were prepared with a view to a trial or trials for conspiracy to be held in the autumn. In spite of the blow to the government's prestige when it failed to make its case against Duclos, that to the Communist party's prestige for failing to back its incessant propaganda with mass action was much more serious. The meetings of the party central committee on June 18 and Sept. 3 and 4 were filled with confessions of error which *L'Humanité* made public. The party had failed to associate the mass of non-Communists with its disciplined spearhead. A fortnight later, André Marty and Charles Tillon, both advocates of the unsuccessful demonstration, were demoted, the first from the party secretariat, the other from the Politburo.

The imminent return of Maurice Thorez, whom Marty had proposed within the party, was announced by Duclos at the meeting of Sept. 3, but *L'Humanité* added that the secretary-general of the party would still have to limit his activities because of the state of his health.

Robert Schuman imperturbably continued his European policy. He obtained Italian support for his two proposals: one that the assembly of the European Coal and Steel Community which met in September should discuss the creation of a supranational European political executive; the other, put forward on July 23, that the Saar territory should be Europeanized and Saarbrücken made the seat of such European institutions as the executives of the Coal and Steel and the Defense Communities (see SAAR). The first proposal was important from the point of view of securing a majority in the assembly for the ratification of the European Defense Community treaty, which, it was argued by its critics, presupposed a political authority.

(D. R. GL.)

Education.—(1950–51) Elementary schools: state infant 3,788, pupils 15,574; private infant 198, pupils 18,289; state elementary 69,970, pupils 3,831,938; private elementary 10,982, pupils 894,474; state higher elementary, pupils 206,180; private higher elementary, pupils 59,914; total elementary 84,938, pupils 5,498,369. Secondary schools: state 983, pupils 459,921; private, pupils 334,248; total pupils 794,169. Lower technical and vocational schools numbered more than 220. Higher education: state universities 17, students 139,533, including 38,732 in the law faculties. There were no other state institutions of higher education, 6 (Catholic) universities and more than 80 state and private institutions of higher technical education.

Finance.—Budget: (1951 actual) revenue 2,346,000,000,000 fr., expenditure 2,849,000,000,000 fr.; (1952 est.) revenue 2,773,000,000,000 fr., expenditure 3,498,000,000,000 fr.; (1953 est.) revenue 3,350,000,000,000 fr., expenditure 4,000,000,000,000 fr. National income (1951) 9,020,000,000,000 fr. Public debt (Jan. 1, 1952) external 1,254,400,000,000 fr. Currency circulation (Oct. 1, 1952) 2,041,000,000,000 fr. Deposit money (July 31, 1952) 1,932,000,000,000 fr. Official exchange rate (1952) 350 francs = U.S. \$1.

Foreign Trade.—Imports in 1951, including the Saar, were valued at 99,000,000,000 fr., compared with 1,072,728,000,000 fr. in 1950; exports amounted to 1,480,000,000,000 fr. in 1951, compared with 1,072,000,000,000 fr. in 1950. The main sources of imports (1951) were: French Union 21%; U.S. 11%; German Federal Republic 6%; Australia 1%; Belgium-Luxembourg 5%; U.K. 4%. The main destinations of exports were: French Union 37%; U.K. 9%; Belgium-Luxembourg 6%; Switzerland 6%; U.S. 6%; German Federal Republic 5%.

Transport and Communications.—Railways (1950): 41,272 km. including 4,077 electrified. Railway traffic (monthly average, 1951): passenger-kilometres 2,323,000,000; freight ton-kilometres 3,783,000,000; freight transported 14,700,000 metric tons. Roads (1950): 715,696 km. including 80,231 km. of first-class national roads. Motor vehicles licensed (Jan. 1950): 2,295,000 including 572,800 commercial. Navigable inland waterways (1948): 8,488 km.; cargo (monthly average, metric tons, 1951): loaded 3,358,000, unloaded 3,291,000. Shipping (Jan. 1952): merchant vessels 726, gross tonnage 3,173,224; cargo in external trade (monthly average, metric tons, 1951): loaded 1,884,000, unloaded, 3,411,000. Civil aviation traffic, Air France only (monthly average, 1951): passenger-kilometres 105,200,000; cargo ton-kilometres 3,300,000. Telephones (1951): 2,405,802. Radio receiving set licences (1947): 5,728,000.

Agriculture.—Main crops (metric tons, 1951 except as indicated): wheat 7,065,000; rye 504,000; barley (1952) 1,713,000; oats (1952) 3,257,000; maize (1952) 612,000; potatoes 13,459,000. Livestock (Sept. 1951): cattle 15,801,000; pigs 6,824,000; sheep 7,510,000; goats (Sept. 1950) 1,283,000; horses 2,397,000. Foodstuff production (metric tons): meat (1951) 1,800,000; milk (1950) 15,000,000; butter (1950) 250,000; cheese (1948) 190,000; sugar, raw value (1951) 1,266,000. Wine production in 1951 was 47,329,000 hl., compared with 61,334,000 hl. in 1950. In 1951, 11,000,000 hl. of wine were imported, mainly from Algeria; 632,000 hl. were exported, mainly champagnes, clarets and Burgundies.

Industry and Production.—Industrial production (metric tons, 1951, excluding the Saar): coal 52,956,000; iron ore (35% metal content) 33,600,000; pig iron 8,748,000; steel ingots and castings 9,828,000; cement 8,352,000; woven cotton fabrics 163,200; cotton yarn 271,200; wool yarn 120,000; rayon filament yarn 57,100; rayon staple fibre 49,600; gas 2,436,000,000 cu.m.; electricity 36,115,000,000 kw.hr. There were 313,900 motor cars and 131,400 trucks produced in 1951. There were 68,050 dwelling units built in 1950, including 30,120 repaired. The mid-1951 index of employment stood at 117, and the mid-1951 index of industrial production was 131 (1937=100).

Franco, Francisco (1892–), Spanish army officer and statesman, was born at El Ferrol, Galicia, Dec. 4. He graduated from the military academy of Toledo in 1910. (For his early career, see *Encyclopædia Britannica*.) On the outbreak of civil war in July 1936 he became leader of the rebels. After a bitter three-year struggle, he emerged as the *caudillo* and *generalísimo* of Spain. During World War II, though his sympathies were pro-German and antisoviet, he remained neutral. On June 7, 1947, the *cortes* passed unanimously the Succession act, making Spain a nominal kingdom, confirming Franco in office as chief of the state for life and according him the right to nominate his successor.

On Jan. 31, 1952, the khalifa of Morocco reported favourably on talks with General Franco in Spain. In April Franco sent a diplomatic mission through the Moslem countries of the middle east, with a broadcast speech in which he praised their national resurgence which he compared with the "decrepitude" of other western European countries. He also made a bid for Moorish favour by implying that he was eager for Moroccan independence. In June he addressed pilgrims at the 35th Eucharistic congress at Barcelona.

Franklin Institute: see SOCIETIES AND ASSOCIATIONS, U.S.

Freemasonry: see SOCIETIES AND ASSOCIATIONS, U.S.

Freer Gallery of Art: see SMITHSONIAN INSTITUTION.

French Colonial Empire: see FRENCH UNION.

French Equatorial Africa. This federation in central Africa of four overseas territories of the French union is bounded west by the Atlantic ocean, Nigeria and French West Africa, north by Libya, east by Anglo-Egyptian Sudan and southeast by the Belgian Congo. Cameroun, the southeastern part of the former German colony of Kamerun, is under French trusteeship and administered separately. Areas and populations are:

	Area (sq. mi.)	Population 1936 est.	1950 est.
Gabon	103,089	409,700	409,000
Middle Congo	132,046	746,800	684,000
Ubangi-Shari	238,224	833,900	1,072,000
Chad	495,752	1,432,600	2,241,000
Total	969,111	3,423,000	4,406,000*
Cameroun	170,230	2,389,500	3,006,000†

*Including 20,120 Europeans (c. 33% French). †Including 12,021 Europeans (10,252 French).

The native population is mainly Bantu, but there are semi-Hamitic, semi-Negroid pastoralists in northern savannah districts. Religion: animism; Chad, Moslem 46%; c. 280,000 Christians in Gabon and Middle Congo. Chief towns: Brazzaville, capital of Afrique Equatoriale Française (A.E.F.) (pop., 1949 est., 83,579, including 4,353 Europeans); Bangui (1948 est., 41,000); Fort Lamy (18,300); Libreville (12,600); Yaoundé, capital of Cameroun (1946 est., 50,000). High commissioner in A.E.F., Gov. Gen. Paul Chauvet. Governors in 1952: Gabon, Yves Digo; Middle Congo, Jean Chambon; Ubangi-Shari, Louis Grimald; Chad, Ignace Colombani. High commissioner in Cameroun, André Soucadaux.

History.—The centenary of Savorgnan de Brazza, founder of the French Congo, was celebrated in Brazzaville in Jan. 1952. Louis Jacquinot, minister of overseas France, was present.

Elections to the territorial assemblies were held on March 30. Throughout A.E.F. the Rassemblement du Peuple Français (R.P.F.) was successful in the first college (for Europeans), but in Middle Congo and Ubangi the Rassemblement Démocratique Africain, which once had Communist affiliations, improved its position in the second (for the local citizen electorate). Some defeated candidates started riots in the Logone region, in which there were 14 casualties. In Cameroun the R.P.F. was successful in the first college, the moderates in the second. Louis Paul Aujoulat, secretary of state for overseas France, who had been elected by the second college, became president of the territorial assembly. The senatorial elections in May had equivalent results.

A court of appeal was established at Yaoundé. Cameroun became independent of A.E.F. judicially as it had already been administratively.

In the economic sphere there was a notable extension of the scheme for cotton in A.E.F. The federation's resources, however, were adversely affected by the fall in world prices, and budgetary cuts were necessary. But 75,000 cu.m. of stripped wood and plywood were produced.

Cameroun's railways were repaired, and traffic was doubled compared with that before World War II. Progress was being made on the Douala-Yaoundé line and on harbour works at Douala.

The Logone-Chad mission, which had set out six years before, was still conducting scientific investigations in the Chad region; soil and water studies were undertaken and a map was being made. The hypothesis that the waters of the Logone river would be "captured" by the Bénoué river system seemed unlikely to be realized in the near future.

Both the A.E.F. and Cameroun began experiments in elementary education and short-term technical instruction. A tentative administrative regrouping was undertaken of some villages in the forest region of Gabon.

Education.—(1952) A.E.F.: pupils, elementary 88,800; secondary 1,761; technical 2,995; bursaries in France 176. Cameroun: elementary 157,647; secondary 1,372; technical 446; bursaries in France 206.

Finance.—A.E.F.: budget (1951 est.), balanced at 8,700,000,000 fr. C. F. A. Cameroun: budget (1951 est.), balanced at 4,682,000,000 fr. C. F. A. Note circulation (Dec. 1951) 9,600,000,000 fr. C. F. A. Franc C. F. A. (Colonies Françaises d'Afrique)=2 metropolitan francs. Exchange rate (1952): 350 metropolitan francs=U.S. \$1.

Foreign Trade.—(1951) A.E.F.: imports 18,200,000,000 fr. C. F. A. (including 12,000,000,000 fr. from the French union); exports 11,700,000,000 fr. C. F. A. (including 8,300,000,000 fr. to the French union), mainly ginned cotton, timber and coffee; also gold, diamonds, vegetable oils, cacao. Cameroun: imports 16,500,000,000 fr. C. F. A. (including 13,000,000,000 fr. from the French union); exports 14,400,000,000 fr. C. F. A. (including 7,200,000,000 fr. to the French union), principally cacao, coffee, almonds, palm oil and bananas; also timber and rubber.

Transport and Communications.—Motor vehicles (1951) 13,300. Tonnage (metric) handled at ports: Douala 650,000; Pointe Noire 300,000. (Hu. De.)

French Guiana. An overseas *département* of France on the northeast coast of South America. Area, including territory of Inini, 34,740 sq.mi. Pop. (1946 census)

29,160 (including Inini, 5,042); (1951 est.) 26,000. The lowland population is Negro or mixed; Europeans c. 5%; aboriginal Indians. Religion, mainly Roman Catholic. Capital and chief port, Cayenne (pop., 1948 est., 11,700). Prefect, Robert Vignon.

History.—In the 1952 senatorial elections, a Radical won the seat. At Cayenne work was begun on the buildings for the French Institute of Tropical America and for the Pasteur Institute. Cayenne Island was cleared of mosquitoes by a campaign and by marsh drainage. Electricity was being brought to the coastal communes.

Materials required for the development of the *département* accounted for 37% of the total imports in 1951 (compared 10% in 1947). A cargo vessel was acquired in order that timber could be exported direct. The output of gold rose to 37 tons. A joint Franco-U.S. mission investigated the tantalite deposits in the Sinnamary region.

Education.—One school in each commune; college at Cayenne.

Finance and Foreign Trade.—(1951): Imports 2,085,000,000 fr. (including 1,700,000,000 fr. from the French union); exports 203,000,000 fr. (including 170,000,000 to the French union), notably gold (125,000 fr.) and timber (25,000,000 fr.). Monetary unit: metropolitan franc. An exchange rate in 1952 of 350 fr.=U.S. \$1.

Transport and Communications.—Roads 36 km.; motor vehicles 10. Communications are mainly by sea and river. (Hu. De.)

French Guinea: see FRENCH WEST AFRICA.

French India. This group of four settlements in India had a total area of 193 sq.mi. Pop. (1948 est.) 317,300. Areas and populations of the four settlements are:

	Area (sq.mi.)	Population (1938 est.)
Pondicherry	112	181,000
Karikal	52	62,500
Mahé	23	13,400
Yanaon	6	5,400

Language: Tamil. Seat of administration, Pondicherry (1948 est., 22,572). Commissioner, André Ménard.

History.—The directors of policy in French India being French and resisting agitation for union with India, the minister of the Indian republic, Jawaharlal Nehru, announced in Oct. 1952 that he would not accept a referendum, and called for the immediate cession of the four territories.

The textile industry was in difficulties: raw cotton could no longer be bought from India and so had to come from Pakistan; prices therefore went up. In Karikal a serious effort was made to develop the rice fields; the deficiency of rice supplies was made up by purchases from Indochina. In spite of all this the budget showed a surplus.

Education.—Pupils (1952): primary 15,000; secondary 1,200; teachers 32; undergoing higher education 29. Bursaries in France 24.

Finance and Foreign Trade.—Exports, mainly to the French union, consisted (90%) of cotton goods (41,000 metric tons, worth Rs. 55,000,000). Monetary unit: rupee=73.50 metropolitan francs, or 21 cent (1952). (Hu. De.)

French Indochina: see INDOCHINA.

French Literature. The chief literary event of 1952, a year notable for much work of distinction, was the posthumous publication of Marcel Proust's *Jean Santeuil* (1,000 pp., 3 vol. with a preface by André Gide). In this work, written between 1896 and 1900, most of the later Proustian themes could be discerned; but the essential quality that had endowed *A la recherche du temps perdu* with its enchantment was missing. Admiration for Proust was passionate, and the Société des Amis de Marcel Proust and Amis de Combray published two bulletins.

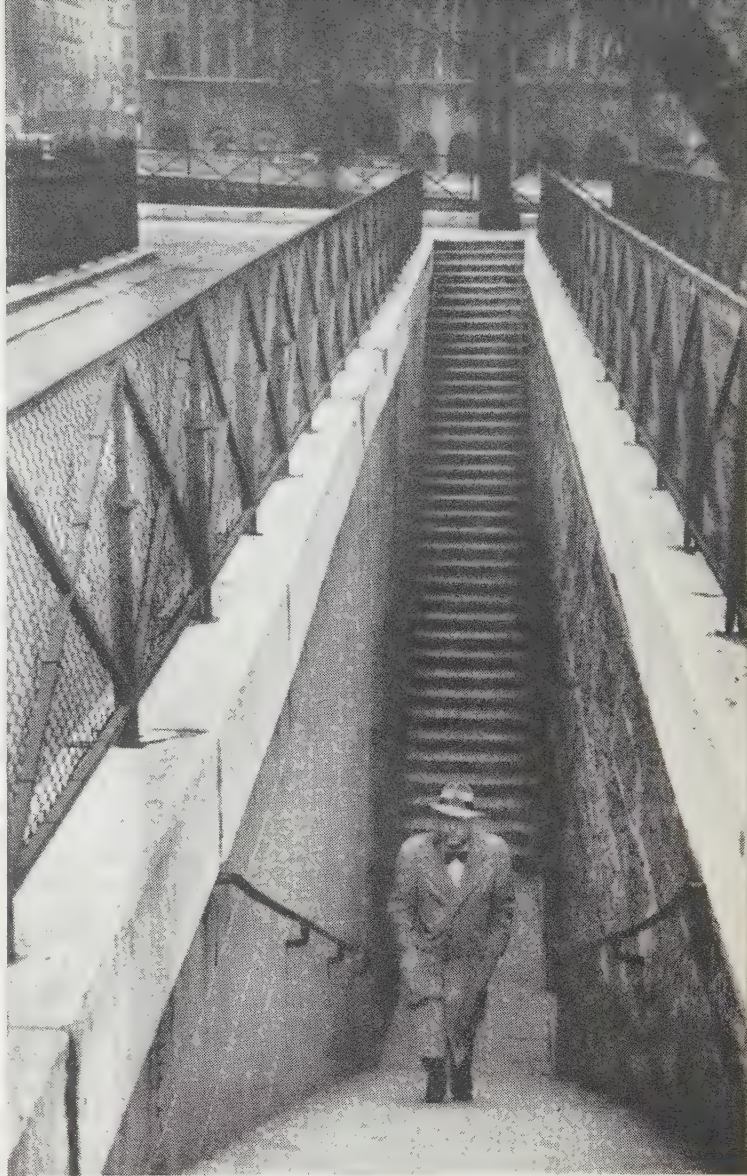
Having finished his eight-volume novel *La Mort est un commencement*, Paul Vialar began a new cyclic work, *La Chasse aux hommes*, the two first books of which, *Le Rendez-vous* and

ête de chasse, appeared. Among the many novels that interested the critics and the public were: *Les Amours et les haines*, sequel to *Madame Maillart*, by Claude Aveline; *Lève-toi et marche* by Hervé Bazin; *Soleil au ventre*, a presentation of the war in Indochina, by Jean Hougron; *Les Saints sont en enfer*, about worker priests, by Gilbert Cesbron; *Le Préau* (Prix des Critiques), a tale of childhood and adolescence, by Georges Orgeaud; *Sylvia* by Emmanuel Berl; *Antonin* by Henri Bosco; *Le Hussard sur le toit*, the life of a young Piedmontese carabinieri in 1835–40, by Jean Giono; *La Flamme et le vent*, the thoughts of a Protestant country pastor, by Henri Hatzfeld; *Le dimanche de la vie* by Raymond Queneau; *La Jeunesse déchirée* by Jeanne Galzy; *L'Aventure est en nous* by Maurice Genevoix; and *Mariage de couleurs* by Maurice Bedel. François Mauriac produced *Galigaï* and also *Le Mal*, a novel dating from 1924, the English translation of which had been a success. Georges Duhamel produced *Cri des profondeurs*. Marguerite Yourcenar's *Mémoires d'Hadrien* and Jacques Perry's *L'Amour est rien* (a novel of psychological analysis in the Stendhalian manner) won great praise from the critics (notably from Robert Kemp). A collected edition of his works called attention again to the precocious talent of Raymond Radiguet (1903–23). Pessimism and cynicism characterized the portrayal of personalities and social groups in several novels by young writers: for instance, *Je suis un monstre* by Jean Meckert; *La Plaie et le couleuvre* by Guy Le Clec'h; *Si j'avais voulu* by Marcel Haedrich; *Les Lézards dans l'horloge* by Armand Lanoux. Akin to these *romans noirs* was Jean-Paul Sartre's study *Saint-Genet comédien martyr*, a thoroughgoing eulogy of Jean Genet, vagrant, thief and homosexual but also a talented writer. Yet another provocative book, which incurred very severe criticism, was *Féerie pour une autre fois* by Louis-Ferdinand Céline, who had been punished with *indignité nationale* for his conduct during World War II.

Among poets, Guillaume Apollinaire was brought to the forefront with *Tendre comme le souvenir* (about 200 previously unpublished letters to Madeleine, his friend of 1915) and *Le Guetteur élancolique* (unpublished poems, with a preface by André Salmon); and André Rouveyre and Henri Matisse published a critical essay, *Apollinaire*. Elvire Chouveau produced a new edition of Arthur Rimbaud's *Poésies* and Georges Duhamel published *Vues sur Rimbaud*. Paul Valéry's *Lettres à quelques-uns* made their appearance. Paul Eluard's *Le Phenix* and Pierre Emmanuel's *Babel* are worthy of mention, and the critics commended the books of Charles Maurras (*La Balance intérieure*, humanist in inspiration) and André Salmon (*Les Etoiles*, *l'encrier*—melancholy and macabre, in the style of Max Jacob).

Memoirs included Romain Rolland's *Le Cloître et la rue* (recalling his youth at the École Normale Supérieure); Julien Benda's *Mémoires d'infratombe* (full of malicious remarks and scathing character-sketches); Jacques Porel's *Fils de Jeanne*; Alfred Fabre-Luce's *Journal 1951*; Edouard Herriot's *dis* (2 vol., *Avant la première guerre mondiale* and *D'une terre à l'autre*); and André François-Poncet's *Carnets d'un pitif* (on his experience as a deportee in Germany in World War II). Under the same heading come Benjamin Constant's *Journal intimes* (ed. Alfred Roulin and Charles Roth; the first complete text, taken from the manuscript).

The most important works of literary history were André Malraux's *Sainte-Beuve, sa vie et son temps* (Prix des Ambassadeurs), and André Maurois's *Lélia, ou la vie de George Sand*, one of his best biographies. Others were Henri Martineau's *Le roman de Stendhal*, J. F. Angelloz' *Rilke* and P. Andrieu's *Drieu le moine et visionnaire* (on Drieu La Rochelle, a writer who killed himself at the end of World War II). The Mérimée-Turgenev



GEORGES SIMENON, Belgian mystery writer whose Inspector Maigret was popular in 17 languages, shown against a French background typical of his psychological crime novels. He was elected to the Royal Belgian Academy of French Language and Literature in May 1952

letters were edited by Maurice Parturier. Claudel's *Correspondance* with Francis Jammes and Gabriel Frizeau (1897–1938, a middle-class art-lover of Bordeaux) showed how he reconverted them to Catholicism, a success that made up for his failure with André Gide.

The 150th anniversary of Victor Hugo's birth was commemorated by the publication of *Pierres*, unpublished writings edited by Henri Guillemin; of *Juliette Drouet, mille et une lettres d'amour à Victor Hugo*, presented by Paul Souchon; of Henri Guillemin's *Victor Hugo par lui-même*; and of Louis Perche's *Victor Hugo* (a study with selections). Louis Aragon, the Communist poet, also published a "Victor Hugo" for the masses, following the line dictated by the U.S.S.R. and the "peace fighters." The Communists made an effort to capture Hugo for themselves (since "bourgeois" literary circles were somewhat inclined to disparage or question his worth), as they likewise did Leonardo da Vinci. The centenary of Paul Bourget (no longer read) provided an occasion for determining Bourget's place in French literature as the painter of the upper-class society that the two world wars destroyed. Quieter celebrations marked the centenary of the anti-naturalist Émile Zola, author of the novel *Les Oiseaux s'envolent et les fleurs tombent*. The 50th anniversary of the death of Zola, who was still esteemed by the

people, was marked by discussion of his merits and defects.

A vehement controversy broke forth between Jean-Paul Sartre and Albert Camus after Sartre's periodical *Les Temps modernes* had published a sternly unfavourable review of Camus's book *L'Homme révolté*. Raymond Aron joined in, taking sides against Sartre in *Le Figaro littéraire*. The quarrel served to emphasize the importance of political ideology in contemporary literature. Sartre, despite his overtures to the Communist party (held by him to be the only possible defender of the working class), remained anathema to the Stalinists, who denounced him as typical of western literature at its most decadent. (See also LITERARY PRIZES.) (A. PR.)

French Overseas Territories: see FRENCH UNION.

French Pacific Islands: see PACIFIC ISLANDS, FRENCH.

French Union. With the establishment, by the constitution of 1946, of the French union, in which are comprised both the mother country and the former empire, the old colonial terminology was abolished and for the colonies were substituted four categories of overseas regions. The older, completely assimilated colonies claimed recognition as French *départements* administered as in the mother country; the others became overseas territories (*territoires d'outre-mer*) which thenceforward would elect representatives to parliament and would have their own local assemblies possessed of wide powers; the trust territories, to be known in future as *territoires associés*, were similar in structure to the overseas territories and had the same electoral privileges; lastly, there were the former protectorates, now styled *états associés*, which could belong to the union only by an act of voluntary accession. Total area of the overseas territories of the French union: approximately 4,543,793 sq.mi.; total population (1948-51 est.) 80,153,000. Certain essential information on the component parts of the French union is given in the table. (See also separate articles.)

History.—The assemblies of the several territories had been set up by various decrees *ad hoc* and so had various names until Jan. 25, 1952, when a new law gave them their definitive organization as the territorial assemblies. The membership was increased. Except in Senegal and in Togo, where there were only single electoral colleges, the double-college system obtained everywhere, the Europeans having their own representatives, who were always fewer in number (sometimes considerably fewer; e.g., in the Comoros, where there were 4 Europeans and 20 Comorians) than the local representatives. Elections to the new assemblies took place on March 30.

The centre and the right were strengthened by the elections to the council of the republic in May. Gaston Monnerville was re-elected president.

Albert Sarraut, who celebrated his 80th birthday, was re-elected president of the assembly of the French union and continued to demand real powers for it. New members for metropolitan France were elected to the assembly: the Rassemblement du Peuple Français gained seats from the Mouvement Républicain Populaire and from the Communists. The high council of the union met once. Prince Buu-Loc was appointed high commissioner of Vietnam in France.

The government of Antoine Pinay took office in March, with Pierre Pfimlin replacing Louis Jacquinot as minister for overseas France, Jean Letourneau remaining minister for associated states and Robert Schuman minister for foreign affairs (responsible for Tunisia and Morocco). With the support of the centre and of a section of the right, the government defended the French position in Morocco and in Tunisia against the demands of the local princes and of the Arab states.

		French Union	
Country and area, sq.mi. (approx.)	Population* (000's omitted)	Capital, status, governors, rulers, etc.	
AFRICA			
Algeria, 846,124	8,930	Algiers, group of three départements, Governor General: Roger Léonard.	
Morocco, 153,870	8,500	Rabat, protectorate, Sultan: Sidi Mohamed ben Youssef III; Resident general: Augustin Guillaume.	
Tunisia, 48,332	3,500	Tunis, protectorate, Bey: Mohammed el-Resident general: Jean de Hauteclou.	
French West Africa, 1,774,553	17,380	Dakar, group of territories, High commissioner, governor general: Bernard C. Gentile.	
Mauritania, 364,092	518†	Saint-Louis, overseas territory, Governor: Pierre Mesmer.	
Senegal, 81,081	1,992†	Saint-Louis, overseas territory, Governor: Lucien Gray.	
Sudan, 460,308	3,164†	Bamako, overseas territory, Governor: vador Etcheber.	
Upper Volta, 121,892	3,070†	Ouagadougou, overseas territory, Governor: Albert Mouragues.	
Ivory Coast, 123,359	2,066†	Abidjan, overseas territory, Governor: Camille Bailly.	
French Guinea, 108,455	2,180†	Conakry, overseas territory, Governor: Paul Sirieux.	
Niger, 470,656	2,029†	Niamey, overseas territory, Governor: nand Casimir.	
Dahomey, 44,710	1,505†	Porto Novo, overseas territory, Governor: Charles Bonflis.	
Togoland, 20,463	1,015	Lomé, trust territory, Commissioner: rent Péchoux.	
French Equatorial Africa, 969,111	4,406†	Brazzaville, group of territories, High commissioner, governor general: Paul Chabréville, overseas territory, Governor: Yves Digo.	
Gabon, 103,089	409†	Pointe Noire, overseas territory, Governor: Jean Chambon.	
Middle Congo, 132,046	684†	Bangui, overseas territory, Governor: Grimald.	
Ubangi-Shari, 238,224	1,072†	Fort Lamy, overseas territory, Governor: Ignace Colombani.	
Chad, 495,752	2,241†	Yaoundé, trust territory, High commissioner: André Soucoudaux.	
Cameroun, 170,230	3,100	Jibuti, overseas territory, Governor: Sadoul.	
French Somaliland, 8,376	55	Antananarivo, overseas territory, High commissioner, governor general: Robert Barges.	
Madagascar and dependencies, 228,589	4,182†	Dzaoudzi, overseas territory, Administrator: Irénée Davier.	
Comoro archipelago, 849	169†	Cayenne, overseas département, Governor: Robert Vignon.	
Réunion, 970	258†	Basse-Terre, overseas département, Governor: Gaston Villegier.	
AMERICA			
Saint-Pierre and Miquelon, 93	5	Fort-de-France, overseas département, Governor: Christian Laigret.	
French Guiana, 34,740	26	Pondicherry, overseas territory, Commissioner: André Ménard.	
Guadeloupe, 686	292	Saigon, associated state, Ruler: Bao-High commissioner: Jean Letourneau.	
Martinique, 427	276	Pnom-Penh, associated state, King: Sihanouk; Commissioner: Pierre terucci.	
ASIA			
French India, 193	317†	Vientiane, associated state, King: Sisavang; Commissioner: Miguel de Per-	
State of Vietnam, 127,259	22,663†		
Cambodia, 53,668	3,748†		
Laos, 91,428	1,169†		
OCEANIA			
New Caledonia and dependencies, 7,654	63†	Nouméa, overseas territory, High commissioner for the Pacific Islands: Angammaré.	
New Hebrides, 4,633	49	Vila, Franco-British condominium, commissioner: Pierre Anthionoz.	
French Pacific Islands, 1,545	60†	Papeete, overseas territory, Governor: René Petitbon.	

*1951 est. if not otherwise stated.
†1948 est. †1950 est.

Credits under the Investment Fund for Economic and Social Development were redistributed; more was allocated toward helping production, less toward developing roads. The establishment of social services was to be related to territorial resources.

Pfimlin and Oliver Lyttelton, British secretary of state for the colonies, met in Paris to discuss co-operation in Africa, which the Commission Centrale des Territoires d'Afrique (C.C.T.A.) was also concerned.

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French West Africa. (AFRIQUE OCCIDENTALE FRANÇAISE). This group of eight African colonies are overseas territories of the French union, bounded west and south by the Atlantic ocean, north by the Rio de Oro, southern Algeria and the Fezzan, and east by

theast by Chad and Nigeria. The eastern part of the former German colony of Togo, under French trusteeship, is administered separately. Areas and populations are:

	Area (sq. mi.)	Population (1936 census)	(1948 est.)
Mauritania	364,092	383,000	518,000
Senegal	81,081	1,791,000	1,992,000
Upper Volta*	460,308	3,569,000	3,164,000
Ivory Coast	121,892	—	3,070,000
French Guinea	470,656	1,747,000	2,029,000
Dahomey	123,359	3,850,000	2,066,000
Togoland	108,455	2,011,000	2,180,000
Cameroon	44,710	1,351,000	1,505,000
Total	1,774,553	14,702,000	16,524,000
Togoland	20,463	781,000	958,000

*Territory of Upper Volta was formed on Jan. 4, 1947, from parts of Sudan, Ivory Coast and Niger.

Population: (1951 est.) French West Africa 17,380,000; Togoland 1,015,000; mainly Negro; some Arab and Berber admixture in the savannah; European (1951). c. 63,000 (including 50,000 French) in the A.O.F., 841 (1948) in Togoland. Religion: animist 53.4%; Moslem 44.2%; Christian 2.4%. Chief towns (pop., 1948 est., unless otherwise stated): Dakar (capital of A.O.F., 1951 est., 330,000); Saint-Louis (62,900); Abidjan (1952 est., 100,000); Conakry (38,000); Abidjan (36,000); Porto Novo (31,000); Lomé (capital of Togoland, 30,000). High commissioner in A.O.F., Gov. Gen. Bernard Cornut-Latour. Governors: Mauritania, Pierre Mesmer; Senegal, Louis Lyautey; Sudan, Salvador Etcheberry; Upper Volta, Albert Bourgeois; Niger, Fernand Casimir; Ivory Coast, Camille Chautau; French Guinea, Paul Sirieux; Dahomey, Charles Bonfils; Togoland, Laurent Pécoux.

History.—Elections to the territorial assemblies were held March 30, 1952. The Rassemblement du Peuple Français gained seats in the first college. In the second college the Rassemblement Démocratique Africain had successes in the Ivory Coast and in the Sudan, while Sedar Senghor's Bloc Démocratique Sénégalais finally routed Lamine Gueye's Socialists in Senegal, the last-named being victorious only in Dakar. Lamine Gueye ceased to be president of the Grand Council of A.O.F. In 1950 there was a pro-French majority, but the Comité d'Union Française (the independence party) won eight seats. The senatorial elections confirmed these results: the Socialist senators were defeated in Senegal; and the pro-French Parti Togolais du Progrès was victorious in Togo.

Dakar, with a traffic of 3,500,000 tons, became the third largest French port, on a par with Algiers. The tonnage handled at Abidjan (700,000) surpassed all expectation. An agreement was concluded with Canadian and British concerns for exploitation of the iron mines of Fort Gouraud (Mauritania).

Work to promote rice growing was continued in the lower valley of the Senegal. On the Middle Niger 69½ sq.mi. were already irrigated by the Niger office's irrigation scheme: 25,000 African workers were settled there, and production amounted to 200 metric tons of paddy and 2,000 metric tons of raw cotton.

The output of bauxite from the Guinea deposit (Iles de Los) rose to 150,000 metric tons. Plans were envisaged for making the Conakry iron mines yield 1,000,000 metric tons and for exploiting hydroelectricity.

Education.—(1952) A.O.F.: primary schools 1,130, pupils 170,000; secondary schools, pupils 6,435; technical schools, pupils 2,250; students undergoing further education 135; students in France 809. Togo: primary schools 255, pupils 41,163; secondary schools, pupils 828; technical schools, pupils 237; students in France 96.

Finance and Banking.—Note circulation 28,000 fr. C. F. A. Monetary unit: franc C. F. A. (Colonies Françaises d'Afrique)=2 metropolitan francs. In 1952, 350 metropolitan francs=U.S. \$1.00.

Foreign Trade.—(1951) A.O.F.: imports 61,335,000,000 fr. C. F. A. (including 50,700,000,000 fr. from the French union); exports 38,697,000,000 fr. C. F. A. (including 32,500,000,000 fr. to the French union). Principal exports: mainly peanuts and peanut oils 11,650,000,000 fr.; palm kernels and palm oil 1,100,000,000 fr.; coffee 9,500,000,000 fr.; cocoa 6,150,000,000 fr.; bananas 1,120,000,000 fr.; wood 1,100,000,000 fr. Togo: imports 2,330,000,000 fr. C. F. A.; exports 2,698,000,000

fr., mainly cocoa, coffee, palm kernels and copra. **Communications.**—Motor vehicles 32,000. Ships entered 4,500 (including 3,000 at Dakar). Aircraft landed (Dakar) 4,500. (Hu. De.)

Frequency Modulation: see RADIO.

Friends, Religious Society of. This Protestant group, the members of which are also called Quakers, began in England in 1652, when George Fox, a wandering minister who preached the doctrine of the "inner Divine Light" that was in every man, first gained a considerable following. The year 1952 was therefore the tercentenary of the society. During 300 years the Society of Friends had grown to about 180,000 members, most of whom were in England and North America, although there were vigorous groups of Friends in most countries of the world.

Appropriately for this 300th anniversary, a world conference of Friends was held at Oxford, Eng., July 28 to Aug. 6. Nine hundred delegates spent the week in discussion and consideration of action on Quaker concerns such as peace, social and economic justice, race relations, social service and the Quaker faith. There were no official pronouncements, as the 53 Yearly Meetings of Friends are highly independent, but a brief message to "Peoples Everywhere" was issued as a reminder of the failure of war and a call to reconciliation. A statement on the Korean war, asking that new and constructive efforts to establish peace be made, was sent to the foreign offices of the major national powers, to the United Nations secretariat and to the negotiators at Panmunjom, Korea.

While they were in England, many Friends, both delegates and nondelegates, took part in commemoration activities at some of the sites prominent in English Quaker history, including a tour over part of the route of George Fox's travels.

Three books of notable Quaker interest were published in the summer of 1952. Elizabeth Gray Vining, for four years Quaker tutor of the heir to the Japanese throne, wrote an account of her experience in *Windows for the Crown Prince*. *Friends for 300 Years* by Howard H. Brinton was an interpretation of Quakerism's place in Christianity as well as a study of its development over three centuries. John L. Nickalls, librarian of Friends library, London, was editor of a new edition of George Fox's classic *Journal*.

Encouragement of efforts to reduce international tension continued to be a major concern with the Society of Friends. In August the American Friends Service committee published a pamphlet, *Toward Security Through Disarmament*, which suggested ways in which international disarmament might be begun. Local meetings all over the United States, as well as the Friends Committee on National Legislation, took an active part in protesting the Universal Military Training bill introduced into congress in the spring of 1952.

In August Howard H. Brinton resigned as director of Pendle Hill, a Quaker school of graduate studies near Philadelphia, Pa. He had served as director for 16 years, during which time Pendle Hill became well known for its program of informal study and as a centre for conferences and retreats. Through books, articles and addresses he had come to be recognized as a foremost interpreter of Quaker thought. (See also CHURCH MEMBERSHIP.) (Ly. W. R.)

Frozen Foods. Consumption of frozen foods in the U.S. in 1952 was approximately tenfold that of pre-World War II. This sharply rising trend represented a major development in food processing, retailing and dietary culture. The widespread availability of electricity, the vast increase in number of home freezers and community locker plants, the development of freezing technology, and the development of

Storage Holdings of Some Freezer Commodities, U.S.

	(In pounds)	1952*	1951*
Fruits		325,271,000	387,929,000
Juices			
Orange		174,865,000	157,096,000
Other		53,514,000	54,741,000
Vegetables		524,406,000	515,766,000
Cream		42,434,000	39,549,000
Creamery Butter		110,571,000	113,501,000
Eggs		121,754,000	151,293,000
Poultry		182,690,000	166,242,000
Beef		160,179,000	87,898,000
Pork		143,005,000	135,476,000
Lamb and mutton		12,284,000	7,227,000
Veal		12,661,000	7,420,000
Edible offal		57,301,000	46,101,000
Fish and shellfish		189,208,000	166,100,000

*As of Sept. 30.

retail handling of frozen foods, particularly in their application to fruits, juices and vegetables, were major aspects of the growth. The frozen concentrated orange juice business, which began only five years before, grew in 1952 to a volume of 40,000,000 gal. One major company dropped wholesale orange juice prices 20% at one time during the year. A survey of retail grocers indicated that they anticipated that sales of frozen foods would triple in the next five years. Higher ceiling prices were approved in May for most frozen foods. Storage holdings of most frozen foods increased compared with the previous year.

Among the dozen or more frozen fruits, strawberries (129,372,000 lb.), cherries (50,318,000 lb.), peaches and raspberries made up about four-fifths of the total. Green peas were the leading vegetable with nearly two-fifths of the total.

Some much discussed research apparently indicated that the advantages of home freezers were to be found in convenience rather than economy, unless the foods were home produced or obtained at substantial wholesale discounts. Home freezer sales during the first eight months of the year amounted to 521,000 units and for the full year were expected to exceed \$500,000,000 in value.

(J. K. R.)

Fruit. Estimated total U.S. production of deciduous fruits in 1952 was 9% below that of 1951 and 4% less than average for the decade. All major crops, except pears, were below the previous year. A record orange crop was indicated for Florida, whereas grapefruit were less promising than in 1951. Carryover stocks of most canned and processed fruits were substantial but the 1952 canned pack was about 10% smaller than in 1951. Government activities in regard to fruit came to public attention in 1952 in several ways. In March, the marketing order regulating the shipment of oranges from California and Arizona was terminated because of lack of support among growers. In July, price controls were removed from almost all fresh and processed fruits. The tariff on imported dried figs was increased from 2½ to 4½ cents per pound by presidential proclamation in August. Substantial amounts of fresh apples, pears and oranges and some dried fruits, raisins, figs and prunes, were moved to foreign countries under export payment programs. These programs and the increased tariffs on some imports caused Turkey and Greece to protest before the membership of the General Agreement on Trade and Tariffs.

World trade in fruit in 1952-53 seemed likely to fall below the large volume of 1951-52, not because of short crops in exporting areas but because of favourable crops in European importing countries, financial problems and some decline in export subsidy programs. The United Kingdom cut fruit import quotas for the last half of 1952 from nonsterling soft currency countries, mostly western Europe, by 57% to 77%.

Apples.—The 1952 commercial apple crop was indicated at 95,975,000 bu., 13% less than the 110,660,000 bu. of 1951 or average. Prices were higher in 1952 than in 1951, averaging \$2.56 per bushel to producers in September, against \$2.01 per

Table I.—U.S. Commercial Apple Production by Leading States

	(In thousands of bushels)						
State	Indicated 1952	1951	Average 1941-50	State	Indicated 1952	1951	Average 1941-50
Washington	23,725	19,108	29,458	New Jersey	2,050	3,318	2,000
New York	11,610	17,291	14,591	Illinois	1,890	3,995	3,000
Virginia	10,101	9,560	9,486	Idaho	1,596	1,610	1,610
California	8,715	7,832	7,989	Massachusetts	1,540	3,160	2,000
Michigan	5,616	9,085	6,962	Colorado	1,260	1,292	1,260
Pennsylvania	5,460	7,626	6,684	Wisconsin	1,204	1,207	1,207
West Virginia	3,770	3,780	3,769	Connecticut	1,201	1,656	1,201
Ohio	2,809	4,400	3,517	Indiana	1,148	1,806	1,148
Oregon	2,800	2,330	2,766	Maryland	1,116	1,127	1,116
North Carolina	2,053	1,269	1,090				

bushel at the same time in 1951.

Indicated world apple production of 613,418,000 bu., including cider apple, was 20% more than the 1951 crop, but below the 718,640,000 bu. of 1950. International trade in apples in 1951 amounted to 35,000,000 bu., compared with 23,000,000 in 1950 and 33,000,000 bu. before World War II.

Apricots.—The U.S. commercial crop of 1952, produced mostly in California, was 174,000 tons (fresh basis), 5% below the 183,200 tons in 1951 and 24% below the average, 1941-50 of 228,740 tons. The season average price approximated that of 1951. There was less demand by canners, because stock left over from the large 1951 pack of 4,600,000 cases were 5% larger than a year before. The dried apricot pack was larger than the small one of 1951. The world apricot crop was indicated at 637,000 short tons, 3% smaller than in 1951. The world dried apricot pack of 21,500 tons was only 75% of average.

Avocados.—The 1952 crop of California and Florida was moderately larger than the 36,000 tons of 1951, and summer varieties were of very good quality.

Bananas.—U.S. imports of bananas in 1951-52 were 49,000,000 bunches, averaging 50 lb. each, and valued at \$54,432,000. Imports of the previous year were 50,303,000 bunches. In spite of larger demand, only 97,200,000 bunches entered world trade compared with 98,100,000 bunches in the previous year and 111,600,000 bunches pre-World War II.

Cherries.—The total commercial cherry crop of 1952 was estimated at 202,000 tons; the 1951 crop was 230,000 tons, the 1941-50 average was 191,000 tons. The sour cherry crop was only 105,850 tons, compared with a record 158,240 tons in 1951, but slightly above the 98,983 ton average for 1941-50. The larger Western-produced sweet cherry crop was estimated at 95,930 tons, 34% above 1951 and 4% above the average for the decade. The world cherry crop was indicated at 1,239,000 short tons, 2% below 1951 but 21% more than prewar.

Cranberries.—The indicated 1952 crop of 812,500 bbl. was sharply below the 910,300 bbl. of 1951, but exceeded the 1941-50 average of 769,660 bbl. Massachusetts was expected to produce 450,000 bbl. and Wisconsin 195,000 bbl. Prices at harvest were \$19 to \$22 per bushel, compared with \$15 to \$16 per bushel in 1951.

Dates.—In addition to a California crop of about 17,000 boxes, the U.S. imported dates amounting to 41,643,000 lb. in 1951-52.

Figs.—The 1952 U.S. fig crop was of good quality, and the harvest was near in size to the 44,000 tons of 1951, of which 30,000 tons were dried. The U.S. department of agriculture in September announced a program to assist fig producers in the disposal of surplus dried figs.

The world pack of dried figs in 1951 was 171,000 tons, below the 10-yr. average.

Grapefruit.—The indicated 1952-53 crop, with California summer crop unaccounted for, was 37,210,000 boxes, 5% below the 40,370,000 boxes of 1951-52 (not all of which were used) and an average for the previous decade of 51,222,000 boxes.

Table II.—U.S. Orange Production by States

(In thousands of boxes*)

State	Indicated, 1952	1951	Average, 1941-50
Florida			
Early and midseason	46,000	43,800	27,110
Valencias	35,000	34,800	22,830
Tangerines	4,700	4,500	4,100
California			
Navels and miscellaneous	14,200	12,700	17,779
Valencias		25,800	29,861
Texas			
Early and midseason	780	200	2,280
Valencias	420	100	1,341
Arizona			
Navels and miscellaneous	550	350	510
Valencias	500	380	483
Louisiana			
	57	50	314

*Boxes hold 77 lb. in California and Arizona; 90 lb. in other states.

The 1951-52 world grapefruit crop was estimated at 44,997,000 boxes, about 90% of which was U.S. produced.

Grapes.—The U.S. crop of all varieties for all purposes was indicated at 3,092,000 tons, 9% less than the record 1951 tonnage of 3,385,000, but 10% above the average for 1941-50 of 2,807,710 tons. California with a very large part of the total tonnage accounted for much of the decline (2,912,000 tons in 1952; 3,224,000 tons in 1951). World raisin production in 1952 was about 531,600 tons, compared with 460,200 tons in 1951, and the second largest pack on record.

Lemons.—The California lemon crop of 1952-53 was slightly larger than the 12,600,000 boxes of 1951-52. The world 1951-52 crop of lemons was estimated at 29,000,000 boxes, of which 5% were produced outside of the U.S.

Limes.—The Florida lime crop of 1952-53 was indicated as a large one—300,000 boxes, compared with 260,000 the previous year and an average of 204,000 for the preceding decade. The heavy run from June to September brought a lower price than in 1951.

The world crop in 1951-52 was estimated at 3,674,000 boxes, about half of which were produced in Mexico.

Olives.—The indicated olive crop of California was 55,000 or 60,000 tons, below the 64,000 tons of 1951, but above the 1941-50 average of 46,400 tons. The 1951-52 Spanish olive pack of export types was revised downward to 60,600 tons.

Oranges.—The total U.S. early and midseason orange crop was estimated at 61,587,000 boxes, compared with 57,100,000 in 1951 and an average for 1941-50 of 47,992,000 boxes.

The world orange crop of 1951-52 was estimated at 302,790,000 boxes, about 41% of it produced in the U.S., followed by Spain (35,270,000 boxes), Brazil and Italy. The 1952-53 orange crop of Spain was estimated at 1,300,000 tons, 30% more than the previous year, from which 720,000 tons were exported.

International trade in citrus, mostly (85%) oranges but some grapefruit and lemons, amounted to 67,800,000 boxes or about 3% of world production in 1951, compared with 58,000,000 boxes in 1950 and 65,000,000 boxes prewar. The U.S. exported 800,000 boxes of oranges, 1,600,000 boxes of grapefruit and 30,000 boxes of lemons, mostly to Canada.

Tangerines.—The Florida crop for 1952-53 was indicated at 700,000 boxes, compared with 4,500,000 in the preceding year and an average crop of 4,100,000 boxes.

Peaches.—The U.S. 1952 peach crop, estimated at 62,622,000

Table IV.—U.S. Pear Production by Leading States

(In thousands of bushels)

State	Indicated 1952	1951	Average 1941-50	State	Indicated 1952	Average 1951 1941-50
California				Michigan	1,078	966
Bartlett	14,334	13,001	11,009	New York	389	486
Others	1,667	2,000	1,458	Utah	276	198
Oregon				Colorado	228	193
Bartlett	2,230	2,147	1,971	Georgia	221	241
Others	3,354	2,850	2,958	Pennsylvania	200	200
Washington				Ohio	175	200
Bartlett	3,465	3,970	5,231	North Carolina	172	154
Others	1,368	1,584	1,815	Mississippi	162	126

bu., was exceeded slightly by the 63,627,000 bu. of 1951 and substantially by the 1941-50 average of 68,186,000 bu. The California clingstone crop was 19,085,000 bu., 22% smaller than 1951 and slightly under average.

World production was indicated at 104,000,000 bu., about the same as in 1951 but 19% above prewar. The world pack of dried peaches of 12,500 tons in 1951 was only 51% of average.

Plums and Prunes.—The U.S. plum and prune crops of 1952 were comparatively small ones. The California plum crop was 56,000 tons—in 1951 it was 97,000 tons and the 1941-50 average was 79,000 tons. Michigan produced 7,800 tons against 4,800 in 1951 and an average of 5,060 tons.

The so-called fresh prune crop of the Pacific northwest of 86,900 tons, compared with 95,400 tons in 1951 and an average for 1941-50 of 115,000 tons, was more than one-half sold fresh, about one-fourth canned, the remainder frozen or used locally.

The dried prune crop, largely produced in California, was 137,300 tons, small compared with 180,200 tons in 1951 and an average for 1941-50 of 187,500 tons.

The 1952 world production was indicated at 2,678,000 short tons of plums and prunes, fresh basis, compared with 2,976,000 tons in 1951. The 1952 estimated dried prune pack of the leading producing countries in 1952 was 174,400 tons compared with 225,700 tons in 1951, and 21% below the average for 1941-50.

Pears.—The 1952 U.S. pear crop, indicated at 30,879,000 bu., was 2% to 3% above 1951 and average.

World pear production was indicated at 201,783,000 bu., 36% more than 1951, the western European crop rising to 136,000,000 bu., compared with 86,000,000 in 1951 and a prewar average of 70,000,000 bu.

Pineapples.—World production was about 40,000,000 boxes, half of it in the Hawaiian Islands. Florida production was somewhat less than the 10,000 boxes of 1951.

Strawberries.—The U.S. 1952 indicated crop total was 11,972,000 crates of 24 qts. each, compared with 11,779,000 crates in 1951 and an average for 1941-50 of 8,762,000 crates. Prices received by growers were as high as \$7.45 per crate in the first half of May, but for the full season may not have been quite equal to the 1951 average of \$6.58 per crate. (See also FROZEN FOODS; HORTICULTURE.)

(J. K. R.)

Table III.—U.S. Peach Production by Leading States

(In thousands of bushels)

State	Prelim., 1952	1951	Average 1941-50	State	Prelim., 1952	1951	Average 1941-50
California	30,003	35,878	30,698	Ohio	836	907	918
Michigan	3,397	605	3,861	Missouri	675	304	613
North Carolina	3,286	4,980	3,226	Utah	648	800	646
Georgia	2,496	3,975	4,114	Oregon	647	400	576
Pennsylvania	2,280	2,352	2,051	Alabama	585	256	1,036
Colorado	2,053	316	1,881	West Virginia	574	581	531
Virginia	1,909	1,771	1,458	Kentucky	497	72	572
North Carolina	1,648	1,806	1,867	Indiana	472	72	507
Washington	1,624	810	2,086	Tennessee	450	80	707
Wisconsin	1,610	224	1,787	Mississippi	432	255	702
Illinois	1,539	1,044	2,027	Maryland	415	476	499
Kansas	1,363	1,992	1,524	Idaho	402	350	284
New Jersey	1,311	1,312	1,247				
New York	1,311	1,312	1,247				

Furniture Industry. Indications during the third quarter of 1952 were that the 4,000 factories in the United States making wood, metal, rattan and upholstered furniture would match for the year, or even exceed, the all-time record \$1,550,000,000 output of 1951.

Early in the year prices of furniture dropped approximately 5%, chiefly as a result of competition, but at the fall markets in October some stiffening of prices occurred, since lumber and labour costs were advancing and some low-end items were being produced at a loss.

Shipments in Jan. 1952 were at a peak, 46% higher than in Jan. 1951. Then came a deluge of cancellations and hold orders, because of heavy inventories and too heavy receipt of merchandise. February shipments dropped to 14% below the comparable month a year earlier, and March shipments slipped to 18%



FLEXIBLE FURNITURE UNITS popular in 1952 for solving space and budget problems in the one-room apartment. The shelved and partitioned units could be used as storage cabinets and bookcases (by removal of sliding panels)

below. April deliveries, however, were down only 8% compared with April 1951, May shipments 6% and June 4%; then July shipments rose to 1% below and August rose again to even volume with the previous year. As the last quarter is the biggest volume season of the year, indications were that total shipments for 1952 would exceed or at least match those of 1951.

For the eight months ending in August the industry's shipments were only 8% lower in dollar volume than for the same period of 1951, although in February they were 16% lower.

At the January markets most factories presented more new designs than ever before, mostly Modern and French Provincial, many of them correlated groupings and interchangeable pieces suitable for living rooms, bedrooms or dining rooms. At the summer markets additional new designs in the lower price range appeared.

The 4,000 furniture factories in the U.S. are divided by products as follows: wooden furniture 2,250; upholstered furniture 1,390; metal furniture 309; reed, rattan and glass 50. (See also INTERIOR DECORATION.) (J. A. G.)

Furs. Despite prices that were generally lower than in 1951, retail sales of fur garments in the United States in 1952 did not show any improvement over the previous year. In fact, during the first part of the year, excise tax collections showed that business was trailing that of 1951. Going into the last quarter, indications were that the total retail volume would approximate that of the past several years—somewhere around \$250,000,000. Sales of furs had fallen off considerably since the period immediately after World War II, when they topped \$400,000,000 annually.

Mink once again led in popularity, with mutations in strongest demand. Pastels, platinums and the various other mutations sold relatively well in all types of styles—capotes, stoles, jackets, boleros, etc. Prices of standard dark ranch mink were lower in 1952 as demand for brown mink tapered off a bit. Production of mink on ranches in the United States was estimated at about 2,500,000 skins. There were about 500,000 skins raised on Canadian ranches and about 550,000 in the four Scandinavian countries.

In addition to mink, the best-selling furs in 1952 were Persian lamb, sheared raccoon, muskrat, mouton-processed lamb, squir-

rel and Alaska seal. The last named fur was in good demand as a high-fashion fur. In April, at the semiannual skin auction in St. Louis, Mo., prices declined for black sealskin, but only a small degree for the brown seal shades. At the October strong demand from dealers and manufacturers boosted average levels more than 30%, including a sensational rise more than 50% in blacks.

Persian lamb, of which about 4,000,000 skins are imported annually by the United States, was comparatively inexpensive throughout the year, but sold only moderately well. European buyers (mainly from Italy, Britain, Germany and Belgium) competed with U.S. and Canadian buyers for this article at big London sales, and took a considerable number of skins.

Credit became tighter in the fur trade during the year, following a high number of insolvencies during 1951. Bankruptcy continued to occur, although not so frequently. The great difficulty in obtaining credit was said to have held back an extension by manufacturers.

Two legislative acts had an effect on the fur trade. The first was the ban on seven Russian furs, ermine, kolinsky, weasels, marten, mink, muskrat and fox, which started on Jan. 5, 1952. Still permitted entry were several other important Russian furs including Persian lamb, squirrel, marmot and sable. Of the banned items, the most important were kolinsky and muskrat.

The other act was the Fur Products Labeling act, which came effective in August. It was designed to prevent consumer confusion, and specifically prohibited misleading descriptive material in advertisements. No longer could sheared muskrat be called Hudson seal, nor could rabbit be termed a coney or lamb.

In addition, specific regulations were imposed on comparative price advertisements, which required the retailer to substantiate any claims made in featuring his merchandise to the public.

Also of importance in the labelling regulations was the requirement that the country of origin be specified on imported furs. This was specifically aimed at the U.S.S.R. as a country of origin.

There were a few fur trends in 1952. The attempts to reestablish popularity of long-haired furs—principally the fox family—with a little better success than in 1950 and 1951. Black muffs received considerably more emphasis in fashionable New York stores and in leading magazines. Blond furs continued to be sold, including otter, opossum, sheared raccoon, nutria, beaver, but sales were restricted mainly to the larger cities.

Unemployment was high during most of the off season (July to June) and in many shops continued high into the normally busy season. Manufacturers continued to claim that retailers were overcautious in their buying, and retailers continued to blame the 20% federal excise tax for consumer resistance. (E. S.)

Future Farmers of America: see SOCIETIES AND ASSOCIATIONS, U.S.

Galapagos Islands: see ECUADOR.

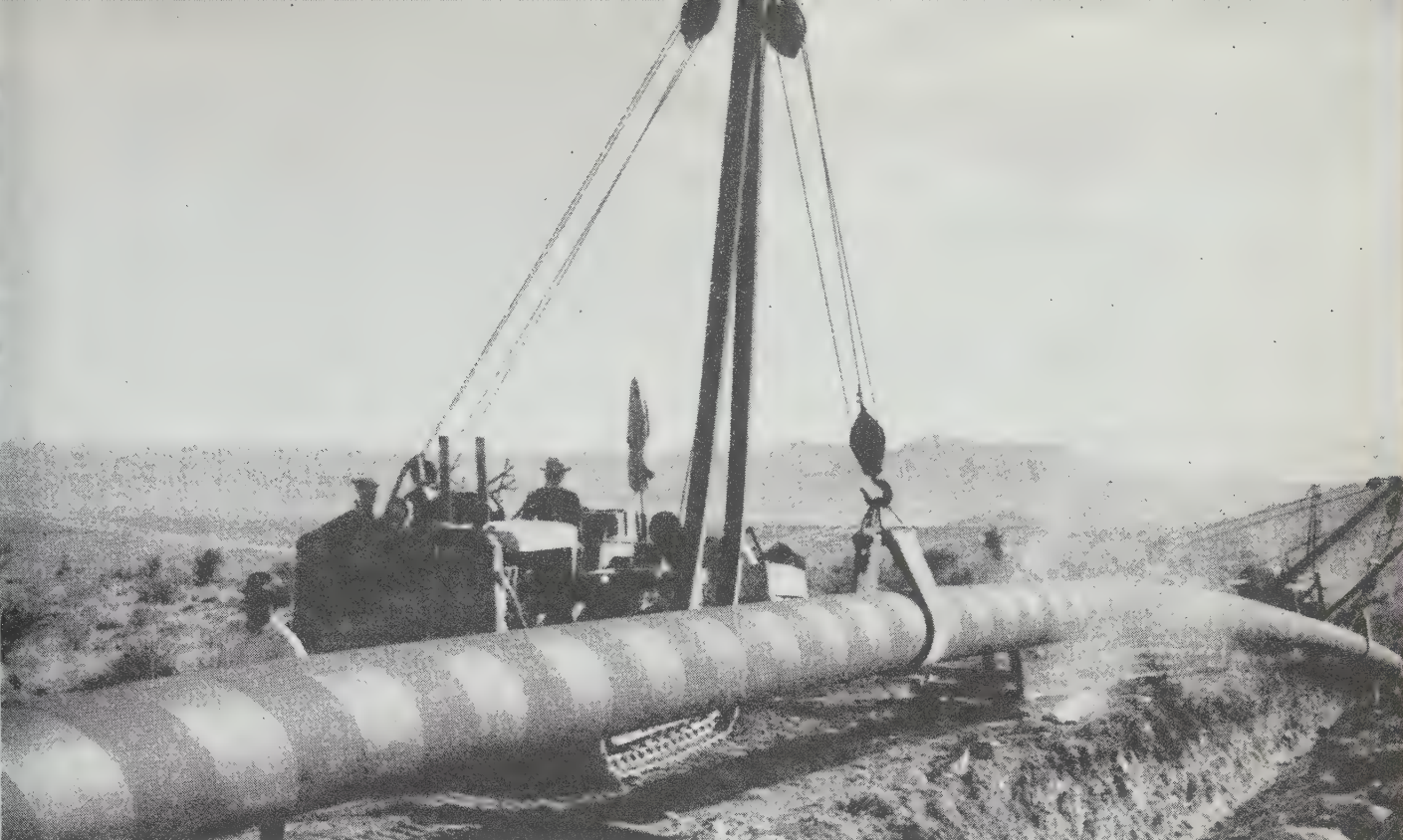
Gambia: see BRITISH WEST AFRICA.

Gambling: see BETTING AND GAMBLING.

Gas, Natural and Manufactured. Only a few of the large producing gas report their output, so no world production data is available.

Natural Gas.—Table I shows the outputs of countries other than the United States where outputs are large enough to be significant.

United States.—The United States is by far the world's largest producer of natural gas, as is indicated by the data reported by the U.S. bureau of mines and summarized in Table II.



NATURAL GAS PIPE LINE originating in Texas and New Mexico, being lowered into place in Arizona. It ran parallel to a line already operating in 1952, and to increase the volume of gas being piped to California

Table I.—Natural Gas Production

	(In millions of cubic feet)					
	1946	1947	1948	1949	1950	1951
Venezuela	331,991	402,585	470,388	499,205	557,262	576,342
Canada	47,886	52,548	58,481	75,008	71,194	78,395
U.S.	27,121	35,258	37,631	41,954	59,244	83,949
Mexico	3,899	5,170	6,145	8,052	8,687	10,043
Other	2,246	3,305	4,153	8,348	17,798	33,775
Total	1,017	890	19,883	20,468	26,613	?
Produced in U.S.	?	?	30,681	32,292	32,292	31,791

Manufactured Gas.—Manufactured gas is made and used in the quantities in areas where natural gas is not available or where the cost of long-distance transmission makes it uneconomical for use in large-scale industrial operations. Outputs of the more important producing countries are shown in Table

Table III.—Manufactured Gas Production
(In millions of cubic feet)

	1946	1947	1948	1949	1950	1951
Australia	31,953	33,393	36,317	36,741	34,707	37,843
Austria	8,136	8,475	11,950	12,671	12,374	10,679
Belgium	28,266	31,698	59,964	57,633	50,852	61,023
Canada	24,240	24,579	25,596	25,893	27,037	28,139
Denmark	10,754	11,569	12,586	13,052	13,476	13,646
France	86,450	86,450	88,992	86,450	85,602	86,026
Saar	?	?	41,106	47,463	46,615	53,395
Germany	?	?	217,396	275,029	325,457	379,701
Italy	?	44,920	53,819	55,938	55,938	66,109
Japan	11,315	17,417	26,274	32,249	37,801	49,412
Netherlands	33,902	41,954	49,581	51,277	56,362	59,328
United Kingdom	469,965	494,967	508,104	522,089	542,429	563,195
United States	553,872	597,097	584,807	563,195	571,246	525,902

manufactured gas. (See also FEDERAL POWER COMMISSION; PETROLEUM.)
(G. A. Ro.)

Gasoline: see PETROLEUM.

Coke-Oven Gas.—By-product coke ovens produce about 100 cu.ft. of gas along with each ton of coke made; 36% is used to heat the ovens and 2% is lost by leakage, leaving 62% to use or sell as commercial fuel. In 1951 coke ovens in the United States produced 1,052,280,603,000 cu.ft. of gas, of which 653,350,680,000 cu.ft. were available for sale or use in steel plants, a volume equivalent to about 10% of the country's natural gas consumption and greater than the output of

Table II.—Production and Consumption of Natural Gas in the U.S.
(In thousands of millions of cubic feet)

	1946	1947	1948	1949	1950*	1951*
Production	6,190.2	6,733.2	7,178.8	7,546.8	8,497.7	9,689.4
Losses and waste	1,020.0	1,067.9	810.2	853.9	801.0	793.2
Returned to ground†	1,057.6	1,092.8	1,220.6	1,273.2	1,396.5	1,438.8
Marketed	4,095.0	4,582.2	5,148.0	5,419.7	6,282.0	7,457.4
Exports	17.7	18.1	18.7	20.1	26.2	?
Consumption	4,077.3	4,426.5	4,945.1	5,195.5	6,026.4	7,102.6
Domestic	650.0	802.2	896.3	992.5	1,198.4	1,474.7
Commercial	237.3	285.2	323.1	347.8	387.8	464.3
Industrial use	960.0	933.8	1,021.5	1,059.6	1,187.5	1,441.9
Iron and steel	478.3	484.9	480.6	427.9	?	?
Refineries	355.0	363.9	441.5	422.4	455.1	537.8
Power plants	57.7	60.5	72.1	84.5	?	?
Other industrial	1,339.0	1,496.1	1,710.0	1,860.7	?	?
Public utilities†	306.9	373.0	478.1	550.1	628.9	763.9
State traffic	?	1,402.0	?	2,007.9	2,543.5	3,242.8

* Preliminary. † Mostly for repressuring oil fields; small amounts of surplus gas are returned to ground for storage. ‡ Includes manufactured gas, and not included in the consumption

Gasperi, Alcide de (1881–), Italian statesman, was born at Tesino, Trentino, April 3, studied at the University of Vienna, was elected to the Austrian parliament as an Italian minority representative in 1911, and after the union of his native province with Italy was elected to the Italian parliament in 1921. In 1926 he was sentenced to imprisonment for anti-Fascist activities. When released in 1931 he became an official of the Vatican library.

During World War II De Gasperi took part in the resistance movement in Rome, and in June 1944 he joined the first Ivanoe Bonomi cabinet as minister without portfolio. Minister of foreign affairs in the second Bonomi (Dec. 1944) and Ferruccio Parri (June 1945) cabinets, he was elected leader of the reconstructed Christian Democratic party and on Dec. 9, 1945, became prime minister. On Jan. 25, 1952, he went to Paris for talks on the European army, and on Feb. 22 was in Lisbon for defense discussions. On May 27, in Paris, he signed the European Defense Community treaty for Italy. On Aug. 31 he spoke at a rally at Boldazza, Bolsena, to celebrate his 40 years of active political life.

De Gasperi arrived in Bonn on Sept. 21 on his first official visit to the German Federal Republic of Germany. On Sept. 24,

at Aachen, he was awarded the Charlemagne prize for outstanding service to the cause of European unity. (See also ITALY.)

Gem Stones. The United States has no commercial output of precious stones (diamond, emerald, ruby or sapphire), but does have a considerable production of semi-precious and ornamental stones. Numerically these fall mostly in the silica group (agate, agatized wood, rose quartz, smoky quartz, chalcedony, chrysoprase, jasper and petrified wood), while the more valuable types include beryl, kunzite, nephrite jade, tourmaline, turquoise and other minor varieties.

Table I shows the imports of gem stones into the United States.

Table I.—U.S. Imports of Gem Stones

	1951		1950	
	Carats	Values	Carats	Values
Rough diamonds . . .	697,981	\$48,704,819	673,699	\$43,655,706
Cut diamonds . . .	480,516	61,858,003	492,741	58,531,035
Rough emeralds . . .	2,706	2,698	12,142	7,991
Cut emeralds . . .	20,148	264,527	9,706	237,446
Pearls, natural . . .		449,379		410,970
Pearls, cultured . . .		2,447,653		3,192,334
Marcasites . . .		88,395		136,768
Other varieties . . .				
Rough . . .		160,609		304,089
Cut . . .		2,686,137		2,429,992
Imitation . . .		12,431,422		9,601,718
Total . . .		\$129,275,642		\$118,508,049

The total value of gem imports is shown in Table II.

Table II.—Value of U.S. Imports of Gem Stones

1942	\$28,520,070	1947	\$110,076,029
1943	72,109,788	1948	115,940,031
1944	77,529,806	1949	84,132,466
1945	114,435,231	1950	118,508,049
1946	189,017,646	1951	129,275,642

There are no statistics on the output of gem stones in the United States, but the value of the crude material has been estimated to be of the order of \$500,000 a year, which would probably be more than doubled after cutting, but even so the total is small compared with imported gems. (See also DIAMONDS; MINERALOGY.)

(G. A. Ro.)

Genetics. The American Society of Human Genetics sponsored a symposium and panel discussion on "Counselling Clinics in Human Heredity" at its annual meeting held at Cornell university in Sept. 1952. Several such clinics were already in operation and steps were taken toward expanding and standardizing the program under competent personnel.

E. Kaplan, W. W. Zuelzer and J. V. Neel studied two families in which a new type of blood pigment, haemoglobin III, was determined by a dominant gene. The individuals heterozygous for this gene and that determining sickle-cell anaemia showed a blood picture intermediate between heterozygotes and homozygotes for the sickling gene.

F. J. Kallmann reported on aging and senile degeneration in identical and dizygotic twins. In some cases the twins lived under similar environments and in other cases under widely different environments. His data indicated that hereditary factors were important in the onset of senile psychoses. He concluded that: "An analysis of fully recorded twin histories cannot fail to be helpful in investigating the numerous challenging problems posed by severe maladjustments to aging and old age."

Mammalian Genetics.—W. E. Castle published linkage maps for the common rat, with six chromosomes having two or more gene loci represented, and five chromosomes with one marker gene each. L. C. Dunn and W. C. Morgan tested samples from several populations of wild mice, *Mus musculus*, by crossing to a tester stock heterozygous for the short-tail gene. The results of the test showed that a large proportion of wild mice

in the populations tested carried a mutant gene at the tested. The finding of several different mutant alleles at a locus indicated a high incidence of hidden genetic variability in the species.

E. D. Garber described a new recessive mutant, bald, and of hairlessness, in the mouse. D. S. Falconer and G. D. reported two new recessive hair mutants, rough and frizz, in the mouse. In the same species J. H. Fielder studied a new colour recessive, taupe, in which the females also showed atrophy of the mammary glands.

C. Stormont reported two new blood group systems in mice, each represented by a pair of alleles at a genetic locus. He demonstrated significant differences in the frequencies of alternative alleles at these loci in two different breeds of mice.

Plant Genetics.—L. Butler published revised linkage maps for the tomato. Each of the 12 chromosomes of the species was marked with at least 11 of the 35 gene loci plotted, and for 10 of 2 chromosomes eight-point maps were presented. L. Butler described a new dominant, golden, in wheat grown from seed exposed to the atomic blast at Bikini and presumably induced by the radiation. C. M. Rick made grafts of a new tomato mutant, wilted dwarf, onto normal plants. He studied the progeny from seed developed in both scion and stock. No alteration of these progeny (Lysenko effect) was found in subsequent generations. Marked alteration of scion resulting from diffusible substances transmitted from stock to scion. N. D. Zinder and J. Lederberg found that a filterable agent was released by the bacterium *Salmonella typhimurium* when attacked by certain bacteriophages. This agent could transfer genetic traits such as drug resistance and fermentation from one bacterium to another. This one-way transmission of genetic traits, which is mentally different from sexual recombination, was termed transduction.

Radiation Genetics.—Studies of the action of several factors in altering the mutation rate induced by various agents continued to occupy the attention of several investigators. L. S. Altenburg and E. Altenburg found that the induced mutation rate in *Drosophila* eggs from ultra-violet light treatment was lowered by posttreatment with photoreactivating agents. H. U. Meyer and H. J. Muller discovered that the ultra-violet induced mutation rate in *Drosophila* eggs was higher when treatment was given in nitrogen than when given in an oxygen atmosphere. When the inducing agent was X-rays, W. K. H. and E. S. von Halle found that radiation of *Drosophila* in nitrogen gave a lower mutation rate for dominant than radiation in oxygen. (See also BACTERIOLOGY.)

BIBLIOGRAPHY.—*Genetics*, vol. 37 (1952); *Journal of Heredity*, 43 (1952); R. B. Goldschmidt, *Understanding Heredity* (1952); S. Srb and R. D. Owen, *General Genetics* (1952). (W. F.)

Geography. **International Affairs.**—The third Pan American Consultation on Geography, which was held in Washington, D.C., from July 25 to Aug. 4, 1952, was attended by representatives of 18 nations of the western hemisphere. The consultation was sponsored by the United States government. The general theme of the conference—Geographic Planning and Resource Development—was carried out through the working sections in 12 separate half-day sessions. The consultation approved technical project no. 29, authorized by the Organization of American States, for the establishment of a technical centre in Latin America for the evaluation of natural resources. The fourth consultation was to be held in Mexico City in 1953.

The eighth general assembly of the International Geographical union met concurrently with the 17th International Geographical congress in Washington, D.C., Aug. 8–15. This was the first time in history that the congress convened in the United States, the previous meeting being in 1904. Registrations totalled

5,500 and more than 1,200 were in attendance. At least 450 of this number came from about 50 foreign countries. All 37 of the countries adhering to the union sent official delegates, and representatives were present also from several observer countries. The largest overseas delegations were from Great Britain, France, Germany, Italy and Brazil.

During the eight-day congress 31 individual sessions were held by the various commissions and sections of the International Geographical union, and symposia were conducted on tropical Africa and world food supply. Rio de Janeiro, Brazil, was selected as the site for the 18th International Geographical Congress for 1956.

The National Council of Geography Teachers held its 38th annual meeting in Washington, D.C., on Aug. 6-7. During the three general sessions and two special assemblies, approximately 30 papers were presented by members on subjects centering around the general theme of "Social, Economic, and Political Survival and Progress."

The Association of American Geographers also held its 48th annual meeting in Washington, D.C., on Aug. 6-7. There were papers presented on various topics during the three regular sessions and discussion panels were conducted on cartography and area studies.

The American Geographical Society of New York, celebrating its centennial in 1952, closed its ceremonies in New York City on Aug. 4 and 5 with a formal program in which five gold medals were awarded to distinguished world geographers. During the year the society's quarterly, the *Geographical Review*, published many scholarly articles, and the monthly publication *Focus* released studies on such timely topics as Pakistan, sources of the arctic, Great Britain, French Morocco, Venezuela and New York city. The society also published in 1952 its centennial volume *Geography in the Making: The American Geographical Society, 1851-1951*.

Geography in the Government.—With the exception of the army map service, the quartermasters corps and a few other U.S. government agencies, geographers are not concentrated in special branches of government service but are scattered throughout the many agencies. The great volume of geographic work being carried on by these government agencies during 1952 may be illustrated by a few examples selected from the department of state, the department of the interior and the department of commerce.

In the department of state the office of the geographer, established about 1921, was used to provide geographic data on boundary and territorial problems, immigration quotas, mapping matters, delimitations and claims to territorial waters, and numerous other aspects of geography. Progress was made during the year on the *Atlas of Ignorance*, designed to point out the lack of systematic data for many parts of the world. The Foreign Service institute of the department added to its staff a professor of geography, whose duties were to participate in the planning of a variety of programs for Point Four personnel, language-and-area officers, newly appointed foreign service officers and other international affairs specialists.

In the postwar years the department of the interior had emphasized resource conservation and development. This type of program was based upon a wide variety of studies and surveys. Some of these studies included reports on the regional economy and resources of Alaska, the Pacific northwest, the Colorado river-Great basin, the southwest and the Missouri basin. In addition the department had co-operated in interagency surveys of regional resource development in New England and in the basins of the Arkansas, White and Red rivers. Another important series of studies considered the water resources of the Columbia river, the central valley of California, the Missouri

river basin and the Colorado river.

The department of commerce through its area development division worked primarily in the fields of area and regional economic analysis, industrial development and dispersion, river basin development and urban development. During the year it initiated a series of studies designed to show the significant economic changes that had taken place in the geography of the national economy. The first of this series was published as the *Economic Development Atlas—Recent Changes in Regions and States*.

Geography in the Colleges and Universities.—*The Directory of College Geography of the United States*, published in May 1952, showed that nearly 5,500 courses in geography were being taught in 873 institutions of higher learning in the country, an increase of 2,000 courses and 146 institutions over the 1951 report. The *Directory* also revealed that the 34 universities which gave graduate work in geography had 325 candidates for the master's degrees and 187 candidates for the doctor's degrees. In connection with the Pan American Consultation on Geography and the International Geographical congress, a detailed study on the *Status of Geography in the United States, 1950-1952* was prepared and issued by the Pan American consultation as document 8. In the part of the report dealing with geography in institutions of higher learning, considerable detail was given concerning the work of leading departments of geography and their staffs, and the published research and research in progress by both faculty and graduate students. (See also CARTOGRAPHY; EXPLORATION AND DISCOVERY; NATIONAL GEOGRAPHIC SOCIETY; SOCIETIES AND ASSOCIATIONS, U.S.) (E. J. Fo.)

Geology. Trends in geologic advances and interests are best indicated by the text and reference books which have been published and by articles printed in professional journals. A noticeable development in 1952 was the appearance of numerous papers and books written by European, Asiatic and South American geologists describing and discussing the results of renewed world-wide activity by geologists of most nations. Also a greater number of important papers and books on mineral deposits and natural resources were published in 1952. The demand for well-trained graduates was greater than in 1951, and fewer geologists were graduated in 1952.

General and Historical Geology.—Both physical and historical geology were covered in a new text, *Geology* by O. D. von Engel and Kenneth E. Caster, and in *Introduction to Geology* by E. B. Branson and W. A. Tarr, revised by Carl C. Branson and W. D. Keller. Revised editions of *Principles of Physical Geology* by Arthur Holmes and *An Introduction to Historical Geology*, 6th ed., by William John Miller also were published.

Two vocabularies were made available. The Brazilian publication *Vocabulário Geológico* by Viktor Leinz and Josué Camargo Mendes contained synonyms in English and German. *Diccionario Minero, Metalurgico, Geologico, Mineralogico, Petrografico y de Petroleo* by Alejandro Novitzky, published in Argentina, contained English terms with their corresponding equivalents in Spanish, French, German and Russian.

Geologisch-Mijnbouwkundige Bibliografie van Indonesië by J. F. Steenhuis (1951), a bibliography on geology and mining in Indonesia, and *Bibliography and Index of Geology Exclusive of North America*, vol. 15, by Marie Siegrist and Marcia Lakeman were published.

Geomorphology, Glaciology and Marine Geology.—*South African Scenery—A Textbook of Geomorphology*, 2nd ed., by Lester C. King drew text matter and illustrative material from South Africa. In the *Bulletin* of the Geological Society of America there appeared "Annotated and Illustrated Bibliographic Material on the Morphology of Rivers" by P. F.

Nemenyi and "Dynamic Basis of Geomorphology" by Arthur N. Strahler.

A well-illustrated book, *Alpine Glaciers* by A. E. Lockington Vial was published in England.

Francis P. Shepard's paper, "Composite Origin of Submarine Canyons" in *Journal of Geology*, as well as papers on more specific problems, which appeared in *Journal of Geology* and the *Bulletin* of the American Association of Petroleum Geologists, attested to the continued interest in marine geology.

Stratigraphic Geology and Sedimentation.—More important publications on stratigraphic geology included: a chart prepared by Ralph W. Imlay, "Correlation of the Jurassic Formations of North America, Exclusive of Canada," published in the *Bulletin* of the Geological Society of America; "Sedimentation and Stratigraphy of the Upper Huronian of Upper Michigan" by S. A. Tyler and W. H. Twenhofel, published in the *American Journal of Science*; and "Correlation Chart of the Geologic Formations in Venezuela," prepared by the committee on geology of the Venezuelan Petroleum convention.

Published in *Journal of Geology* was a paper by W. C. Krumbein and R. M. Garrels, "Origin and Classification of Chemical Sediments in Terms of pH and Oxidation-Reduction Potentials," and a paper in *Journal of Sedimentary Petrology*, "Turbidity Currents, Graded and Non-Graded Deposits" by P. H. Kuenen and Henry W. Menard.

Petrology and Petrography.—A comprehensive study of the rockmaking processes and interpretation of new factual data was presented by T. F. W. Barth in *Theoretical Petrology*. An explanation of the nature of coal petrology, as carried on by polished surface and incident light methods, was given in *Atlas für Angewandte Steinkohlenpetrographie*, edited by the German Coal Mining management. James A. Noble in *Journal of Geology* discussed "Evaluation of Criteria for the Forcible Intrusion of Magma."

Structural Geology and Field Geology.—In *Geologic Structure and Orogenic History of Venezuela*, Walter H. Bucher described the structural units of Venezuela as outlined on the author's *Geologic-Tectonic Map of Venezuela* (1950). An enlarged second edition of *The Dynamics of Faulting and Dyke Formation, with Applications to Britain* (1951) by E. M. Anderson was published in London.

"Relations Between the Mechanism of the Formation of Fault Troughs and Volcanic Activity" by B. G. Escher and "Our Shrinking Globe" by Kenneth K. Landes were two important papers in the *Bulletin* of the Geological Society of America. The structural history of the Alps was presented by Ernst Kraus in *Die Baugeschichte der Alpen*, Teil I.

Plane Table Mapping by Julian W. Low and a fifth revision of *Field Geology* by Frederic H. Lahee were published.

Petroleum Geology.—*The Economics of United States and World Oil* by E. Ospina-Racines represented a contribution to the study of international economics of the oil industry. In a paper in *Erdöl und Kohle*, "Beiträge zur Erdölgeologie Südamerikas, I. Das obere Amazonas-Becken," J. E. Rassmuss discussed petroleum geology of the Amazon basin. *Oil Shale and Cannel Coal*, vol. 2 (1951), edited by George Sell, was a collection of papers contributed to the Second Oil and Cannel Coal conference. Of the numerous articles on petroleum geology, the following papers in the *Bulletin* of the American Association of Petroleum Geologists were significant: "Geology and Oil Fields of Brazil" by Earle F. Taylor, "Australian Oil Possibilities" by Frank Reeves, "Geological History and Petroleum Possibilities of the Philippines" by Earl M. Irving, "Early Diagenesis of California Basin Sediments in Relation to Origin of Oil" by K. O. Emery and S. G. Rittenberg, "Hydrological and Thermal Aspects of Petroleum Occurrence" by I. I. Chebotarev and

"Significance of Oil and Gas Seeps in World Oil Exploration" by Walter K. Link.

Mineral Deposits.—Rocks, soils and mineral deposits originate through weathering processes and sedimentation was treated by Paul Niggli in *Gesteine und Mineralagerstätten, Band II, Exogene Gesteine und Mineralagerstätten*. Much fundamental material and factual information was made available in three volumes of *Les Pegmatites-Las Pegmatites Gráficas*, a translation of the work of the Russian geologist A. Fersman. W. Uytendogaardt introduced *Tables for Microscopic Identification of Ore Minerals*.

Geologic Reconnaissance of the Mineral Deposits of Thailand by G. F. Brown and others and *The Geology and Mineral Resources of Jamaica* (1951) by H. R. Hose also became available.

The geology, recovery, uses and economics of antimony and titanium were well described in *Antimony*, 3rd ed. by C. Wang, and "Titan," *Gmelin's Handbuch der Anorganischen Chemie*, System-Nummer 41 (1951).

Atlas of World Mineral Resources edited by William F. Royen and Oliver Bowles, *Report of the President's Material Policy Commission* (Paley commission) and the *Future of Our Natural Resources* edited by Stephen Raushenbush were three comprehensive reports on natural resources.

Geochemistry.—Facts and ideas concerning the chemistry of the earth were summarized by Brian Mason in *Principles of Geochemistry*. R. W. van Bemmelen discussed "The Endogenic Energy of the Earth" and Z. L. Sujkowski discussed "Average Chemical Composition of Sedimentary Rocks" in the *American Journal of Science*.

The use of geochemistry and biogeochemistry as an aid in prospecting was discussed in papers appearing in *Economic Geology and the Bulletin of the Society of Economic Geologists*. "Abnormal Copper, Lead, and Zinc Content of Soil Near Metalliferous Veins" by Lyman C. Huff and "Preliminary Studies of the Biogeochemistry of Iron and Manganese" by Harry Warren, Robert E. Delavault and Ruth I. Irish. (See also MINERALOGY; OCEANOGRAPHY; PALAEONTOLOGY; SEISMOLOGY) (T. H. K.)

George, Walter Franklin (1878–), U.S. senator. He was born on Jan. 29 at Plover, Ga. He took his bachelor's and law degrees from Mercer University, Macon, Ga., in 1900 and 1901 respectively and began practising law at Vienna, Ga., in the latter year. From 1901 to 1912 he was solicitor general of a state judicial circuit, and from 1912 to 1917 judge of the circuit's superior court. In 1917 he became associate justice of the supreme court of Georgia, resigning in 1922 when he was elected U.S. senator from Georgia to fill a vacancy. He was re-elected in Nov. 1950 for a sixth consecutive term (1951–57). In 1938 Pres. Franklin Roosevelt's attempt to purge George as a reactionary failed when the senator won the Democratic nomination easily over Roosevelt's candidate. Thereafter a prominent member of anti-New Deal Democrats, George became known for his vehement criticism of government spending.

In 1950–52 he was also a leader in senate attacks on the state department and U.S. foreign policy. George was particularly critical of additional appropriations for foreign military and economic assistance, declaring in Aug. 1951 that if European nations "can't stand on their own feet now, there is no use . . . thinking they will do it later."

At the Democratic national convention at Chicago in July 1952, George made the nominating speech for Sen. Richard Russell, his colleague in the senate and one of the leading Democratic candidates in the preconvention race.

orgia. Georgia, popularly known as the "empire state of the south," is located in the south Atlantic region of the United States. It has an area of 58,876 sq.mi. and had a 1950 population of 3,444,578. Of the population, 54.7% was rural and 45.3% urban; 68.6% was native white and 30.9% Negro. The chief cities and their 1950 populations were: Atlanta, the capital, 331,314; Savannah, 119,638; Columbus, 79,111; Augusta, 71,508; and Macon, 70,252.

History.—The general assembly was in session from Jan. 14 to Feb. 12, 1952. It enacted a law providing that in the 1952 election the names of presidential electors should appear on the ballot under a party heading only, without the names of nominees for president and vice-president. Another enactment provided for assistance to totally disabled persons under the federal social security program. Congress was petitioned to call a convention to amend the United States constitution by placing a limit of 25% on federal income, inheritance and gift taxes. Defeated in the November election was a state constitutional amendment requiring all parties to nominate candidates for statewide offices in a primary election based on county-unit votes rather than on popular votes. The following constitutional amendments were ratified: (1) the requirement that there be appropriated for highway purposes each year an amount not less than the total revenues from motor fuel and vehicle licence taxes collected during the preceding fiscal year; (2) the withdrawal of the state from the ad valorem tax field except to the extent of one-fourth mill for regulatory purposes; and (3) the provision that amendments affecting only a county or municipality be ratified or rejected only by the voters of the local unit. On Jan. 1, 1952, Atlanta annexed an area which made it three times its former size and which increased its population by about 100,000.

Principal state officials during the year were: governor, Herman E. Talmadge; lieutenant governor, S. Marvin Griffin; secretary of state, Ben W. Fortson, Jr.; comptroller general, Zach Cravey; attorney general, Eugene Cook; treasurer, George Hamilton; commissioner of agriculture, Tom Linder; commissioner of labour, Ben T. Huiet; and superintendent of schools, M. D. Collins.

Education.—During the school year 1951-52, there were 3,290 public schools in Georgia with an enrolment of 806,243 pupils and a teaching force of 25,642, according to the state department of education. Per capita expenditures by the state were \$171.49 for white children and \$108 for Negro children. There were 2,008 elementary schools (815 for white children and 1,193 for Negro children) with an enrolment of 618,906 (400,794 white children and 218,112 Negro children) and 17,651 teachers (11,678 white and 5,973 Negro). There were 1,282 high schools (720 for white children and 562 for Negro children) with an enrolment of 187,337 (141,578 white and 45,759 Negro children) and 7,991 teachers (6,103 white and 1,888 Negro).

During the fall quarter of 1952, the 15 units of the state university system had an enrolment of 16,880 regular students and 6,173 part-time or irregular students. Of the regular students, 1,887 were enrolled in 3 state Negro colleges. Total expenditures of the state government for education during the year ending June 30, 1952, were \$103,411,393, compared with \$60,000 the preceding year.

Public Insurance and Assistance, Public Welfare and Related Programs.—Public assistance programs during the fiscal year ending June 30, 1952, amounted to \$47,157,020, an increase of approximately 19% over the previous year, according to the state department of public welfare. Age assistance amounted to \$33,873,829; aid to the blind, \$1,198,500; and aid to dependent children, \$12,084,997.50. In June 1952, a total of 95,271 persons received old-age assistance with an average allowance of \$31.25 (compared with 101,684 persons in June 1951, with an average allowance of \$24.17); 2,973 blind persons received benefits averaging \$36.25 (compared with 2,868 persons in June 1951, receiving benefits averaging \$28.99); and 47,131 dependent children received benefits averaging \$19.95 (compared with 49,113 children in June 1951, receiving benefits averaging \$18.24). The United States bureau of labour statistics reported 14,700 persons receiving unemployment compensation in June 1952, under the Georgia law, compared with 15,500 in June 1951. In June 30, 1952, there were 6,417 prisoners in the state and county institutions under the control of the state board of corrections. Get allotments to this board for the fiscal year were \$1,314,348. There was an average of 584 boys and girls in state training schools during the 1951-52 fiscal year.

Communications.—As of June 30, 1952, the state highway department reported that there were 91,739 mi. of public roads in Georgia and an estimated additional 5,200 mi. of city streets and alleys. The state highway system extended 15,229 mi., and county roads extended 76,510 mi. For the fiscal year ending June 30, 1952, the state highway department expended \$49,165,358.

On Dec. 31, 1951, there were 6,021 mi. of railroads in Georgia, according to the Interstate Commerce Commission. The Georgia Public Service commission reported that there were 656,611 telephone stations in the state as of July 31, 1952. There were 1,808 mi. of federal airways in Georgia on September 30, 1952, according to the Civil Aeronautics administration, and 110 airports.

Banking and Finance.—On June 30, 1952, there were 403 banks in Georgia (51 national and 352 state) with deposits of \$1,958,197,000 and total resources of \$2,128,088,000, according to the Federal Deposit Insurance Corporation. This included savings and loan associations which accepted deposits.

The Georgia Savings and Loan league reported that there were 72 savings and loan associations on June 30, 1952, of which 60 were chartered by the federal government and 12 by the state. These 72 associations had resources of approximately \$340,000,000.

Total receipts of the state government for the fiscal year ending June 30, 1952, were \$228,876,799; budget allotments for the period were \$217,110,506. On June 30, 1952, the state had a net surplus of \$30,214,585.

Agriculture.—The U.S. department of agriculture reported that the cash income of Georgia farmers for 1951 was \$627,477,000, an increase of 18.7% over the income for 1950 and 55.6% above the ten-year average of 1941-50. Livestock and livestock products accounted for 38.1% of the cash income.

The state forestry commission estimated the total raw value at the mill of forest products harvested in Georgia in 1950 to be \$167,021,734.

Table I.—Principal Crops of Georgia

Crop	Estimated 1952	1951	Average 1941-50
Cotton, bales	720,000	931,000	686,000
Corn, bu.	36,674,000	49,536,000	44,673,000
Peanuts, lb.	402,000,000	595,800,000	698,300,000
Tobacco, lb.	125,620,000	137,361,000	92,991,000
Potatoes (sweet), bu.	1,960,000	1,625,000	5,781,000
Hay, tons	528,000	610,000	731,000
Oats, bu.	14,688,000	10,296,000	13,509,000
Wheat, bu.	2,318,000	1,794,000	2,162,000
Peaches, bu.	2,496,000	3,975,000	4,114,000
Pecans, lb.	40,300,000	51,500,000	29,443,000
Potatoes, Irish, bu.	456,000	483,000	1,217,000
Lespedeza (seed), lb.	5,700,000	6,400,000	9,270,000

Source: U.S. Department of Agriculture.

Manufacturing.—The U.S. bureau of labour statistics estimated that there were 301,200 persons employed in manufacturing in Georgia in June 1952, compared with 300,400 in June 1951. Salaries and wages received by persons employed in manufacturing in Georgia in 1950 amounted to \$638,809,000. A value of \$1,227,442,000 was added by

Table II.—Principal Industries of Georgia

Industry	Value added by manufacture		
	1950	1949	1947
Textile mill products	424,356,000	314,589,000	398,023,000
Food and kindred products	145,472,000	142,215,000	133,448,000
Lumber and products, except furniture	123,454,000	80,039,000	88,466,000
Paper and allied products	96,633,000	77,313,000	54,207,000
Chemicals and allied products	74,761,000	51,211,000	77,043,000
Stone, clay and glass products	34,045,000	28,272,000	26,651,000

manufacture in 1950 compared with \$1,001,242,000 in 1949 and \$1,015,999,000 in 1947. (M. W. H. C.)

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in Georgia in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Georgia

Table III.—Mineral Production of Georgia, 1949-1950

Mineral	1949 (Short tons)		1950	
	Quantity	Value	Quantity	Value
Barite	50,000	\$ 465,000	?	?
Clays	1,983,000	16,653,000	2,325,000	\$20,938,000
Iron ore	256,000	693,000	226,000	677,000
Sand and gravel	984,000	758,000	1,212,000	937,000
Stone	4,156,000	8,428,000	6,145,000	11,917,000
Talc	49,000	580,000	71,000	774,000
Other minerals . . . . .	...	7,931,000	...	...
Total		\$35,508,000		\$44,157,000

ranks second among the states in the production of bauxite and mica, and third in clays and barite, and stands 32nd in value of output, with 0.37% of the U.S. total.

Georgia Warm Springs Foundation: see SOCIETIES AND ASSOCIATIONS, U.S.

German Literature. Studies of recent history and reflections of contemporary human experience took the foreground among the 1952 publications. A slow

process was gaining ground toward reaching conclusive judgments about the crisis of the modern world and, especially, about the German aspects of war, revolution and dictatorship.

Toward this end, two comprehensive analyses of World War II were written by officers of the former German general staff. Kurt von Tippelskirch, in *Geschichte des Zweiten Weltkriegs* (Athenäumverlag, Bonn) presented the history of the war in the style of a precise report, which, nonetheless, permitted insight into the personal engagement and the responsible criticism of a highly qualified expert. Walter Görnitz' *Der Zweite Weltkrieg* (Steingrübenverlag, Stuttgart, 2 vol.) was the work of an equally objective historian, but it was more passionately written and considered more deeply the political preconditions of the war. These authors concurred in their documented condemnation of Adolf Hitler's fateful interference with strategy and left no doubt about their rejection of his political system.

Legislation concerned with Germany's contribution to western defense formed the centre of political discussions during the year. The documents concerning it were ably edited by the Institut für Staatslehre und Politik of the University of Mainz in *Der Kampf um den Wehrbeitrag* (Isarverlag, Munich). The debate about the question of which type of soldier should be the aim of future military education in Germany was intelligently stimulated by Werner Picht's *Vom Wesen des Krieges* (Vorwerk Verlag, Stuttgart) which dealt with the transformations demanded of the military by modern society, warfare and ethics. Experts joined in composing *Europa und die Deutschen Flüchtlinge* (Institut für Öffentliche Angelegenheiten, Frankfurt), a book of essays and documents concerning the social, psychological and economic problems of reintegrating the German expellees into the western world.

Books revealing moral and intellectual success in evaluating personal experience were leading the efforts at taking a new fundamental orientation. An outstanding contribution was the report of Hans Gollwitzer, *Und Führen wohin Du nicht willst* (Kaiser Verlag, Munich). This Protestant minister related his experiences as a prisoner of war in the U.S.S.R., from which he returned only in 1950. Together with Dietrich Bonhoeffer's religious and ethical thought in *Besinnung* (Kaiser Verlag, Munich), it was the most constructive Protestant contribution of the year's literature. Among German Catholic writers, Romano Guardini, in his academic speech *Verantwortung* (Koesel Verlag, Munich), took up the problem of German anti-Semitism as a continuing challenge to the courage of facing the truth and of taking responsibility. Giselher Wirsing, in *Schritt aus dem Nichts* (Diederichs, Düsseldorf), presented a diagnosis of the time, which revealed a serious reckoning with the past. The situation of Germany in world affairs was briefly but intelligently discussed by Wilhelm Wolfgang Schütz, the former London correspondent of the *Neue Züricher Zeitung*, in *Deutschland am Rande Zweier Welten* (Deutsche Verlagsanstalt, Stuttgart).

The autobiographical element prevailed even among achievements of literary merit. Peter Bamm, a surgeon, turned his report about a unit of the medical corps into brilliant and convincing literature setting forth the idea of humanity and the meaning of the service to it (*Die Unsichtbare Flagge*, Koesel Verlag, Munich). Werner Bergengruen's novel *Der Letzte Rittmeister* (Nymphenburger Verlagshandlung, Munich) was the sensitive and thoughtful portrait of the noble soldier of a bygone era. As in his novel on the power of powerless men, *Die Macht der Ohnmächtigen* (Hegner, Cologne), Edzard Schaper, in his new book *Hinter den Linien*, contrasted, with the support of personal experience, man's religious capabilities and the forces unleashed and controlled by oppression and terror. Gertrud von LeFort supplemented her literary work with a collection of autobiographical and critical essays, *Aufzeichnungen und Erin-*

nerungen (Benziger, Cologne). Leonhard Frank published an autobiographical novel, *Links wo das Herz ist* (Nymphenburger Verlagshandlung, Munich), the epilogue of a half century of revolutionary passion, hope and deception, presented with simplicity and with an almost ironical Biedermeier touch. Karl Kraus, the eminent Viennese critic, never published himself what, in 1933, he wrote about the third reich, with the exception of the one sentence "Nothing comes to my mind about Hitler." The book explaining this satirical statement came out during 1952 under the title *Die Dritte Walpurgisnacht* (Koesel Verlag, Munich).

Philosophic thought was still dominated by the contrast between the positions of Martin Heidegger and Nicolai Hartmann. The latter's work was brought to completion by the publication of his book on teleological thought, *Teleologisches Denken* (de Gruyter, Berlin), a critical analysis of metaphysics. A Catholic priest, Gustav A. Wetter, contributed an indispensable history of the intellectual bases of soviet policy, *Der Dialektische Materialismus* (Herder, Freiburg). The minutely documented work traced the development of soviet thought to 1951 and ended with a thorough and, in some points, surprising comparison of Thomism and dialectic materialism. On the borderline between philosophy, psychiatry and sociology, the neurologist Wilhelm Küttemeyer presented a cultural diagnosis of present-day Europe, *Die Krankheit Europas* (Suhrkamp, Frankfurt). This concern about the critical state of modern man and society was most evident from the discussions about the role of art in the modern world. It was in this spirit of the consciousness of crisis that the art historian G. F. Hartlaub probed into the domain of magic and superstition in a book of essays, *Das Unerklärliche* (Koehler, Stuttgart). The republication of Ernst von Lasaulx, *Philosophie der Geschichte* (Oldenbourg, Munich) made accessible the book, in response to which Jacob Burckhardt conceived his criticism of culture in *Force and Freedom*.

The interest in Hugo von Hofmannsthal was supported by the continued publication of his collected works (Fischer, Frankfurt), that in Rudolf Borchardt by a volume of essays *Villa* (Suhrkamp, Frankfurt) and a selection of poetry (Bennigsen, Schwabe, Basle). The complete edition of the letters exchanged between Richard Strauss and Hugo von Hofmannsthal, *Briefwechsel* (Atlantis, Zürich) gave a valuable understanding of the modern theatre and was also a testimony of the unique relationship between an outstanding composer and a great poet. Hofmannsthal's scenario for the Strauss opera, *Danae* (Fischer, Frankfurt), was published simultaneously with the performance of the opera at the Salzburg festivals. Hofmannsthal's concept of the plot had been the source of inspiration for Wolf von Niebelschütz in his novel *Der Blaue Kammerherr* (Suhrkamp, Frankfurt), a work of *poésie pure*, which, written with brilliant sophistication, reflected through the ironical distance of rococo society and mythological play the human concern in a world of disorder, ambition and self-delusion. The lyrical poems of Karl Krolow, *Die Zeichen der Welt* (Deutsche Verlagsanstalt, Stuttgart), gave evidence of a genuine talent. Hans Egge Holthusen pursued the road of T. S. Eliot in his new book of verse *Labyrinthische Jahre* (Piper, Munich). Friedrich Georg Jünger published a book of prosody, *Rhythmus und Sprache im deutschen Gedicht* (Klett, Stuttgart), in which he re-examined constructively the problems of the lyrical form. The same author proved himself a master of a simple and transparent narrative prose by a book of short stories, *Die Pfauen* (Hanser Verlag, Munich). Ernst Wilhelm Eschmann's *Alkestis* (Heliopolis Verlag, Tübingen) revealed its author as a dramatist in his own right, who was able to integrate modern experience and language with the classical topic. Two newcomers among novelists deserve serious attention: the Swiss Elisabeth Aman, who

came out with a novel, *Das Vermächtnis*, and a short story, *Manuel und das Mädchen* (Hermann Rinn, Munich), and George Munk because of his novel *Am Lebendigen Wasser* (Inselverlag, Wiesbaden). Both of these authors combined the best heritage of German prose with a thoughtful awareness of the predicaments of 20th-century man.

In literary scholarship Friedrich Sengle presented a comprehensive re-evaluation of *Wieland* (Metzler, Stuttgart), which he followed up with a criticism of the German historical drama, *Das Deutsche Geschichtsdrama* (Metzler, Stuttgart). The history of German literature from the origins to the present was treated by a co-operative work, *Annalen der Deutschen Literatur* (Metzler, Stuttgart), edited by Heinz Otto Burger and supplemented by comparative chronological tables. Theodor W. Adorno's *Versuch über Wagner* (Suhrkamp, Frankfurt) was a criticism significant beyond its subject, the historical position of Richard Wagner, because of its way of approach, which combined musicological and literary interpretation with modern Hegelian dialectic. The boundaries between established disciplines were broken in a different way, although not less successfully, by the art historian Hubert Schrade in *Götter und Menschen Homers* (Kohlhammer, Stuttgart). Otto H. Förster offered in *Entfaltung und Zerfall* (Seemann, Cologne) a cultural interpretation of German art. It was a constructive contribution to the debate which Sedlmayr's *Verlust der Mitte* had started out and it indicated possibilities of overcoming historical relativism by an intelligently comprehensive approach to the historical subject. In his *Humanitas* (Glock und Lutz, Nuremberg) Erich Przywara presented an embracing and thorough criticism of the humanistic movements of thought which shaped the 20th-century German mind. *Literaturmetaphysik* and *Die Plakatwelt* (Deutsche Verlagsanstalt, Stuttgart), Max Bense's essays on literary criticism and modern literary problems, took issue, from the viewpoint of an existentialist philosopher, with the transformation of thought and letters in modern technological society.

The Hamburg edition of Goethe, *Goethes Werke* (Christian Wegner, Hamburg, 14 vol.) was almost completed. Edited by Erich Trunz, it was distinguished by the inclusion of excellent comments, of well selected bibliographies, and of Goethe's own statements about his works. Josef Nadler's edition of *Hamanns Werke* (Herder, Vienna), of which three of six volumes were published, made available hitherto unknown writings. Hermann Hesse, *Gesammelte Dichtungen* (Suhrkamp, Frankfurt) included all of the author's literary work to 1950.

A broad scholarly undertaking, *Orbis Academicus* (Karl Alber Verlag, Freiburg), was devoted to the history of the problems of knowledge. They were presented by documents with interconnecting analyses. The organization of the series was guided by the aim of furthering interdisciplinary connections, general education and competent scholarly progress. The volumes published included *Geschichtswissenschaft* by Fritz Wagner, *Soziologie* by Helmut Schoeck, *Evolution* by Walter Zimmermann and *Die Ostkirche* by Ernst Benz. To the historian of art and culture, the *Reallexikon der Deutschen Kunstgeschichte* (Metzler, Stuttgart) offered an encyclopaedic source of information which was reliable and stimulating. A new edition of Brockhaus encyclopaedia, *Der Grosse Brockhaus* (Wiesbaden), started out with volume 1 in 1952.

Germany. A country of central Europe, Germany is bounded north by the North sea, Denmark and the Baltic sea, east by Poland, south by Czechoslovakia, Austria and Switzerland and west by France, Luxembourg, Belgium and the Netherlands. From 1949 Germany was partitioned into two states with a special provisional regime for Berlin (q.v.). Areas



REBUILDING IN GERMANY continued at an active rate in 1952, with industrial architecture showing U.S. influences. Above, the new administration building of an electric power company in a Frankfurt suburb

and populations of the two states and Berlin are as shown in the table.

	Area (sq.mi.)	Population (1939 census)*	(1950 census)*
German Federal Republic	94,738	39,350,121	47,695,672
German Democratic Republic	41,379	15,157,123	17,313,734†
Berlin	344	4,338,756	3,336,475
Total	136,461	58,846,000	68,345,881§

*Within the 1945 boundaries. †Excluding the Saar (q.v.) ‡1946 census. §1951 est.: 70,000,000.

Language: German, with small admixture of Lusatian (260,000 in the Kottbus-Bautzen area), Polish (150,000, mainly in Westphalia) and Danish (120,000). Religion: (1938 est.) Protestant 62.7%, Roman Catholic 32.5%, Jewish 0.7%, other 4.1%; (1950 census, Federal Republic only) Protestant 50.7%, Roman Catholic 45.2%.

German Federal Republic.—Chief cities (with population of more than 200,000, 1950 census): Bonn (cap. 115,394); Hamburg (1,605,606); Munich (831,937); Essen (605,411); Cologne (594,941); Frankfurt-on-Main (532,037); Dortmund (507,349); Düsseldorf (500,516); Stuttgart (497,677); Bremen (444,549); Hanover (444,296); Duisburg (410,783); Wuppertal (363,224); Nuremberg (362,459); Gelsenkirchen (315,460); Bochum (289,804); Kiel (254,449); Mannheim (245,634); Lübeck (238,276); Brunswick (223,760); Wiesbaden (220,741); Oberhausen (202,808). President of the republic, Theodor Heuss; federal chancellor, Konrad Adenauer (q.v.). Allied high commissioners in 1952: British, Sir Ivone Kirkpatrick; French, André François-Poncet; U.S., John J. McCloy and (from Aug. 1) Walter J. Donnelly.

German Democratic Republic.—Capital, Berlin-Pankow. Chief cities (1946 census): Leipzig (607,655); Dresden (467,966); Chemnitz (250,188); Magdeburg (236,326); Halle (222,505). President of the republic, Wilhelm Pieck; premier, Otto Grotewohl. Chairman of the Soviet Control commission in 1952, Army Gen. Vasili Ivanovich Chuikov.

History.—During 1952, in spite of much propaganda, ex-

changes of notes between the western powers and the U.S.S.R., and proposals and counterproposals from Democratic and Federal Germany, the possibility of reunification of Germany seemed to have receded.

The Exchange of Notes.—On March 10 the Soviet government sent identical notes to the U.S., British and French governments urging immediate four-power talks to draw up a draft peace treaty with Germany. The notes outlined the principles upon which a peace treaty with Germany should be based. The most important terms were: (1) Germany should be restored as a single, independent, peace-loving state with its eastern frontier on the Oder-Neisse line; (2) Germany should undertake not to enter into any coalitions or military alliances; (3) Germany should be permitted to have its national armed forces (land, air and naval) necessary for the country's defense.

The three western governments, after consultation with the German Federal government, replied on March 25. They insisted that the conclusion of a peace treaty with a reunited Germany required the formation of an all-German government expressing the will of the German people; such a government could "only be set up on the basis of free elections in the Federal Republic, the Soviet zone and Berlin"; such elections could be held only in circumstances which safeguarded the national and individual liberties of the German people. In order to ascertain whether the first essential conditions existed, a U.N. commission had been appointed to carry out a simultaneous investigation in the Federal Republic and in the Soviet zone; the three western governments would be glad to learn what facilities were afforded in the Soviet zone to enable the commission to carry out its task.

On April 10 the Soviet government rejected the proposal that the U.N. commission should verify the existence of conditions for the holding of all-German elections; it proposed instead that the question of all-German elections should be studied by a commission consisting of representatives of the four occupying powers.

On May 13 the three western powers declared that they were ready to begin negotiations on German unity, the election of a free all-German government and the conclusion of a peace treaty with that government when understanding had been reached on the scope of the negotiations and the fundamental problems to be examined. The three governments insisted on the necessity of

holding free elections in all parts of Germany and again asked the Soviet government to make practical and precise proposals for an impartial commission of investigation.

On May 25, on the eve of the signature of a series of contractual agreements between the three western powers and the German Federal government, the Soviet government, ignoring the main point of the Allied notes of March 25 and May 13, presented a lengthy denunciation of the contractual arrangements to be signed at Bonn, describing them as paving the way for the restoration of "aggressive western German militarism" and drawing the German people "into the preparation of a new war." However, the Soviet government again proposed an immediate four-power meeting on the German question.

On July 10 the three western powers proposed that there should be an early meeting of representatives of the four governments, but only to discuss the first step toward the ultimate formation of an all-German government; viz., the appointment of an impartial commission, not subject to veto or control by the four powers, to determine whether conditions for free elections existed.

On Aug. 23 the Soviet government asked for a four-power conference to be called "not later than October" to discuss (1) the preparation of a German peace treaty; (2) the formation of an all-German government; (3) the holding of all-German elections; (4) the time limit for the withdrawal of occupation forces from Germany.

On Sept. 23 the western powers insisted on the need for free all-German elections before the negotiation of a peace settlement and formation of an all-German government. The reply renewed the proposal for an early four-power meeting "to discuss the composition, functions and authority of an impartial commission of investigation with a view to creating the conditions necessary for free elections."

On Sept. 19 a deputation of five members from the *Volkskammer* presented to Hermann Ehlers, speaker of the *bundestag*, the Democratic Republic's newest proposals, a joint commission with equal representation from both republics, which should prepare plans for reunification, and an agenda for the future peace treaty conference on Germany. The deputation, which received a hostile reception from the public in Bonn, was allowed to remain only 48 hours in the Federal Republic and was told that the *bundestag* reply would be delivered later.

German Federal Republic.—Between the western democracies and the Federal Republic, great progress toward closer understanding was made during 1952. The general contract, signed at Bonn on May 26, and the agreement on German participation in the European Defense Community (E.D.C.), signed the following day in Paris, when ratified would make the Federal Republic an equal partner in the western world and enable it to contribute to the defense of freedom.

Ratification of the general contract and the E.D.C. agreement was strongly opposed by the Social Democrats, who at their annual congress at Dortmund (Sept. 24-28) declared that they would seek revision of these treaties if they came to power; they stressed that reunification of Germany should be the first aim of the Federal Republic's foreign policy.

Through the European Coal and Steel Community, in force from July 25, Allied restrictions on German heavy industry were removed and the International Ruhr authority ceased to function. As to the participation of the Federal Republic in European defense, details as to the size and equipment of a future German contingent were settled by the North Atlantic Treaty organization (NATO) council at Lisbon on Feb. 26: the Federal Republic was granted 12 divisions for defense.

The future status of the Saar played an important role in both the international and internal discussions. Whether that



"HERR DOCTOR, doesn't this picture please you?" a 1952 cartoon which appeared in the *Vrij Nederland* (Amsterdam)

territory was to retain its existing status until a peace treaty as signed, or be returned to Germany or be "Europeanized" as still to be settled. (See SAAR.)

In the financial field, the London conference on German debts ended (Aug. 8) with the Federal Republic agreeing to pay 4,300,000,000 DM. (6,000,000,000 DM. prewar obligations, 1,500,000,000 DM. interest charges and 6,800,000,000 DM. postwar debts). Settlement was hailed in western Germany as a significant advance toward the Federal Republic re-entering the international money market and as freeing the way for much-needed international loans for industry.

Elections for the new southwest state (*Land*) of Württemberg-Baden (March 9) resulted in a government of Socialists (S.P.D.), Free Democrats or Liberals (D.V.P.) and Refugee Party (B.H.E.), even though the Christian Democratic Union (C.D.U.) was the leading single party (34% of votes). Reinhold Meier became premier, and by this arrangement of parties the federal government coalition lost its majority in the *bundesrat* or federal senate. Elections in Hesse (May 4) increased the Social Democratic hold over that state.

After a seven-day debate, the *Lastenausgleich* (sharing burdens of war and postwar losses) legislation was passed on May 6. Proceeds of a levy on personal property, shares or other assets would be used to compensate persons who had lost possessions during and after World War II. The levy would be paid over a period of 30 years and was calculated to yield about 1,150,000,000 DM. annually. Total claims exceeded 60,000,000,000 DM.

Another much-debated law, the *Betriebsverfassungsgesetz*, which established works councils and regulated the participation of workers' representatives on controlling boards of certain basic industries (coal, iron and steel) was approved by the *bundestag* by 195 to 140 votes (July 19).

The biggest event in the political field was the death of Kurt Schumacher, chairman of the S.P.D. His successor, Erich Ollenhauer, was elected at the party conference at Dortmund by 357 out of 363 votes.

The neo-Nazi S.R.P. (Sozialistische Reichspartei) dissolved itself (Sept. 12) following interminable internal bickerings and after the federal government a few months earlier had petitioned the supreme court to declare it illegal. Whether the S.R.P. had disbanded or merely gone underground was uncertain.

Alcide de Gasperi, premier and foreign minister of Italy, officially visited Bonn as guest of the federal government (Sept. 21-23).

Economically the year registered great advances. Following the coming into force of the European Coal and Steel Community, nearly all restrictions on Ruhr production ceased to operate, though the International Ruhr authority would not be dissolved until Feb. 10, 1953. For the first nine months of the year, German coal production totalled 91,640,000 tons (88,350,000 tons in the same period of 1951). In July steel production was 1,378,000 tons, the highest since 1938. It was expected that steel production in 1954 would exceed that of 1937 (17,800,000 tons).

The breakup of the industrial cartels, according to the Allied High commission law No. 27 (May 1950), was almost completed. The Krupp combine, for instance, which after losses through bombing and dismantling was estimated to have a value of 297,000,000 DM., was decentralized into a number of separate projects. The present owner, Alfred Krupp, was awarded £30,000,000 compensation for losses of property and would also retain holdings in many enterprises. By 1952 the German mark had become one of the "hardest" currencies, as a result of increased production, foreign trade balance, European Recovery program aid and hard work. In the European Payments union,



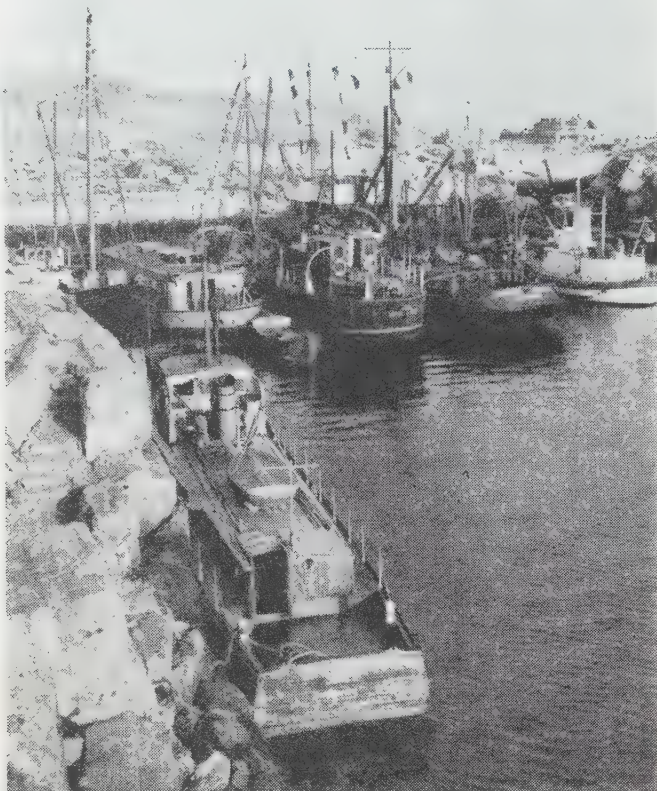
FRENCH FOREIGN MINISTER Robert Schuman speaking at Bonn, Ger., where a contract was drawn up in May 1952 amounting to a virtual war settlement between west Germany and the three major Allied powers, England, France and the U.S.

the Federal Republic was in August a leading creditor with a surplus of \$405,800,000. Since 1945 the government had spent 28,000,000,000 DM. in aiding refugees and homeless persons.

German Democratic Republic.—The Soviet-occupied zone of Germany became more isolated from western influences during 1952, making it increasingly difficult to obtain reliable information regarding developments there, especially as most of the official reports were propaganda. At the same time, however, great efforts were being made to persuade the Federal Republic to reject U.S. policy, which, it was said, would annihilate Germany, and accept "German" policy, which would save it.

Relations between the German Democratic government and the eastern bloc of states controlled from Moscow continued to become closer. Klement Gottwald, president of Czechoslovakia, revisited Wilhelm Pieck, president of the German Democratic Republic (March 10-12).

During May the Democratic Republic announced several measures which aimed to secure greater isolation from the west. Interzonal permits were from May 17 to be issued only by the *Volkspolizei*, zonal borders were to be more rigidly controlled because of "spies" and "saboteurs," and entry of west Germans and west Berliners into the Soviet zone was to be regulated by



INCREASED NUMBER OF GERMAN ships anchored at Heligoland after that North sea island was returned to west German sovereignty March 1, 1952. Heligoland had been used as an R.A.F. practice bombing target since World War II (note the rubble at left)

a new special pass. Telephone communications between west and east Berlin were cut on May 27, and a no man's land of 3.1 mi. was created along the whole extent of the western frontier of the German Democratic Republic.

The formation of a German people's army had been proceeding for some time, but an excuse for speeding up the process came when it was obvious that the general contract and the E.D.C. agreement between the Federal Republic and the western powers would be concluded. On May 1 Pieck announced the creation of a defense force if the Bonn agreement was signed; on June 18 the *volkskammer* approved a resolution for the establishment of a national army; on Sept. 16 it was officially announced that recruitment started. Because of lack of success, the ministry of the interior ordered on Sept. 26 that from each *Kreis* (district) 5% of the population must join the new force. It was expected that by the end of 1952 the Democratic Republic would have 12 divisions totalling 180,000 men, and double that number by 1954. One of the results of these new measures was that from July to September 43,200 Germans escaped to west Berlin and the Federal Republic.

A labour service under the title "Service for Germany" was approved on July 24 for 17-year-old youths of both sexes. They would receive uniforms, food and lodging and 1 OM. a day as pocket money.

A Soviet system of administration was introduced into the Democratic Republic on July 23 when instead of the former five *Länder* (states) there were created 14 new *Bezirke* (provinces), each containing 15 to 16 *Kreise* (districts). The new move was intended to remove historical divisions and to give more power to Communist officials.

The policy of sovietization, which continued in both industry

and agriculture, had also been applied most determinedly in cultural matters. Simultaneously, the negative side of this policy (viz., exclusion of all western cultural influences) was carried still further. In August permits were refused for 5,000 east German Protestant clergy and laymen to attend the World Lutheran congress at Hanover. A special synod of the Evangelical Church met in east Berlin (Aug. 12) to discuss the abnormal situation, which included the German Democratic authorities' refusal to allow theological students trained in western institutions to hold pastorates in eastern Germany, plans to close theological faculties in eastern universities and the withholding of financial grants to churches on the least excuse.

Revision of the whole system of justice, particularly of the criminal law, announced in October, brought the Democratic Republic into line in matters of justice with the system applied in the U.S.S.R. Henceforth, any judge could be dismissed by the ministry of justice, and decisions by individual judges would be replaced by collective judgments.

On Feb. 8 the *volkskammer* approved the economic plan for 1952, whereby industrial production would be increased by 13.7% over the previous year; in agriculture production was to be increased by 10%. Employment in industry would increase by 154,000. The report on 1951 production stated that the plan was not everywhere fulfilled, and that there was a lack of raw materials and of electricity supplies.

According to reports of the ministry for all-German affairs in the Federal Republic, the U.S.S.R. took from current production in the Democratic Republic reparations to the value of 2,500,000,000 OM. (1 DM.=4.7 OM.)

In the prisons and concentration camps of the Democratic Republic there were about 200,000 Germans, according to estimates published at Bonn on Sept. 26. (See also EUROPEAN UNION; ISRAEL; NORTH ATLANTIC TREATY ORGANIZATION; REFUGEES; UNION OF SOVIET SOCIALIST REPUBLICS.) (J. E. WI.)

Education.—*German Federal Republic.*—Schools (May 1950): elementary 28,779, pupils 6,314,452, teachers 130,618; higher elementary 579, pupils 196,067, teachers 6,011; secondary 1,488, pupils 620,481, teachers 28,872; universities 16, students 74,258, professors and lecturers 3,450; Roman Catholic theological and philosophical faculties 12, students 3,400; technical colleges 7, students 22,810. The Free university in western Berlin had 2,000 students in 1951.

German Democratic Republic.—Universities 5, students (1948) 12,269, teaching staff 671. In addition there was the University of Berlin with in 1948, 5,634 students and 157 professors and lecturers.

Finance and Banking.—*German Federal Republic.*—Budget (1951—est.) revenue 17,738,000,000 DM., expenditure 18,357,000,000 DM. National income (1951) 90,100,000,000 DM. Bank deposits (May 1952) 9,430,000,000 DM. Currency circulation (June 1952) 9,440,000,000 DM. Monetary unit: deutschemark; official exchange rate (Nov. 1951): £1=11.76 DM.; U.S. \$1=4.20 DM.

German Democratic Republic.—Budget (1950 est.) balanced at 13,500,000,000 OM.; (1951 est.) revenue 21,751,000,000 OM., expenditure 25,488,000,000 OM. Currency circulation (Dec. 1951) 3,331,000,000 OM. Although theoretically at par with the western mark, the free exchange rate in Berlin was (Nov. 1952): 1 DM.=4.70 OM.

Foreign Trade.—*German Federal Republic.*—(1951) Imports 14,678,000,000 DM.; exports 14,536,000,000 DM. Main sources of imports (1951): U.S. 18%; the Netherlands 7%; France 5%; Sweden 5%; U.K. 3%. Main destination of exports (1951): the Netherlands 10%; France 8%; Belgium-Luxembourg 7%; Sweden 7%; U.S. 7%; Switzerland 6%; U.K. 6%. Main imports (1951): cereals 12%; raw cotton 8%; coal and gasoline 7%. Main exports (1951): machinery and vehicles 27%; coal and coke 11%.

German Democratic Republic.—Imports and exports were together estimated at 700,000,000 OM. in 1949 and 1,200,000,000 OM. in 1951. Nine-tenths of exports were taken by the Soviet Union and the people's democracies (Soviet Union 50%; Poland 23%; Czechoslovakia 10%); 85% of imports were supplied by the U.S.S.R. and its satellites.

Transport and Communications.—Railways (Dec. 1951): *German Federal Republic* 19,086 mi.; *German Democratic Republic* 8,942 mi. Railway traffic (*German Federal Republic*, monthly average, 1951): passengers 1,490,400,000; freight ton-miles 2,850,000,000; freight carried 21,440,000 tons. Roads (Dec. 1950): *German Federal Republic* 79,250 mi. including 1,333 mi. of Autobahn; *German Democratic Republic* 3,093 mi. Motor vehicles licensed (*German Federal Republic*, Dec. 1950) 2,155,355, including 987,583 motorcycles. Shipping (July 1951) 1,037,711 gross registered tons. Cargo in western German ports in external trade (monthly average, June 1952): loaded 879,000 metric tons, unloaded 1,980,000 metric tons. Telephones (Jan. 1951): *German Federal Republic* 2,393,013; *German Democratic Republic* 332,200. Radio receiving sets (1950): *German Federal Republic*, 7,730,000.

Agriculture.—Main crops (metric tons): *German Federal Republic.*—Wheat (1951) 2,949,000; rye (1951) 3,034,000; barley (1952) 1,680,000; oats (1952) 2,600,000; potatoes (1952) 24,103,000. *German Democratic Republic.*—Wheat (1950) 815,000; rye (1950) 2,130,000; barley (1950) 515,000; oats, including mixed grains (1950) 1,140,000; potatoes (1951) 11,160,000. **Livestock:** *German Federal Republic.*—(1951) cattle 11,453,000; pigs 12,054,000; goats 1,347,000; sheep 2,048,000; horses 1,570,000; poultry 50,676,000; turkeys 416,000; geese 2,419,000; ducks 902,000. *German Democratic Republic.*—(1950) cattle 3,615,000; pigs 5,705,000; goats 1,644,000; sheep 1,085,000; horses 772,000; poultry 19,902,000.

Production.—(Metric tons): *German Federal Republic.*—(1951) milk 147,288,000 hl.; butter 276,000; meat 1,344,000; sugar, raw 1,059,000. *German Democratic Republic.*—Milk (1949) 2,358,000; butter (1949) 64,000; meat (1949) 419,000; sugar, raw (1950) 833,000, (1951) 771,000.

Industry.—*German Federal Republic.*—Persons employed (Sept. 1951) 14,884,500; unemployed (Aug. 1952) 1,107,000. Index of industrial production (1948=100), 182 in 1950, 218 in 1951 and 217 in July 1952. **Production** (metric tons, 1951): coal 118,920,000; lignite 83,124,000; electricity 51,360,000,000 kw.hr.; gas 10,752,000,000 cu.m.; crude oil 1,368,000; iron ore (25% metal) 12,924,000; pig iron 10,692,000; steel ingots and castings 13,500,000; copper 141,000; lead 77,000; zinc 141,000; aluminum 74,000; cement 12,204,000; building bricks, 4,608,000,000; motor cars 267,360; commercial vehicles 96,000; cotton yarn 324,000; woven cotton fabrics 217,000; wool yarn 92,000; rayon filament yarn 54,000; rayon staple fibre 128,000. *German Democratic Republic.*—Coal production (1951) c. 2,500,000 metric tons; crude steel, 1,548,000 tons; lignite, c. 100,000,000 tons.

G.I. Bill of Rights: see VETERANS ADMINISTRATION (U.S.).

Gibraltar. A British fortress colony. Gibraltar is situated on a peninsula from the southwest coast of Spain at the western entrance to the Mediterranean. Area: 2.12 sq.mi. (including reclamation). Population, excluding armed forces: (1951 census) 22,848. Language: Spanish (50% also speak English). Religion: mainly Roman Catholic. Governors (1952): Gen. Sir Kenneth Anderson and (from May 9) Lieut. Gen. Sir Gordon MacMillan.

History.—An income tax ordinance was enacted in April 1952 and the tax would be collected in 1953 for the first time. Economic conditions continued to be satisfactory, with an increase in the manufacture of tobacco and in the volume of shipping using the port. The Louto high school for girls was reopened in September after the interior of the building had been completely redesigned and modernized. A new junior school was also opened at Grand Parade. The 400-yr.-old King's chapel, the shrine of all the corps and regiments that took part in the capture and subsequent sieges of the rock, had been damaged by the explosion of the ammunition ship "Bedenham" in 1951. It had now been restored and was reopened by the new year, and in February the governor unveiled two new stained glass windows.

(K. G. B.)

Education.—Schools (Dec. 1951): primary and infant 18 (1,964 pupils), secondary 5 (1,127 pupils).

Finance and Trade.—Currency: pound sterling with local notes. Budget (1952 est.): revenue £879,127; expenditure £922,950. Foreign trade (1951): imports £6,150,000; exports £838,000.

See H. W. Howes, *The Gibraltarian* (Colombo, 1952).

Gilbert and Ellice Islands Colony: see PACIFIC ISLANDS, BRITISH.

Girl Scouts: see SOCIETIES AND ASSOCIATIONS, U.S.

Glands: see ENDOCRINOLOGY.

Glass. In 1952 the United States glass industry continued the prosperity of 1951, with no major changes in volume of the principal lines of manufacture. The value of products for the year was expected to reach at least \$1,250,000,000, of which approximately one-third was in bottles and containers, one-fourth in flat glass, and one-fourth in pressed and blown glassware, leaving one-sixth for all other items.

The greatest expansion during the year took place in the manufacture of fibre glass. The opening of patents to licence by the chief producer enabled a number of companies to enter this field. The applications of glass fibres to new uses went on at a remarkable rate. In fine fibres, glass has strength comparable

with that of steel. Therefore, when glass fibres are suitably bonded by other materials that prevent the scratching that destroys the strength of the glass, a number of products of tremendous strength and high utility can be developed. Body armour for soldiers, structural parts, boxes, twine and paper may be mentioned as examples.

Research on glass extended more and more into its fine structure. Attention was directed to the size, character and bonding relationships of its component atoms. Thus the specific properties of various compositions could be explained or predicted more surely and accurately than by the empirical study of oxide relationships, which was the method employed in former years.

The glass division of the American Ceramic society continued its growth and activity. Because of the large number of scientific papers, mainly from the glass division, the society established a basic science division, where researches of scientific rather than of direct technological interest were reported. Patents dealing with glass were issued at the usual steady rate.

International co-operation in glass research continued under the leadership of the International Commission for Glass, which held its annual meeting in London and Sheffield, Eng., during July.

European developments of interest centred upon electrical glassmelting, which had attained a high degree of success. Electric glass furnaces began to appear in the U.S. wherever hydro-electric power made the method economical. In other areas electric melting or heating was applied to special glasses. (See also CERAMIC PRODUCTS.)

(S. R. S.)

Gliding. Seventeen countries were represented at the World Soaring Championship contest at the Four Winds airport, Madrid, Sp., June 30 to July 13, 1952: Argentina, Australia, Belgium, Brazil, Canada, Denmark, England, Finland, France, Germany, the Netherlands, Italy, South Africa, Spain, Sweden, Switzerland and the United States. P. A. Wills of England, flying a Sky, won the title of world champion. Second place went to G. Pierre of France, flying a CM 8-15. Third place was earned by R. C. Forbes of England, flying a Sky.

In the United States, the 19th National Soaring contest was held at Grand Prairie, Tex., Aug. 12-30. Richard Johnson, flying the RJ 5, set a world speed record of 53.8 m.p.h. for a triangular course and also earned the title of national champion. William Coverdale established a new distance and return record of 268 mi. in a Schweizer 1-23 sailplane.

During the year several records were established. In France two world duration records were set: 53 hr. 4 min. in a CM-7 two-place sailplane by A. Carraz and G. Branswick on Feb. 4, and 56 hr. 15 min. in an Air-100 sailplane by C. Atger on April 2. In the United States, a new two-place altitude world record of 46,000 ft. and an altitude gain of 36,000 ft. was made by L. Edgar and H. Klieford on March 29 in a Pratt Read sailplane. A feminine world two-place distance record to a predetermined goal of about 172 mi. was set by B. Woodward and A. Saudek on July 11 in a Pratt Read sailplane.

An Australian national distance record of 259 mi. was set by K. Colyer on Dec. 25, 1951, in an Olympia sailplane, and a goal and return record of 126 mi. by M. Waghorn in an Olympia sailplane.

Several new sailplanes were designed and built during the year: in Poland a canard type sailplane, the I.S.-5 Kaczka, and a two-place sailplane, the SZD-9 Bocian; in France the Fauvel A.V. 36, a tailless sailplane; in Denmark a two-place sailplane, the Polyt III; and in Germany, the Spatz, a single-place sailplane for advanced soaring training flights.

A new source of atmospheric energy for soaring was revealed by Joachim Kuettner of the air force Cambridge Research cen-

tre in a paper entitled, "Soaring on Traveling Waves in the Jet Stream," given at the technical meetings of the Institute of Aeronautical Sciences. (B. Sk.)

Gold. The large net purchases of gold by the United States that characterized international gold movements from July 1951 through March 1952 had subsided by mid-1952, as appears from Table I. Furthermore, while the bulk of United States purchases from July 1951 through March 1952 came from the United Kingdom, the banker of the sterling area, those effected from April through June 1952 originated mainly in Latin America.

Largely as a result of these net gold purchases of foreign gold, the monetary gold stock of the United States increased from \$21,872,000,000 in June 1951 to \$23,533,000,000 in June 1952; it stood at \$23,526,000,000 in Sept. 1952. Other countries (excluding the U.S.S.R.) experienced an aggregate decline in their monetary gold stocks from \$12,400,000,000 in June 1951 to \$10,670,000,000 in June 1952. Including the gold holdings of the International Monetary fund, of the Bank for International Settlements and of the European Payments union, the world's monetary gold reserves (excluding the U.S.S.R.) amounted in June 1952 to \$36,130,000,000, as against \$35,930,000,000 a year previously. In June 1952 the United States held 65% of the world monetary gold stock, as against 61% in June 1951.

A comparison between the increase in the total official gold reserves of countries outside the U.S.S.R. and the volume of gold production in these countries indicates that \$235,000,000 worth of gold went into industrial uses or private hoards or was otherwise unaccounted for during the first half of 1952, as against nearly \$400,000,000 during the second half of 1951. Complementing this change, world monetary gold reserves (excluding the U.S.S.R.), which during the second half of 1951 increased by only \$20,000,000, the lowest increment for any postwar half-year period, went up by about \$180,000,000 between January and June 1952. Table II outlines these developments.

The slowing down in the disappearance of newly mined gold into private hoards in the first half of 1952 seemed to reflect principally a decline in demand, which in turn appeared to be largely attributable to an abatement of inflationary pressure in large parts of the world. Gold prices in terms of local currencies, especially those in the far east and continental western Europe, moved generally downward; the price at which gold was traded

Table III.—World Production of Gold (Refinery Production)

	(In thousands of fine ounces)						
	1945	1946	1947	1948	1949	1950	1951
United States	929	1,462	2,165	2,025	1,922	2,289	1,895
Canada	2,697	2,833	3,070	3,530	4,124	4,431	4,325
Mexico	419	421	465	368	406	408	394
Central America	244	240	239	260	286	304	314
South America	1,276	1,194	982	943	1,100	1,060	984
India	168	132	172	180	161	197	226
Belgian Congo	341	331	301	300	334	339	355
Gold Coast	475	587	558	672	677	680?	695
Southern Rhodesia	568	545	520	514	528	511	487
South Africa	12,225	11,927	11,200	11,584	11,705	11,664	11,516
Australia	657	824	938	886	889	850	884
Total (est.)	26,100	27,600	28,900	29,800	30,800	31,600	33,500

directly for United States dollars in various markets outside the United States reportedly fell from \$39 per fine ounce in Jan. 1952 (it had stood at \$44 in Jan. 1951) to \$37 in April; from May through September 1952 it fluctuated around \$37.50.

See M. A. Kriz, "The Price of Gold," *Essays in International Finance*, No. 15 (July 1952).

World Production.—Table III shows the gold outputs of the major producing countries, as reported by the U.S. bureau of mines. World totals are uncertain, however, since only estimates were available for the U.S.S.R.

United States.—Domestic mine output declined in 1951 in all the important producing states, with the year's total 18% less than that of 1950. The decline continued into 1952, the total for the first seven months of the year being 1,020,614 oz. or 12% less than in the corresponding period of 1951.

Canada.—Gold production in Canada declined slightly in 1951, to 4,328,931 oz., against 4,448,396 oz. in 1950.

Union of South Africa.—There had been only minor fluctuations in the gold output of South Africa in the post-World War II years; small declines were reported, from 11,663,713 oz. in 1950 to 11,516,450 oz. in 1951 and 5,831,976 oz. in the first half of 1952. (See also EXCHANGE CONTROL AND EXCHANGE RATES, MINERAL AND METAL PRODUCTION AND PRICES.) (G. A. Ro.)

Gold Coast: see BRITISH WEST AFRICA.

Golf. The golfing year of 1952 began with the newly adopted rules for the game going into effect on Jan. 1. The code had previously been agreed upon by representatives of the United States Golf association and the Royal and Ancient club of St. Andrews, Scot., with a view toward standardizing regulations for world-wide observance. The stymie was relegated to oblivion by this move, along with other changes.

In international competition for the Curtis cup, the biennial contests between women golfers of the United States and Great Britain, the British side won for the first time since the cup was offered in 1932, by 5 and 4, at Muirfield, Scot. The American remained to play in the women's British championship at Troon, but Moira Paterson of Glasgow won this title when she defeated Frances Stephens of Liverpool, 1 up, 38 holes, in the final. The men's British amateur crown, however, remained in the hands of a United States player as Harvie Ward of Tarboro, N.C., succeeded Richard Chapman of Pinehurst, N.C., as champion. Ward defeated a fellow countryman, Frank Stranahan of Toledo, O., 6 and 5, in the deciding match at Prestwick, Scot.

The British open, however, went again to Bobby Locke, the South African professional. Locke in winning for the third time in four years scored 287 at St. Anne's on the Sea, Eng., leading 22-year-old Peter Thomson of Australia who totalled 288, while the Irishman, Fred Daly, who set a record 67 in the opening round, finished third at 289. Willie Goggin was the first U.S. player at 298.

A new international series began at Seattle, Wash., for the Americas cup in which amateur teams from the United States, Canada and Mexico participated. The United States representatives included Charles Coe, captain, Frank Stranahan, Harvie

Table I.—United States Net Gold Purchases from Other Countries

(In millions of dollars; negative figures indicate net sales by the United States)

	Total	United Kingdom and overseas sterling area	Central and northern Europe*	Latin America	Asia and Oceania	All other countries†
1949	193	642	—250	—148	—52	2
1950	—1,725	—1,007	—364	—172	—35	—147
1951	75	522	—177	—126	—50	—94
1951, Jan.-June	—932	—467	—217	—164	—21	—63
July-Dec.	1,007	989	40	38	—29	—31
1952, Jan.-March	557	524	32	4	3	—
April-June	106	7	—	94	—2	7

*Almost entirely western European countries.

†Including Canada.

Note: For more detailed and more recent data, see the *Federal Reserve Bulletin*.

Table II.—Estimated Supply of Newly Mined Gold and Gold Released from Central Reserves to Premium Markets

(In millions of dollars; rounded figures; U.S.S.R. excluded)

	1950		1951		1952
	Jan.-July	July-Dec.	Jan.-July	July-Dec.	Jan.-June
Gold production	420	430	410	415	415
Less: Increases in official holdings	320	90	110	20	180
Computed absorption into industry, arts and professions and into private hoards	100	340	300	395	235
Less: Estimated absorption into industry, arts and professions in reporting countries*	100	100	n.a.	n.a.	n.a.
Estimated absorption into private hoards	—	240	n.a.	n.a.	n.a.

*Estimated on the basis of data compiled in the 1950 *Annual Report* of the director of the United States mint.

n.a. Not available.

A black and white photograph showing a large crowd of people, mostly men in suits, walking across a grassy field. They are moving away from the camera towards a distant line of trees or a horizon. The scene appears to be a public event or a military parade.

was Mrs. Jacqueline Pung, 29-
 GOLF FANS forming separate galleries around Ben Hogan (left centre) and Sam Snead (rear) after they nosed out all other contenders in the final round of the Masters tournament held at Augusta, Ga., in April 1952

Other season highlights were: Frank Stranahan's victory in the western amateur; Chet Sanok's becoming the first amateur to win the metropolitan open; Johnny Palmer's feat in winning the Canadian open with a record 263; and the triumph of Louise Suggs in the women's national open at Philadelphia's Bala course.

(L. A. WN.)

Gonorrhoea: *see* VENEREAL DISEASES.

The principal departments and bureaus of the U.S. government, and their chief executive officers as of Oct. 1, 1952, were:

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Department or Bureau	Name	Post	Department or Bureau	Name	Post
Department of the Navy	*Kimball, Dan A.	Secretary	*Federal Security Agency	Ewing, Oscar R.	Administrator
Chief of Naval Operations	Whitehair, Francis P.	Under-Sec'y	U.S. Office of Education	McGrath, Earl J.	Commissioner
Asst. Chief for Women, Bureau of	*Fechtelner, William M.,	Chief	U.S. Public Health Service	Scheele, Leonard A.	Surgeon General
Naval Personnel	Adm.		*Social Security Administration	Altmeyer, Arthur J.	Commissioner
*U.S. Marine Corps	Hancock, Joy B., Capt.	Asst. Chief for Women	Food and Drug Administration	Crawford, Charles W.	Commissioner
Women Marines	Shepherd, Lemuel C., Jr.,	Commandant	*Office of Vocational		
Department of the Air Force	Gen.	Director	Rehabilitation	Switzer, Mary E.	Director
Chief of Staff	Towle, Katherine A., Col.	Director	*Federal Trade Commission	Mead, James M.	Chairman
Women in the Air Force	*Finletter, Thomas K.	Secretary	General Accounting Office	Warren, Lindsay C.	Comptroller General
	Gilpatrick, Roswell L.	Under-Sec'y	General Services Administration	Larson, Jess	Administrator
	*Vandenberg, Hoyt S., Gen.	Director	Public Buildings Service	Reynolds, W. E.	Commissioner
	Shelly, Mary Jo, Col.	Director	National Archives and Records		
Department of Justice	*McGranery, James Patrick	Att'y-Gen.	Service	Grover, Wayne C.	Archivist
Solicitor General	(Vacancy)	Solic. Gen.	Federal Supply Service	Mack, Clifton E.	Commissioner
*Federal Bureau of Investigation	Hoover, J. Edgar	Director	Emergency Procurement Service	Walsh, A. J.	Commissioner
Bureau of Prisons	Bennett, James V.	Director	Government Printing Office	Deviny, John J.	Public Printer
Immigration and Naturalization			Housing and Home Finance Agency	Foley, Raymond M.	Administrator
Service	Mackey, Argyle R.	Commissioner	Federal National Mort-		
*Post Office Department	*Donaldson, Jesse M.	Postmaster Gen.	gage Association	Baughman, J. Stanley	President
Department of the Interior	*Chapman, Oscar L.	Secretary	Home Loan Bank Board	Divers, William K.	Chairman
Bureau of Land Management	Clawson, Marion	Director	Federal Housing Administration	Greene, Walter L.	Commissioner
Bureau of Indian Affairs	Myer, Dillon S.	Commissioner	Public Housing Administration	Egan, John Taylor	Commissioner
Geological Survey	*Wrather, William E.	Director	Community Facilities and Special		
Fish and Wildlife Service	Day, Albert M.	Director	Operations, Division of	Seward, Pere F.	Director
Bureau of Reclamation	Straus, Michael W.	Commissioner	Indian Claims Commission	Witt, Edgar E.	Chief Commissioner
*National Park Service	Wirth, Conrad L.	Director	*Interstate Commerce Commission	Aldredge, J. Haden	Chairman
Bureau of Mines	Forbes, John J.	Director	Library of Congress	Evans, Luther H.	Librarian
Office of Territories	Davis, James P.	Director	National Advisory Committee for		
Defense Electric Power Administration	Fairman, James F.	Administrator	Aeronautics	Hunsaker, Jerome C.	Chairman
Defense Fisheries Administration	Day, Albert M.	Administrator	National Capital Park and		
Defense Minerals Exploration Adminis-			Planning Commission	Remon, John A.	Chairman
tration	Mittendorf, C. O.	Administrator	*National Labor Relations Board	Herzog, Paul M.	Chairman
Defense Solid Fuels Administration	Connor, Charles W.	Administrator	National Mediation Board	O'Neill, Francis A., Jr.	Chairman
Petroleum Administration for Defense . .	Chapman, Oscar L.	Administrator	National Science Foundation	Waterman, Alan T.	Director
Department of Agriculture	*Brannan, Charles F.	Secretary	Railroad Retirement Board	Kennedy, William J.	Chairman
*Agricultural Research			*Reconstruction Finance Corporation	McDonald, Harry A.	Administrator
Administration	Shaw, B. T.	Administrator	*Securities and Exchange Commission	Cook, Donald C.	Chairman
Bureau of Agricultural and			*Selective Service System	Hershey, Lewis B., Maj. Gen.	Director
Industrial Chemistry	Hilbert, G. E.	Chief	*Smithsonian Institution	Wetmore, Alexander	Secretary
Bureau of Animal Industry	Simms, Bennett T.	Chief	Tax Court of the United States	Kern, John W.	Chief Judge
Bureau of Dairy Industry	Reed, O. E.	Chief	*Tennessee Valley Authority	Clapp, Gordon R.	Chairman
Bureau of Entomology and Plant			U.S. Civil Service Commission	Ramspeck, Robert	Chairman
Quarantine	Hoyt, Avery S.	Chief	Fair Employment Board	McCoy, W. Arthur	Chairman
Bureau of Human Nutrition and			Loyalty Review Board	Bingham, Hiram	Chairman
Home Economics	Siebeling, Hazel K.	Chief	U.S. Tariff Commission	Ryder, Oscar B.	Chairman
Bureau of Plant Industry, Soils and			*Veterans Administration	Gray, Carl R., Jr.	Administrator
Agricultural Engineering	Moseman, A. H.	Chief	War Claims Commission	Cleary, Daniel F.	Chairman
Office of Experiment Stations	Trullinger, R. W.	Chief			
Bureau of Agricultural Economics	Wells, O. V.	Chief	Executive Office of the President		
Commodity Credit Corporation	Geissler, G. F.	President	Bureau of the Budget	Lawton, Frederick J.	Director
Extension Service	Wilson, M. L.	Director	Council of Economic Advisers	Keyserling, Leon H.	Chairman
*Farm Credit Administration	Duggan, Ivy W.	Governor	National Security Council	Lay, James S., Jr.	Executive Sec'y
*Farmers Home Administration	Lasseter, Dillard B.	Administrator	Central Intelligence Agency	Smith, Walter B.	Director
Federal Crop Insurance Corporation	Brainard, John W.	Manager	National Security Resources Board	Gorrie, Jack	Chairman
Forest Service	McArdle, R. E.	Chief	*Office of Defense Mobilization	*Fowler, Henry H.	Director
Foreign Agricultural Relations,					
Office of	Haggerty, John J.	Director			
Production and Marketing					
Administration	Geissler, G. F.	Administrator			
*Rural Electrification Administration . . .	Wickard, Claude R.	Administrator			
Soil Conservation Service	Salter, Robert M.	Chief			
Department of Commerce	*Sawyer, Charles	Secretary			
	(Vacancy)	Under-Sec'y			
	Scott, Jack Garrett	Under-Sec'y			
		(Transportation)			
	Davis, Thomas W. S.	Ass't Sec'y			
		(Domestic Affairs)			
	Schneider, J. Thomas	Ass't Sec'y			
		(International			
		Affairs)			
	Osthagen, Clarence H.	Ass't Sec'y			
		(Administration)			
		Director			
Bureau of the Census	Peel, Roy V.	Director			
Bureau of Foreign and Domestic					
Commerce	(Vacancy)	Director			
National Bureau of Standards	Astin, A. V.	Acting Director			
*Coast and Geodetic Survey	Studds, R. F. A., Rear Adm.	Director			
Inland Waterways Corporation	Oliphant, William G.	President			
*Civil Aeronautics Administration	Horne, C. F.	Administrator			
*Patent Office	Marzall, John A.	Commissioner			
Weather Bureau	Reichelderfer, Francis W.	Chief			
Bureau of Public Roads	MacDonald, Thomas H.	Commissioner			
Federal Maritime Administration	Gatov, A. W.	Administrator			
National Production Authority	McDonald, Richard A.	Administrator			
Department of Labor	*Tobin, Maurice J.	Secretary			
	Galvin, Michael J.	Under-Sec'y			
Bureau of Labor Statistics	Clague, Ewan	Commissioner			
Bureau of Apprenticeship	Patterson, William F.	Director			
Women's Bureau	Miller, Frieda S.	Director			
Bureau of Labor Standards	Connolly, William L.	Director			
Wage and Hour and Public					
Contracts Divisions	McComb, William R.	Administrator			
Bureau of Employment Security	Goodwin, Robert C.	Director			
Bureau of Employees' Compensation	McCauley, William	Director			
Independent Offices					
Atomic Energy Commission	Dean, Gordon E.	Chairman			
Civil Aeronautics Board	Nyrop, Donald W.	Chairman			
*Export-Import Bank of Washington	Gaston, Herbert E.	President			
*Federal Communications Commission	Walker, Paul A.	Chairman			
*Federal Deposit Insurance					
Corporation	Harl, Maple T.	Chairman			
Federal Mediation and					
Conciliation Service	Cole, David L.	Director			
*Federal Power Commission	Buchanan, Thomas C.	Chairman			
*Federal Reserve System, Board of					
Governors of the	Martin, William McC., Jr.	Chairman			

Grain: see BARLEY; CORN; OATS; RICE; RYE; WHEAT.

Grapefruit: see FRUIT.

Grapes: see FRUIT.

Great Books of the Western World. Everyone has his own idea of the year's most important event. Looking back over 1952, many would choose the election of a new president; others the installation of a new regime in Egypt, etc. If, however, one happens to believe that in the long, sometimes the very long, run what moves large masses of men most profoundly are fundamental ideas, then one might choose a very different event as 1952's most important. We might select the publication, in April

of the 54-vol. set entitled "Great Books of the Western World."

About 20 years before, under the inspiration of John Erskine, Columbia college, Columbia, S.C., had instituted an "honours" course for undergraduates. Those who took this course read one "great book" a week for two years, beginning with Homer and ending with William James. Under the guidance of two instructors these books were discussed weekly in an evening class. Out of this quiet beginning grew the Great Books movement. By 1952, similar courses in modified form were being given in many colleges; and there were about 2,000 adult Great Books classes throughout the nation, some of which had been meeting regularly for more than 20 years.

The Great Books idea is based on two propositions, a negative one and a positive one. The negative proposition is this: A good liberal education cannot be secured if the student is permitted merely to follow his own changing whims, tastes and inclinations. The positive proposition is this: A good liberal education, or at least its basis, can be secured by the lifelong reading and study of those books in the western tradition which have, over the last 3,000 years, supplied us with our crucial ideas, insights and imaginative symbols.

The set of Great Books is a natural outgrowth of the whole movement just described. It makes available to every household that can buy the set and is willing to tackle it seriously, the Great Conversation, as Robert M. Hutchins calls it, which is really the history of western culture. Of this Great Conversation we are the products; in this Great Conversation we can join.

First, a brief description of the set. The 54 volumes are bound in four different colours—yellow for works of imagination; blue for history, ethics, economics, politics and jurisprudence; green for the sciences and mathematics; and red for philosophy and theology. They contain 25,000,000 words in 32,000 pages. They include three volumes of original material by the editors, and 443 separate works by 74 authors. There are no excerpts, except in the unavoidable cases of Aquinas, Kepler and Fourier; 21 writers are represented by their complete authentic works; 9 titles are published for the first time in English.

Contents: the complete works of Homer, Aeschylus, Sophocles, Euripides, Aristophanes, Herodotus, Thucydides, Plato, Aristotle, Hippocrates, Euclid, Archimedes, Nicomachus, Lucretius, Marcus Aurelius, Virgil, Plotinus, Montaigne, Shakespeare, Harvey and Gilbert; the major works or the recognized masterpieces of Galen, Apollonius, Epictetus, Plutarch, Tacitus, Ptolemy, Copernicus, Kepler, St. Augustine, St. Thomas Aquinas, Dante, Chaucer, Machiavelli, Hobbes, Rabelais, Galileo, Cervantes, Bacon, Descartes, Spinoza, Milton, Pascal, Newton, Huygens, Locke, Berkeley, Hume, Swift, Sterne, Fielding, Montesquieu, Rousseau, Adam Smith, Gibbon, Kant, Mill, Boswell, Lavoisier, Fourier, Faraday, Hegel, Goethe, Melville, Darwin, Marx, Tolstoy, Dostoevsky, William James and Freud; and the Declaration of Independence, the Articles of Confederation, the Constitution of the United States and the Federalist papers.

How were these names selected? Is it proper to establish an immutable canon and to call these books and no others the Great Books? The only answer is this: if five hundred reasonable men, fully conversant with the history of western culture, were asked to name the major works and authors who have determined the course of that culture, there would be disagreement. But—the disagreement would be a fringe disagreement. That is, they would agree as to about 90% of the above titles—and disagree with respect to the balance. There must be some selection. This set represents a fair and reasonable one.

¹"Great Books of the Western World"; Robert Maynard Hutchins, editor in chief; Mortimer J. Adler, associate editor; published by William Benton and Encyclopædia Britannica, Inc., in collaboration with The University of Chicago; 54 vol., \$249.50.

The value of "Great Books of the Western World" is greatly enhanced by three volumes that are the work of the editors.

In volume one, entitled *The Great Conversation*, Hutchins explains the educational principle behind the set and suggests ways—there are many—of using it. He points out that the basic ideas and imaginative symbols of our western tradition form the only common language we have; that only recently has a knowledge of this language begun to die out; that its current neglect is one reason for the confusion and babel in which we live.

Hutchins' phrase, "The Great Conversation," is not an advertising slogan. It is shorthand for a reality. Homer and Tolstoy do talk to each other, having partially the same subject matter. Volumes two and three, called *The Great Ideas, A Syntopicon of Great Books of the Western World*, demonstrate this. The demonstration cost about \$1,000,000. It involved 400,000 man-hours of reading and more than that of other labour by as many as 100 scholars. Syntopicon means "a collection of topics." It is a superindex to all the major ideas, notions, abstractions, visions, dogmas, truths (and errors), judgments and inspired guesses that have troubled the minds of the greatest intellects of our civilization for the last 3,000 years. In this Syntopicon, 163,000 references to the Great Books (plus the Bible) are ranged under 3,000 topics which are in turn grouped under 102 "Great Ideas," each idea being introduced by an essay, the work of the Syntopicon's editor, Mortimer J. Adler. Here is a basic invention that does for thought and imagination what the dictionary and encyclopedia do for words and facts. It proves that the Great Conversation exists, that the best minds of the past occupied themselves with the same persistent issues.

In addition to the Syntopicon, there are numerous other reader-aids, including extensive bibliographies and brief biographies of the 74 authors.

The Great Books set marks the progress America has made in educational philosophy since the days of the good Charles W. Eliot and his bargain-counter theory of education. Here are no snippets, but whole works. Here are no minor utterances, only basic ones. Here is the material, not for a hurried 15 minutes a day, but for a lifetime of education. (CL. FN.)

Great Britain & Northern Ireland, United Kingdom of.

An independent kingdom in north-western Europe, the United Kingdom comprises the main island of Great Britain, with numerous smaller islands off the English and Scottish coasts, and the six northeastern counties of Ireland. It is a constitutional monarchy, with a queen and parliament of two houses, the house of lords which on Nov. 12, 1952, consisted of 4 peers of the blood royal, 803 hereditary peers (21 dukes, 27 marquesses, 135 earls, 98 viscounts and 518 barons), 26 spiritual peers (2 archbishops and 24 bishops), 16 Scottish representative peers, a number of Irish representative peers (in 1952, 5; vacancies no longer filled) and 10 life peers who have held or hold high judicial office (2 of these were also hereditary peers); and the house of commons, numbering 625 members, elected by universal suffrage. Table I

Table I.—The United Kingdom

Division	Area (sq. mi.)	Population	
		(1951 census)	(1931 census)
England	50,327	41,147,938	37,359,045
Wales, including Monmouthshire	8,016	2,596,986	2,593,332
Scotland	30,411	5,095,969	4,842,980
Isle of Man	221	55,213	49,308
Channel Islands	75	102,770	93,205
Great Britain	89,050	48,998,876	44,957,870
Northern Ireland (q.v.)	5,451	1,370,709	1,279,745*
United Kingdom	94,501	50,369,585	46,237,615

*1937 census.

shows areas and populations of the component parts of the United Kingdom.

Table II.—*Chief Towns of the United Kingdom*
(With population over 200,000)

	1951 census	1931 census		1951 census	1931 census
London (greater), Eng.	8,203,942	8,346,137	Nottingham, Eng. . .	276,189	306,008
London (county and city), Eng. . .	4,397,003	3,348,336	Kingston-upon-Hull, Eng.	313,649	299,068
Birmingham, Eng. . .	1,002,603	1,112,340	Bradford, Eng. . . .	298,692	292,394
Glasgow, Scot.	1,088,417	1,089,555	Newcastle-upon-Tyne, Eng.	286,255	291,723
Liverpool, Eng.	856,072	789,532	Leicester, Eng. . . .	257,718	285,061
Manchester, Eng. . . .	766,311	703,175	Stoke-On-Trent, Eng.	276,639	275,095
Sheffield, Eng.	518,257	512,834	Coventry, Eng. . . .	178,126	258,211
Leeds, Eng.	482,827	504,954	Cardiff, Wales	226,937	243,627
Edinburgh, Scot. . . .	438,998	466,770	Portsmouth, Eng. . .	252,421	233,464
Belfast, N. Ire.	438,086*	443,670	Plymouth, Eng. . . .	213,038	208,985
Bristol, Eng.	403,948	442,281			

*1937 census

Language: English is almost universally spoken, but in Wales (according to the 1931 census) 3% of the population spoke Welsh only and 31% spoke both languages; in Scotland (1951 census) 2,652 spoke Gaelic only and 91,630 spoke both languages; in the Isle of Man 528 spoke English and Manx. Religion: Church of England (nominal membership 15,000,000, effective 5,500,000); Roman Catholic Church (England, Wales, Scotland and Northern Ireland, c. 3,500,000); Presbyterian Established Church in Scotland (1,600,000 in 1949); Church in Wales (est. 250,000); Methodists (1,500,000 in 1949); Jews (c. 400,000).

Queen, Elizabeth II (*q.v.*); prime minister in 1952, Winston Churchill (*q.v.*).

History.—*Political.*—At the beginning of 1952 the United Kingdom's capacity to pull out of its financial troubles and at the same time to sustain its full rearmament effort was still in doubt, while the issue of denationalizing the iron and steel and road transport industries promised bitter political conflict. Suddenly, on Feb. 6, King George VI died. Political strife subsided and the British family were drawn together by shared grief for the loss of a fine king and a good man. The heir to the throne, Princess Elizabeth, was in Kenya with her husband, the duke of Edinburgh, at the beginning of a five-month tour to British East Africa, Ceylon, Australia and New Zealand. She flew home immediately, becoming queen shortly before her 26th birthday. Later in the year she proclaimed that the royal house would continue to be known as the House of Windsor, not Mounbatten, which would have been the case had precedent been observed. The date of the coronation was fixed for June 2, 1953.

The accession of Queen Elizabeth II was hailed as an omen of another Elizabethan age of high achievement and national glory. Soon, however, the nation was to realize that, while these hopes might remain as a spur, achievement was very closely bound up with the realities pressing upon all nations. The hard facts were that the United Kingdom had to play its part in western defense, the Korean war, the Malayan campaign against the Communists and, as the dominant partner in the sterling area, prevent the dollar gap from becoming wider. At the same time the social services and full employment had to be maintained against the pressures of increasing prices and diminishing foreign markets. On all these issues the two great parties in the state, Conservative and Labour, were substantially in agreement. It is possible that the opposition would have given general assent to the budget and defense proposals had not internal conflict divided the Labour party, the left wing of which was dominated by Aneurin Bevan. This conflict came into the open during the defense debate in the house of commons on March 5. Before the debate the parliamentary Labour party held a meeting as the result of which an official opposition amendment presented to the house expressed "no confidence in the

capacity of Her Majesty's present ministers" to carry out the government's defense program. The Bevanites within the party had proposed a wider amendment, challenging the scope and priority of the whole rearmament program. This conflict between the followers of Clement Attlee and Bevan was given plenty of air on platform and in the press. The Bevanites contended that the United Kingdom could not at the same time maintain its exports and undertake the costs of its commitments to western defense, involving two years' conscription and the turnover to armaments of a great part of the country's engineering and heavy industries. On Sept. 30, at the Labour party conference at Morecambe, the Bevanites increased their strength on the national executive committee from 4 to 6 (out of a total of 27). The appearance of triumph came from the defeat of Herbert Morrison and Hugh Dalton. (See also POLITICAL PARTIES, BRITISH.)

R. A. Butler's first budget gave more than it took from the people. It proposed certain income tax concessions and higher family allowances and pensions, which would offset cuts in food subsidies; an excess profits levy, higher motor fuel duty, flat-rate motor car and entertainments duties, the raising of the bank rate to 4%, and certain modifications of the purchase tax in favour of the consumer. Drastic reductions were made in expenditure on school building programs because of steel shortages and the priority given to house building. However, education costs were £17,000,000 higher than in 1951.

The government took steps to redeem its election promise to build new homes at the rate of 300,000 a year. Harold Macmillan, minister for housing and local government, announced in January that the program would be freed immediately from artificial restrictions and expanded to the limit of available material and labour. By midsummer it was clear that considerably more than 200,000 houses would be built by the end of the year.

The most contentious political issues were the government's decision to denationalize the iron and steel and road transport industries, nationalized by the Labour government. In opposition, Churchill had warned the government that, if returned to power, the Conservatives would reverse this legislation. Now Churchill's government was warned by Herbert Morrison that if the Socialists won power they would again nationalize both industries. Although there were precedents, these cat-and-mouse methods were widely criticized as constitutionally unhealthy.

Churchill took an early opportunity to divest himself of his office of minister of defense, and Field Marshal Viscount Alexander of Tunis (*q.v.*), governor general of Canada, took over on March 1. He was raised in the peerage to an earldom.

The overseas trade position compelled modifications in the rearmament program by midsummer, when it was announced that more of the engineering industries would concentrate upon the export trade rather than on armaments. The United States helped by placing armament contracts in the United Kingdom thus giving these products the quality of exports. The decision to exclude the United Kingdom from the Pacific defense discussions between the United States, Australia and New Zealand created a bad impression. It was felt that the United Kingdom's interests in the far east, present as well as past, and the responsibility it had borne for so long for the defense of Australia and New Zealand, apart from other reasons of common aims in world defense, entitled it to a place in these talks.

Finance and Economics.—There was common ground between the political parties on the financial problems and their causes. The United Kingdom had moved from the position of universal provider in manufactures to that of a trader having to meet the fiercest competition. That it could hope to do only in the ranges of high-class goods. Attempts to close the dollar gap by restricting imports were successful. In the first half of

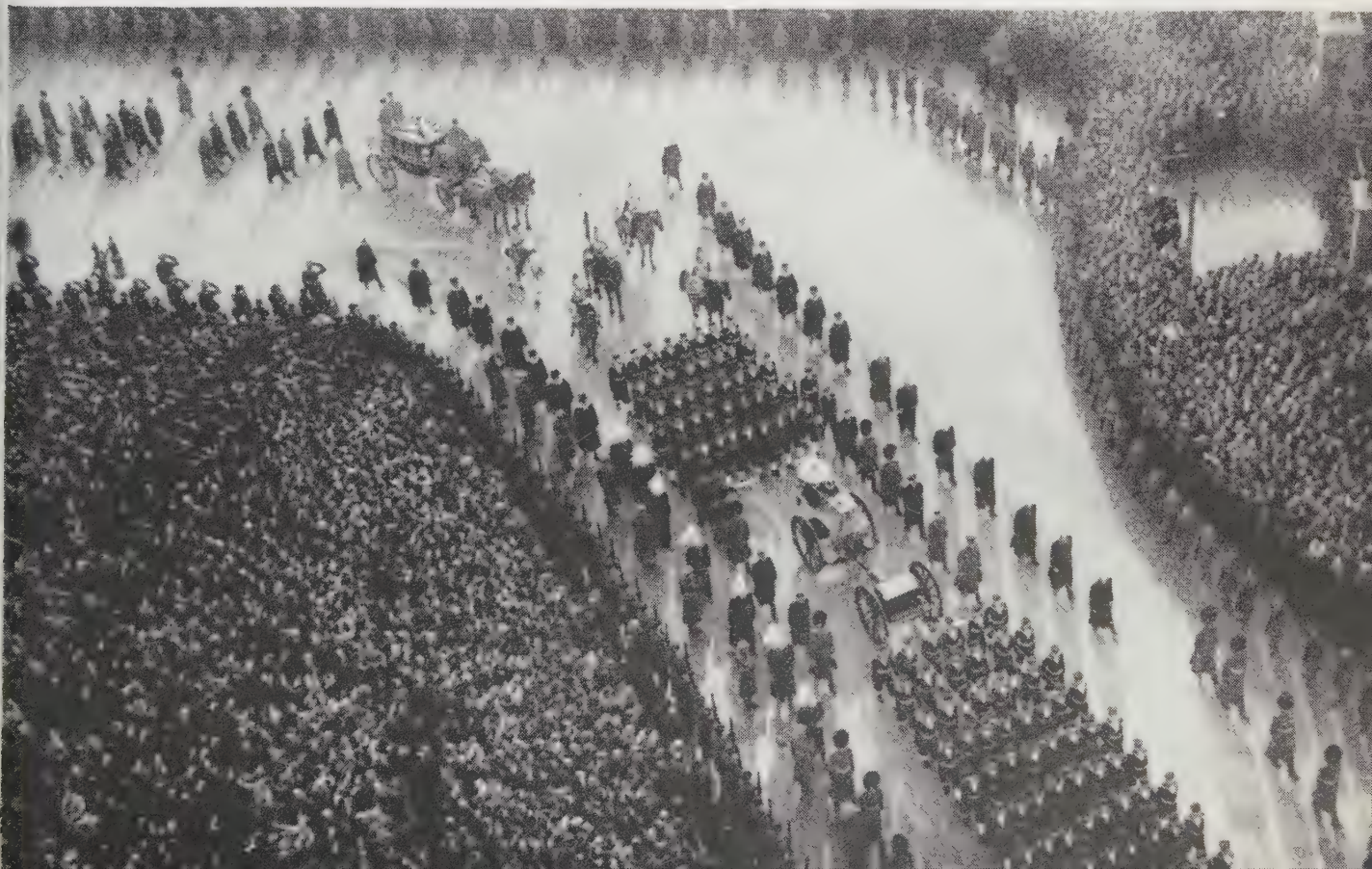
Right: HER MAJESTY QUEEN ELIZABETH arriving back in London from Kenya after learning of the death of her father on Feb. 6, 1952. On hand to meet her were (right to left) Prime Minister Winston Churchill, Clement Attlee, Anthony Eden and Lord Woolton



Below: THREE BRITISH QUEENS at Westminster hall, London, where the body of King George lay in state



Below: THOUSANDS OF MOURNERS watching the funeral procession as the body of George VI was taken to Paddington station for the final journey to Windsor castle. Sailors of the royal navy pulled a gun carriage bearing the casket; behind them was the queen's coach, followed by the four royal dukes of England



1952 the United Kingdom had a surplus of £24,000,000 in its balance of payments, without reckoning U.S. defense aid; whereas at the same time, there had been in the second half of 1951 a deficit of £394,000,000. But, as Butler said on Oct. 9 at the Conservative party conference at Scarborough, there were many things still to be put right and 1953 would be tougher than 1952.

Causes for the gold and dollar deficit were stated by the treasury to be: (1) the fall in sterling area earnings in the dollar area, (2) heavy sterling area purchases in the dollar area and (3) sterling area heavy deficits with the Organization for European Economic Cooperation countries. At the Commonwealth Finance Ministers conference in London in January the main action decided was tighter credit to combat inflation; efforts to increase export earnings; import cuts; and long-term borrowing "in some countries." The November conference was concerned with trade between the commonwealth nations and the finding of an agreed policy for the sterling area. The United Kingdom was concerned to maintain if not to increase its commonwealth trade, but it had great difficulty in doing this with Australia because of the adverse balance of payments there, and with Canada because the Canadian dollar was the world's hardest currency.

Food and raw material prices began to rise early in the year. These led to higher wage demands with their consequent effect on costs of production. Butler announced emergency measures to save £150,000,000 in external expenditure (bringing the total foreign exchange savings to £500,000,000 since the Conservative government came into power). The gold and dollar position improved so that the loss in the second quarter was less than \$16,000,000. The reserves stood at \$1,700,000,000 and Churchill claimed that by the end of the year the United Kingdom would be paying its way. However, a decline in government security prices set in at the end of September and upset the government's financial policy, although it justified Churchill's warning earlier in the year that the country's prosperity rested on a trap door. It was expected that, when parliament reassembled, steps would be taken to reverse the credit inflation policy which had sustained government security prices in the summer. (See also BUDGET, NATIONAL; INTERNATIONAL TRADE.)

Industry.—Production continued to expand, an exception being the cotton industry, and the full employment policy was maintained. A total of 22,221,000 in civil employment was the highest ever. Coal output improved steadily and a total of 220,000,000 tons for the year was expected. Steel production, which had receded in 1951 by 665,000 tons, recovered to the rate of about 16,500,000 tons a year. Industrial disputes tended to have a political purpose, but the Trades Union congress and the unions discouraged this and, indeed, gave general consent to Butler's appeal for moderation in wage claims, which was supported by Hugh Gaitskell, former Labour chancellor of the exchequer.

Weekly wage increases for the first eight months were £2,338,900 for 6,101,000 workers, compared with £3,713,000 for 8,504,000 workers in the corresponding period of 1951. Included were increases for most civil servants at a cost of about £35,000,000 a year. The miners' claim of 30 s. a week extra and the engineers' for £2 a week were not settled. While the miners' case went automatically to arbitration, the engineers refused arbitration and decided on a national ban on overtime and strict limitation of piecework in the engineering, shipbuilding and ship-repairing industries after Oct. 20. This affected 3,000,000 workers and was a threat to the rearmament program as well as to export trade. On Oct. 8, however, the leaders of the Confederation of Shipbuilding and Engineering union agreed to postpone indefinitely their ban after an assur-



"KICKING A CRIPPLED LION," a 1952 cartoon by Costello of the *Knickerbocker News* (Albany, N.Y.)

ance from employers that pay negotiations with the union would open.

The *Ministry of Labour Gazette* showed the index of wage rates in April to be 128 (June 1947=100); while the retail prices index was 137 on Aug. 12 (June 17, 1947=100), a fall of one point from the previous month. Average weekly earnings for all classes and ages of workers in April were £7 7s. 3d. compared with £2. 13s. 3d. in Oct. 1938. (See also ATOMIC ENERGY; COAL EMPLOYMENT; LABOUR UNIONS; STRIKES; WAGES AND HOURS.)

Foreign Affairs.—Anglo-American understanding remained the basis of U.K. international policy. In January Churchill and Eden visited the United States for talks with Pres. Harry Truman and Dean Acheson. Both countries reaffirmed their joint efforts toward "building up the strength of the free world"; they agreed on maintenance of the U.S. bases in the United Kingdom; reaffirmed their peaceful intentions and efforts to maintain peace; and gave full support to establishing the European Defense Community and to promoting stability and peaceful development in the middle east, where it was essential to set up a middle east command. There were discussions on the sharing of scarce materials, and it was agreed that the United States would let the United Kingdom have 1,000,000 tons of steel in 1952, while the United Kingdom would make available to the United States 55,100,000 lb. of Canadian aluminum and 20,000 long tons of tin. The United Kingdom also transferred to the United States 20,000 tons of rubber for strategic stock-piling.

The United Kingdom ratified the Japanese Peace treaty, but the Labour party expressed fears of unfair competition with British industries. This fear was found to be justified later in the year when Japanese cotton competed with Lancashire goods in Asia and west Africa. Lancashire called for an understanding between the U.S., Japanese and U.K. exporters and a three-

nation conference on the matter was held in Buxton, Eng., in September–October. The U.S. and Japanese exporters stood for free unlimited competition against the British contention for the division of markets and no satisfactory arrangement was in sight.

In Europe the United Kingdom found itself in an anomalous position vis-à-vis the Council of Europe and the six nations of the European Coal and Steel community. While the movement toward an integration of European states was largely inspired by the United Kingdom, the two main British parties agreed that it could not itself become a member of the federation or of the coal and steel community, because of its unique position as centre of a world-wide commonwealth, an Atlantic power and a European power. It was, however, a member of the Council of Europe. In September the coal and steel community decided to work out plans for an European political community, taking the task out of the hands of the Council of Europe. The danger to the United Kingdom was that it might be isolated from Europe politically and economically while carrying so much of the burden of Europe's defense. Point was lent to this by the growing influence of Germany in the European Coal and Steel community.

The failure to reach a decision in the Korean war was a continued irritation, but this was allayed somewhat by the visit of the minister of defense (Alexander) and the minister of state (Selwyn Lloyd) to the supreme commander's headquarters.

The Iranian oil position did not improve, although the Truman-Churchill offer to Mohammed Mossadegh provided for arbitration, the lifting of certain financial restrictions and the immediate granting of \$10,000,000 from the United States. The proposals were rejected. Previously, in July, the International Court of Justice at The Hague had decided that it was not competent to consider the British charge that Iran had violated international law in nationalizing the Anglo-Iranian Oil company's £500,000,000 Iranian properties.

The only overt British reaction to the Egyptian constitutional crisis was a reaffirmation of the pledge of self-government and self-determination for the Sudan while offering to include Egypt as an equal partner in the middle east defense system.

Anthony Eden visited Marshal Tito in Yugoslavia in September. Tito was invited to visit Britain. These talks were regarded as of the first importance because they indicated the growing disposition of Tito's Yugoslavia to work in harmony with the western world. (See also EGYPT; EUROPEAN UNION; IRAN; KOREAN WAR; NORTH ATLANTIC TREATY ORGANIZATION; UNITED NATIONS.)

Commonwealth.—Australia's decision in April to cut imports by £A500,000,000 to £A600,000,000 a year was a heavy blow to British trade. Australia had a similar problem as the United Kingdom in trying to balance its payments.

In Malaya the high commissioner, Sir Henry Gurney, had been assassinated in Oct. 1951 and was succeeded in Jan. 1952 by Gen. Sir Gerald Templer who intensified the campaign against the Communists in the Malayan federation.

The plan for a Central African federation involving Northern and Southern Rhodesia and Nyasaland, initiated by the Labour government, was taken a step further by the holding of a London conference, but little progress was made toward allaying the fears of the coloured Africans of Northern Rhodesia and Nyasaland that their interests would not be maintained by federation. In the United Kingdom public feeling hardened against the apartheid policy of the South African government and that government's claim for the incorporation of the British high commission territories in the union. (See also COMMONWEALTH OF NATIONS and articles on the various member countries.)

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Report on Economic Situation, prepared by General Council for the Margate Congress (Aug. 19, 1952); *Iron and Steel* (London, July 28, 1952); *Towards World Plenty*, Labour Party pamphlet (July 1952); *National Coal Board Report for 1951* (May 1952). (D. R. PR.)

Education.—(1951, unless otherwise stated) *England and Wales*: nursery schools and classes, pupils 82,076; primary schools 23,118, secondary schools 5,016, total primary and secondary pupils 5,823,819; special schools (for physically or mentally handicapped children) 634, pupils 49,054; further education (mainly evening institutes) 11,439, pupils 54,360 full-time and 2,305,037 part-time; full-time teachers (all schools) 224,069. *Scotland*: nursery schools and classes, pupils 4,412; primary schools 2,870, pupils 546,336, teachers 17,628; secondary schools 909, pupils 232,897, teachers 12,976; special schools, pupils 10,351; further education (mainly continuation-class centres) 1,494, pupils 272,308 (262,885 part-time, 9,423 full-time). *Northern Ireland*: nursery schools 23, pupils 709; primary schools 1,629, pupils 192,736; secondary schools 92, pupils 36,321; special schools, pupils 776.

Universities (1951–52): *England*: 13, full-time students 59,814, teaching staff (1950–51) 5,439; *Scotland*: 4, students 15,267, teaching staff 1,380; *Wales*: 1, students 4,874, teaching staff 568; *Northern Ireland*: 1, students 2,277, teaching staff 356. University colleges (institutions with either limited or no power to confer degrees): *England*: 4, full-time students 3,815, teaching staff 438; *Wales*: 1, students 160, teaching staff 12.

Finance and Banking.—Budget (actual 1951–52): revenue £4,433,400,000, expenditure £4,053,700,000; (est. 1952–53) revenue £4,661,400,000, expenditure £4,230,600,000. National debt (Sept. 30, 1952) £26,129,000,000. Currency circulation (Sept. 30, 1952) £1,445,700,000. Gold and dollar reserves of the sterling area (Sept. 30, 1952) U.S. \$1,685,000,000. Exchange rate since Sept. 18, 1949, £1 = U.S. \$2.80.

Foreign Trade.—Imports (1950) £2,608,200,000, (1951) £3,916,800,000; exports including re-exports (1950) £2,256,000,000, (1951) £2,707,100,000. Main sources of imports (1950); sterling area 38%, dollar area 18.4%, nonsterling countries in the Organization for European Economic Cooperation 25.2%. Main destinations of exports (1950): sterling area 48%, dollar area 13%, nonsterling O.E.E.C. countries 25.2%.

Transport and Communications.—Railways: *Great Britain*, total first track (all gauges, 1950) 19,500 mi.; *Northern Ireland* (1949) 1,035 mi. Passenger journeys originating (British railways, monthly average, 1951) 103,000,000. Freight traffic originating (weekly average 1951) 5,100,000 tons; net ton-miles 439,000,000. Roads (1950): *Great Britain*, 183,821 mi. Motor vehicles licensed (Dec. 1951): 4,625,000, including 2,380,000 cars; new registrations (1951) 413,916, including 137,316 cars. Air transport (U.K. air lines, all services, monthly averages, 1951): miles flown 4,472,000, passengers carried 117,600; passenger-miles 89,600,000; freight carried 2,617,000 short ton-miles; mail carried 1,450,000 short ton-miles. Shipping: merchant vessels on the U.K. register, 500 gross tons and over (Aug. 1952): nontankers 13,073, tankers 4,428. Shipping movement at U.K. ports (net registered tons, monthly average, 1951): entered with cargo, mail only 74,000, other 5,224,000; entered in ballast with passengers only 369,000, calling for bunker only 73,000, other 782,000. Number of private telephone stations (March 31, 1950): 5,171,491 (approximately 70% with automatic dial). Radio receiving sets licensed (Aug. 1952): 11,208,000; television licences (Aug. 1952): 1,597,900.

Agriculture and Fisheries.—Production (long tons, 1952 est.): wheat 2,216,000; barley 2,199,000; oats 2,595,000; rye 52,000; mixed corn 813,000; potatoes 7,266,000; sugar 4,327,000. Livestock (June 1952): cattle 10,253,000; sheep 21,653,000; pigs 4,923,000; poultry 94,664,000.

Fisheries (total catch, 1951): *England and Wales*, 700,100 long tons, worth £34,476,000; *Scotland*, 244,200 long tons, worth £10,858,000. This excludes shellfish but includes gray mullet and whitebait.

Industry.—The number of industrial establishments with more than ten employees (April 1948) was 51,040. The total working population in 1952 was 23,316,000 of whom 15,978,000 were men. There were 872,000 in the armed forces, of whom 848,000 were men. There were 415,000 registered unemployed, compared with 188,000 a year before.

Industrial production (1951): coal 222,180,000 long tons; gas 556,920,000 cu.ft.; electricity 59,964,000,000 kw.hr.; iron ore (metal content) 14,664,000 long tons; pig iron 9,497,000 long tons; crude steel 15,638,000 long tons; tractors 140,210; motor cars 475,919; trucks 257,964; steam locomotives 719; railway coaches 2,331; freight cars 41,447; aircraft (excluding military except for export) 527; shipbuilding (completed merchant vessels, 100 gross tons and over) 1,343; cotton woven cloth 2,199,000,000 yd.; woven wool fabrics 418,000,000 sq.yd.; rayon filament yarn 216,000,000 lb.; rayon staple fibre 167,000,000 lb.

Great Lakes Traffic: see CANALS AND INLAND WATERWAYS.

Greece. Greece is a kingdom in the southern part of the Balkan peninsula. Area: 51,182 sq.mi. including the Dodecanese Islands (1,035 sq.mi.); the mainland accounts for 41,328 sq.mi. and the Aegean islands, of which the largest is Crete (3,235 sq.mi.), for 9,854 sq.mi. Pop.: (1940 census, without the Dodecanese) 7,344,860; (1951 census) 7,631,124. Language (1940 census): Greek 6,794,309 (93%); Turkish (Turks and Turkish-speaking Greeks from Anatolia) 222,968; Macedonian Slav 81,860; Vlach 57,263; Albanian 69,629; Bulgarian (Pomaks) 18,086, etc. Religion (1940 census): Greek Orthodox 7,090,192 (96.5%); Roman Catholic 29,136; Gregorian (Armenian) 16,350; Moslem 134,722; Jewish 53,095 (reduced to

9,000). Chief towns (1951 census, municipal area only): Athens (cap., 559,250); Piraeus (184,980); Salonika or Thessaloniki (216,838); Patras (88,414); Volos (51,134); Larissa (43,163). Ruler, King Paul I; prime ministers in 1952: Gen. Nicholas Plastiras, Demetrios Kiousopoulos and after Nov. 19 Field Marshal Alexander Papagos.

History.—The absence of any guerrilla warfare noted during 1951 continued throughout 1952, but evidence of subversive underground activity came to light following the discovery of two secret hiding places in the outskirts of Athens containing radio transmitters and other apparatus. Police raids on these hiding places led to the arrest of 29 persons, including 8 women, who appeared before the Athens Permanent Military court in February. Their trial, lasting two weeks, culminated in the sentencing to death of 8 of the accused, including the ring leader Nicholas Beloyannis who had been sent from abroad by the Communist party, and of another 14 to various terms of imprisonment. The Council of Grace allowed four of the appeals against the death sentence; the other four prisoners were executed on March 30.

The Pacification bill, from which nearly 20,000 persons serving prison sentences derived benefit, was ratified by parliament on March 9. By virtue of this measure all death sentences passed before Oct. 31, 1951, were automatically commuted to imprisonment, and the release was authorized, under certain conditions, of persons serving sentences of 10 to 20 years' imprisonment for crimes relating to the Communist rebellions, with the exception of espionage.

The decision reached at the North Atlantic Treaty organization (NATO) conference at Ottawa, Ont., in Sept. 1951 to invite Greece and Turkey to adhere to the treaty came into effect in February in time for Greece to participate in the Lisbon conference as a full member. Panayotis Pipinelis, a diplomat and former foreign minister, was appointed permanent delegate to the NATO deputies' council.

On July 16 it was announced from SHAPE that the Southern Europe command would consist of two sectors, and that the Greek land forces would be included in the southeastern European sector of this command, with headquarters at Smyrna, Turk., and an advance echelon at Salonika. During the year several NATO military leaders, including Gen. M. Ridgway and Field Marshal Viscount Montgomery, visited Greece and had conversations with Greek military chiefs.

In September it was announced from Athens that the period of military service would be reduced to 24 mo. (in certain cases to 30 mo.).

Foreign Affairs.—The improvement in Graeco-Yugoslav relations showed further steady progress during the year. A Greek parliament delegation comprising 18 deputies of all parties headed by the speaker of the chamber, Demetrios Gondikas, paid a visit to Yugoslavia in July. The visit was returned in August by a 14-member Yugoslav parliamentary delegation headed by the vice-president of the presidium of the Yugoslav People's assembly, Moshe Pijade. A Yugoslav military mission also visited Greece in September "to establish contact with the leaders of the Greek armed forces in order to complete the atmosphere of friendship already existing in other spheres." During the year two further groups of Greek children from among those abducted by the Greek Communist forces during the guerrilla war were repatriated from Yugoslavia with the co-operation of the International Red Cross. On Sept. 15 it was announced that Greece and Yugoslavia had decided to raise their respective legations in Belgrade and Athens to the status of embassies.

In January Sophocles Venizelos, deputy premier and foreign minister, visited Ankara to discuss defense and other matters,



TWO GREEK WOMEN accused of espionage leaving an Athens courtroom under heavy guard during a recess in courtmartial proceedings early in 1952. They were among 29 defendants charged with sending secret information to agents of the Cominform

and a Mixed Graeco-Turkish commission was set up to deal with questions of common interest. Adnan Menderes, the Turkish premier, and Fuat Köprülü, foreign minister, paid an official visit to Greece in April, and in June King Paul and Queen Frederika paid a state visit to Turkey, this being the first occasion on which a Greek sovereign had paid an official visit to that country.

On July 26 a clash occurred between Greek and Bulgarian patrols on the disputed islet of Gamma in the Maritsa (Evros) river near the point of junction of the Greek, Bulgarian and Turkish frontiers. A U.N. Balkan commission observers' team investigated the incident on the spot and submitted a report to the U.N., placing responsibility for the incident on Bulgaria but stressing the need for a delimitation of the Graeco-Bulgarian frontier on the Maritsa if fresh incidents of this kind, constituting a threat to Balkan peace, were to be avoided.

Home Politics.—The coalition government of National Progressives (E.P.E.K.) and Liberals sworn in on Oct. 27, 1951, continued in office, despite its narrow majority. There was steadily growing friction with the main opposition party, the Greek Rally, led by Field Marshal Alexandros Papagos. On March 31 all the Greek Rally deputies withdrew from the chamber in protest against an order of the day issued by Vice-Adm. Alexandros Sakellariou, minister of defense, which the Rally considered as reflecting on Field Marshal Papagos; although Sakellariou had resigned from the government on March 28, the deputies did not return until April 15 after the offending order had been declared annulled by the prime minister.

On March 10 General Plastiras was taken seriously ill with cerebral thrombosis and delegated his powers to Venizelos before leaving for France to undergo treatment. Although not fully cured, he had sufficiently recovered to return to Athens early in August and open a full-dress debate in the chamber on the government's economy policy. The debate culminated on Aug. 22 in a vote of confidence for the government by 127 votes to 118. Soon afterward the government introduced in parliament a new electoral law restoring the majority system in

place of the proportional system hitherto in force. The new law was passed by a majority vote after a three-week debate and was signed by the king on Oct. 5. The government resigned Oct. 10. King Paul proclaimed new elections for Nov. 16 and appointed Demetrios Kiousopoulos to head the government in the interim. Field Marshal Papagos and the Greek Rally won a sweeping majority in the elections, capturing 239 of the 300 seats in the national assembly. (A. A. P.)

Education.—Schools (1951-52): primary 8,613, pupils 921,632; secondary 314, pupils 178,098; universities 2, professors and lecturers 211, students 6,730; other institutions of higher education 4. Illiteracy (1941): 27% average.

Finance and Banking.—Budget (1951-52 actual) revenue dr. 5,879,000,000,000; expenditure dr. 7,459,000,000,000; (1952-53 est.) revenue dr. 7,892,000,000,000, expenditure dr. 8,291,000,000,000. Currency circulation (Aug. 1952): dr. 2,181,813,000,000. Bank deposits (Aug. 1952): dr. 2,083,791,000,000. Monetary unit: drachma with an exchange rate (Oct. 1952) of dr. 42,000 to the pound sterling and dr. 15,060 to the U.S. dollar.

Foreign Trade.—(1951): Imports dr. 5,974,000,000; exports dr. 1,526,000,000. Main sources of imports (1951): U.S. 30%; U.K. 15%; Germany 9%; Italy 9%. Main destinations of exports: U.K. 15%; U.S. 14%; Germany 20%; France 11%. Main exports (1951-52): tobacco 10%; currants and raisins 20%; olives and olive oil 3%; wines and liquors 3%.

Transport and Communications.—Roads (1950): 15,486 km. Licensed motor vehicles (June 1952): cars 9,337, commercial vehicles 21,250. Railways (1950): 2,679 km. (1,325 km. state-owned); number of locomotives 145. Shipping: merchant vessels of 100 gross tons and over (Dec. 31, 1951) 331; total tonnage 1,259,365. Telephone subscribers (1951): 81,905. Radio receiving sets (1951): 225,000.

Agriculture and Fisheries.—Main crops (metric tons, 1951): wheat 330,000; barley 230,000, (1952) 235,000; oats 140,000, (1952) 140,000; rye 48,000; maize 220,000; potatoes 413,000; rice 56,000; grapes 110,000; citrus fruit 137,000; tobacco 62,000; cotton 81,000; olive oil 160,000. Livestock (Dec. 1950): cattle 700,000; sheep (Jan. 1951) 3,844,000; pigs 550,000; horses 238,000; mules 156,000; goats (1951) 1,083,000. Meat production (1951): 75,800 metric tons. Fisheries: total catch (1951) 45,000 metric tons.

Industry.—Fuel and power: lignite (1951) 177,010 metric tons; electricity (installed capacity, 1950), 245,000 kw. Raw materials (metric tons, 1951): bauxite 163,000; magnesite 15,000; iron pyrites 181,000; chromite 25,000. Index of industrial production, 1951 (1948=100): general 171; manufacturing industries 175.

Greenland. A large island (840,000 sq.mi., about 705,000 sq.mi. covered by an ice cap), Greenland is a Danish possession in the North Atlantic ocean, northwest of Iceland. Pop. (1950 est.): 23,019, distributed in settlements along the west coast except for 1,588 on the east coast; 941 Europeans (mostly Danes), the rest native Greenlanders (Eskimos). Language: Danish and Eskimo. Religion: Lutheran. Capital, Godthaab (second governor's seat, Godhavn). Governor general in 1952, Poul Hugo Lundsteen.

History.—In accordance with the Danish-U.S. agreement of April 27, 1951, for the joint defense of Greenland, the U.S. air force in the summer of 1952 pursued the construction of an air base at Thule in the far north of Greenland, work having been started late in the summer of 1951. The base, whose code name was "Blue Jay," was to be completed in 1953 and its cost was estimated at nearly \$300,000,000.

At a meeting in Copenhagen, Den., on June 28 a new company was set up to extract rich mineral deposits, especially of lead, zinc and wolfram, which had been discovered three years previously in the Mesters Vig area (region of Kong Oscars fjord) of eastern Greenland by the Danish geologist Lauge Koch. The new company, Det Nordiske Mineselskab A/S, had an initial share capital of 15,000,000 Kr., of which the Danish government took over 27.5%, Danish industrial, commercial and banking interests another 27.5%, while the remaining 45% was taken over jointly by the Canadian mining concern Frobisher's, Ltd., and the Swedish Boliden Mining company. Investigations had revealed lead deposits under the ice of eastern Greenland amounting to 400,000 tons, and further drillings were expected to confirm still larger deposits of lead, zinc and wolfram. The first group of 140 scientists, technicians and workers started the preparatory works at Mesters Vig in July, laying out *inter alia*

a landing strip for planes. It was stated that the total capital eventually required for the Nordiske Mineselskab would be from 100,000,000 Kr. to 150,000,000 Kr.

The development of political and social life in Greenland called for abolition of the existing colonial status of the island, and the country council asked in the summer for Greenland representation in the Danish *rigsdag*. King Frederick IX of Denmark, accompanied by Queen Ingrid, paid an official visit to Greenland in July, this being the first occasion for more than 30 years on which a Danish monarch had visited the colony. (H. LN.)

Education.—Schools (1948): infant and primary 175, pupils 4,200, teachers 237; postprimary 4, pupils 100, teachers 15; technical 1, pupils 50, teachers 2. Institutions of higher education 2, students 45, lecturers 10.

Finance.—Budget (1948-49): revenue 17,449,000 Kr., expenditure 23,593,000 Kr. Monetary unit: Danish krone, with an exchange rate of 19.34 Kr. to the pound and 6.92 Kr. to the U.S. dollar.

Foreign Trade.—(1950) Imports from Denmark 23,300,000 Kr., exports to Denmark 16,800,000 Kr.; imports from U.K., £53,385, (1951) £45,198; exports to U.K. £752, (1951) £1,926.

Agriculture and Fisheries.—Sheep (1949-50) 11,000. Fisheries (1950) salted cod exported 7,000 metric tons.

Grenada: see WINDWARD ISLANDS.

Gromyko, Andrei A. (1909-), soviet diplomat, was born on July 5 in Starye Gromyki, Byelorussia. He graduated from the Minsk Institute of Agricultural Economics in 1934. In 1938 he was taken into the commissariat for foreign affairs, and after a year's training was sent to Washington, D.C. In Aug. 1943 he succeeded Maxim Litvinov as soviet ambassador to the U.S. and to Cuba. He headed the soviet delegation to the Dumbarton Oaks conference in 1944, attended the United Nations organization conference at San Francisco, Calif., in 1945, and was appointed chief soviet representative to the U.N. On April 10, 1946, he was freed from his duties as ambassador to become permanent soviet delegate to the U.N. Security council. On Dec. 29, 1947, it was announced that he had been promoted to deputy foreign minister, and in July 1948 he was replaced on the Security council by Jacob Malik and returned to Moscow.

In Sept. 1951 Gromyko was soviet spokesman at the San Francisco conference to sign the Japanese peace treaty, and he sought repeatedly to upset the conference schedule, first by calling for the seating of Red China, then by opposing motions that limited debate and barred soviet efforts to amend the draft of the treaty. He was finally voted out of order and silenced. In June 1952 he was named soviet ambassador to Great Britain.

Ground Observer Corps: see AVIATION, MILITARY; CIVIL DEFENSE, U.S.

Guadeloupe. This French overseas *département*, situated in the Lesser Antilles, consists of two main and five smaller islands. Total area: 686 sq.mi. Pop.: (1946 census) 278,464; (1951 est.) 292,000, mainly Negro or mixed. Language: French patois. Religion: Roman Catholic. Chief towns (pop., 1946 census): Basse-Terre (cap., 10,086); Pointe-à-Pitre (41,323). Prefect: Gaston Villeger.

History.—Two Radicals were elected to the senate in May 1952, defeating Socialist and Communist candidates. A series of strikes in January was accompanied by a certain amount of disorder.

Pointe-à-Pitre airport was completed; it had 1,600 m. of runway. Runways were also being constructed on Marie Galante, Saint Martin and Saint Barthélémy. A circular road was being made. Irrigation works were begun at La Grande Terre. Vats were set up for storing rum.

Education.—All children of school age receive primary education; there are two lycées.

Foreign Trade.—(1951) Imports 9,146,000,000 fr. (including 7,800,000,000 fr. from the French union); exports 8,100,000,000 fr. (including 7,800,000,000 fr. to the French union), mainly sugar (3,830,000,000 fr.), bananas (2,400,000,000 fr.), rum (1,136,000,000 fr.).

Transport and Communications.—Ships entered (1951), 593.
(Hu. De.)

Guam. Guam is the largest and southernmost island of the Marianas, lying in the Pacific at 13° 26' N. lat. and 144° 39' E. long., about 5,100 mi. W. of San Francisco, Calif., 3,340 mi. W. of Honolulu, T.H., and 1,500 mi. E. of Manila, Phil. Area: 206 sq.mi. Population, June 30, 1952, 59,498, of which about 28,500 were Guamanians and the rest non-Guamanians, of whom about half were U.S. military and civil service personnel, and the other half workers recruited in the U.S., Hawaii, the Philippines and other Pacific islands. Agaña is the capital. Other important towns are Sinajana and Inarajan. The Guamanians are Chamorros, and their religion is predominantly Roman Catholic. Governor in 1952: Carlton Skinner.

History.—Guam is an unincorporated territory of the United States and an organized sovereignty, governed under the Organic Act of Guam, passed by the U.S. congress and approved by the president on Aug. 1, 1950. Under this legislation, Guamanians became citizens of the U.S., with all rights and privileges thereof, replacing their former status as citizens of the territory and nationals of the United States.

In 1952 Guam's approximately 30,000 ac. of public domain lands were transferred from the jurisdiction of the U.S. department of interior to the government of Guam. The land was to be used for the rehabilitation of persons who lost their homes during World War II.

Education.—In 1951 there were 21 public elementary and junior high schools and 1 high school with a total of 9,225 pupils and 311 teachers. There were also 4 parochial schools with 1,164 elementary and secondary school students. Instruction is given in English. About 84% of the population was literate according to the 1940 census.

Finance.—During the fiscal year ending June 30, 1951, Guam's expenditures amounted to \$5,114,405, revenues amounted to \$4,168,867 and U.S. grants amounted to \$1,200,000.

Production and Trade.—Agricultural production in the year ending June 30, 1951, included (in pounds): corn 416,430; coconut 316,330; vegetables 230,860; bananas 200,400; taro 192,790; sweet potatoes 161,090; cassava 120,820; yams 81,106; watermelon 55,040; papaya 51,520; sugar cane 37,865; and mango 37,000. The fish catch in the same period totalled 691,140 lb. In 1951 Guam had about 10,000 hogs, 4,000 cattle, 70 horses, 100,000 chickens and 1,125 goats. In the fiscal year ending June 30, 1951, imports totalled \$12,504,246 and exports \$2,231,192. The major imports were foodstuffs, building materials, textiles, tobacco and liquor. The major exports were 11,000 tons of scrap metal and 349 tons of copra. Guam's imports come in descending order of importance from the United States, Japan, the Philippines, Hong Kong, Hawaii and Australia; exports go to the United States, Hawaii and the Philippines.

Transportation and Communications.—In 1952 there were 80 mi. of paved highways in Guam and about 60 mi. of improved secondary roads. There were no railways, but five military airfields. The navy operated the island's telephone and electricity systems. Radio facilities existed through the U.S. armed forces radio network and the Andersen airfield radio station. Pan American World Airways and Philippine Airlines provided air service for the island.
(S. Nr.)

Guatemala. A Central American republic, Guatemala is bounded by Mexico, British Honduras, Honduras and El Salvador. Area: 45,452 sq.mi.; pop. (1950 census of the Americas): 2,787,030; (1951 est.): 2,887,000. Capital: Guatemala City (1946 est. pop., 225,000). Other urban centres (1940 census) are Antigua Guatemala (12,601), Chiquimula (10,868), Comalapa (10,461), Mazatenango (14,227), Puerto Barrios (15,784), Quezaltenango (33,538) and Zacapa (14,443). Language: Spanish; religion: predominantly Roman Catholic. President in 1952: Lieut. Col. Jacobo Arbenz Guzmán.

History.—Charges of increasingly Communist orientation continued to be made against the Arbenz administration as U.S. firms doing business in Guatemala faced renewed difficulties in 1952. The United Fruit company was ordered in January to pay \$500,000 in back wages to 3,700 employees who had been laid off after a hurricane had devastated the company's Pacific coast banana plantations in Sept. 1951. The order stipulated that the

United Fruit company's \$25,000,000 investments in Guatemala would be "embargoed" if the measure were not obeyed. The company protested the ruling, and on Feb. 19 a labour court set March 5 as the date for auctioning off a portion of United Fruit's properties in the country. Shortly afterward, two U.S. congressmen from Massachusetts, John W. McCormack, Democrat, and Joseph W. Martin, Jr., Republican, issued a joint statement asserting that Guatemala had become a "beachhead" of Communism; Martin pointed to the United Fruit company's predicament as illustrative of the "ruthless nature of the Communist attack." On March 3 fires ravaged the banana fields. Tiquisate, virtually completing the ruin of the company's plantations on the Pacific coast. At length, the Arbenz government cancelled the scheduled auction, after United Fruit agreed to (1) pay \$650,000 in back wages, (2) extend its union contract for three years, (3) reinstate laid-off workers and (4) rehabilitate the damaged plantations. The company resumed operations in Guatemala on March 17. A month later, the Pan-American Life Insurance company, a New Orleans corporation which had been doing business in the country for 30 years, withdrew from Guatemala, alleging its inability to comply with the government's restrictive insurance law. An agrarian reform law designed to subdivide landed estates larger than 225 ac. entered into force on June 18. The measure provided for the reimbursement of dispossessed landowners during a 25-year period.

Meanwhile, illegal anti-Communist demonstrations were held throughout the country on March 23; an estimated 30,000 participated in the meetings at Guatemala City alone. On April 11 two labour unions, representing about 80,000 workers, announced that they would not take part in the May 1 Labour day rally, charging that the demonstration would be Communist-oriented.
(G. I. B.)

Education.—In 1949-50 there were 3,397 primary schools with 9,770 teachers and 164,815 pupils in attendance; secondary and other schools had 1,126 teachers and 57,708 pupils in attendance. University education was available at the University of Guatemala. The 1950 census showed that 72.2% of those seven years of age and over were illiterate. Education was scheduled to receive 14% of the 1952-53 budget.

Finance.—The monetary unit is the quetzal, at par with the U.S. dollar. The 1952-53 budget was initially placed at \$63,400,000, the largest on record (1951-52, \$59,664,000). The internal debt on Dec. 31, 1951, was reported to be \$18,898,743 and the external debt \$86,480. Currency in circulation (July 31, 1952) was \$40,400,000; gold reserves \$27,200,000; demand deposits \$23,600,000; time deposits \$1,100,000; government deposits \$6,900,000. The cost-of-living index stood at 96 on June 30, 1951 (1948=100).

Trade and Communications.—Exports in 1951 totalled \$76,084,997; imports \$80,846,452. Leading exports were coffee (77%), bananas (8%), essential oils (3%) and chicle (3%). Leading customers were the U.S. (88%), the Netherlands (3%), Canada (3%) and Belgium (2%). Leading suppliers, the U.S. (67%), Mexico (5%), Germany (5%), the United Kingdom (4%) and the Netherlands Antilles (4%).

In 1950 there were 608 mi. of railroad on which 3,826,700 passengers were carried. Highway mileage (1949) was 4,800.

Agriculture.—Production of coffee in the 1951-52 season was 1,100,000 bags of 132 lb. each, of which 900,000 bags were exported (1950-51 exports, 818,244 bags). Banana exports in 1951 amounted to 5,264,832 stems. Other crops (with 1950-51 production estimates) were white sugar 27,375 short tons; panela 28,893 tons; corn 710,000,000 lb.; bean 130,000,000 lb.; abacá 8,700,000 lb.; rice 15,000,000 lb.; and lint cotton 2,900,000 lb. The 1950 livestock census showed 902,915 cattle, 415,293 pigs, 711,579 sheep and 182,580 horses. Essential oil exports (large citronella and lemon grass) totalled 1,500,000 lb. in 1951. Chicle exports were 2,630,000 lb.

Manufactures.—The most important industries, by value of production were beverages, foodstuffs, textiles, clothing and tobacco. Cement production totalled 57,500 metric tons in 1951.
(J. W. Mw.)

Guggenheim Memorial Foundation, John Simon: see SOCIETIES AND ASSOCIATIONS, U.S.

Guiana, British: see BRITISH GUIANA.

Guiana, Dutch: see SURINAM.

Guiana, French: see FRENCH GUIANA.

Guided Missiles: see JET PROPULSION; MUNITIONS OF WAR.
Guinea: see FRENCH UNION; PORTUGUESE OVERSEAS TERRITORIES; SPANISH COLONIAL EMPIRE.

Guinea, French: see FRENCH WEST AFRICA.

Gymnastics. The senior championships of the Amateur Athletic union of the United States and final Olympic tryouts for men and women were combined in two days of competition that drew a star field to Penn State college, State College, Pa., April 25-26, 1952. Only two champions repeated in the men's group, Richard Browning of Champaign, Ill., in tumbling, and Gene Rabbitt of the Florida State Gymkana club, on the side horse.

Robert Stout, Philadelphia Turners, scored 329.7 points for all-around honours and also won on the horizontal bar. Edward Scrobe of the American Turners, New York city, triumphed on the parallel bars and was runner-up for the all-around prize with 328 markers. Jean Cronstedt, Penn State college, an exchange student from Finland, was victor in calisthenics. Other victors were Don Perry, Pasadena City college, Pasadena, Calif., who tied his own world record of 3.1 sec. in the rope climb; Archie Durham, Pasadena City college, long horse; George Wickler, U.S. coast guard, Los Angeles, rings; Frank La Due, State University of Iowa, Iowa City, trampoline, and Philadelphia Turners, team.

The women's division was dominated by Clara Schroth Lomady, Philadelphia Turners, and Meta Elste, Chicago, who was competing unattached. Mrs. Lomady retained her championships in calisthenics, the side horse and parallel bars and again annexed all-around laurels with 220 tallies. Miss Elste defeated Mrs. Lomady in the balance beam event and was runner-up in nearly every other major contest. She finished with 216.6 points in competition for the all-around crown. Barbara Galleher, Dallas A.C., was first in tumbling.

Florida State college, Tallahassee, won team honours for the second straight year in the National Collegiate Athletic associa-

tion meet at Boulder, Colo., March 22-23. The winners scored 89½ points compared with 75 for the University of Southern California, Los Angeles, which placed second. Individual champions follow: John Claybrook, U.S. Military academy, West Point, N.Y., rope climb; Frank Bare, University of Illinois, Urbana, side horse; Charles Simms, University of Southern California, horizontal bar; John Beckner, University of Southern California, parallel bars; Jack Sharp, Florida State, flying rings; Bob Sullivan, University of Illinois, tumbling; and Dick Gutting, Florida State, trampoline. The U.S. Military academy annexed three events in the Eastern intercollegiate individual championships, Penn State winning two tests and Syracuse university, N.Y., and the U.S. Naval academy, Annapolis, Md., one each. Nebraska gymnasts scored a sweep of the individual and team laurels in the fourth annual Rocky Mountain invitation meet. (See also OLYMPIC GAMES.) (T. V. H.)

Gynaecology and Obstetrics. For several years a trend had been developing toward unification of obstetrics and gynaecology into a single specialty. By 1952 with but few occasional exceptions, they had been so united. This contributed to improved standards in diagnosis and treatment, enhanced specialization and improved teaching programs of students, interns and residents.

One condition of the newborn which received continued attention in 1952 was the damage caused by German measles or rubella. This contagious disease produced its greatest damage in the first three or four months of pregnancy. It was most likely

MIDWIFERY CLASS in session on the roof of a clinic in Lahore, Pak., in 1952, as part of a government campaign developed with U.N. aid for expanding training in obstetrics and gynaecology



to cause critical damage to the eyes, ears or brain. Any acute infectious condition might be a hazard to the mother and the unborn baby, but rubella was a special one. Gonococcal infection might infect the newborn's eyes, and since it once was the principal cause of blindness, many states required that a 1% solution of silver nitrate be dropped into the eyes of the newborn. Trials of penicillin were still not accepted by state boards of health as a substitute. It had been argued that the dropping of a solution of 1% silver nitrate into the eyes might affect the eye surface, but this was not proven.

Another cause of concern was the loss of pregnancies before the period of viability (approximately a 28-week pregnancy or older). Usually these occurred within the first three months. The lay term is miscarriage. Scientifically, they were accidental abortions. These spontaneous abortions occurred mostly because of abnormal development of the fetus. Such abnormality occurred because either the male or female factor was imperfect.

Little was known about the prevention of serious anomalies and malformation of the baby, excepting that they occurred less often in the babies of the younger married couples. The risk is slightly greater in women over 35 years of age and greater still after the age of 40. The theory of explanation was based on a deficiency or fault in the ovum or the spermatozoon which fertilized the egg. The infertility problems of 1952 were more definitely crystallized. Normal body health was an important factor. The sensitization factor of erythroblastosis continued as a problem because not one specific prophylactic or therapeutic agent was discovered. On a statistical basis, only a very small percentage of babies born of Rh women who had Rh positive husbands showed sensitization. When these babies were born they were treated with a replacement of blood until their own blood system was able to take over.

The year saw real strides in lay education on the normalcy of confinement. When prospective mothers found that labour was not intolerable and that satisfactory relief could be given, fear vanished. Many women went through labour with little or no sedative. Excessive sedation was not popular. If analgesia (pain relief) was needed, judicious use was the practice. This reduced the danger to the baby. Hypnosis was still unpopular and not especially practical. A combination of drugs for analgesia gave the best result. Methadone, demerol or morphine, combined with scopolamine, ranked in first order in many institutions. Gases (ethylene, cyclopropane and nitrous oxide), ether, and low spinal injections were also used. In some warm or hot localities chloroform was used. Intravenous anaesthetics were not used for short duration procedures. Every year an occasional death results from some type of anaesthetic agent in both spinal and inhalation anaesthetics. Thus, the ideal anaesthetic agent for maternity was still undiscovered.

Special classes became more and more popular with the prospective mother to answer her everyday questions of hospital routines, equipment for the baby, and numerous other points. Classes for fathers continued to be popular. In these the husband obtained facts and corrected misinformation about pregnancy, labour, and care of the mother and baby after delivery.

Early ambulation, getting up early after childbirth, continued to be a worth-while practice. It helped the patients to retain their strength and keep up their good morale, but retention in the hospital for eight to ten days enhanced recovery and convalescence. This practice prevented relaxation of the genital walls.

Rooming-in, which had been tried in some areas, was waning in popularity. It favoured the acquaintanceship of mother and baby, but too often it disturbed the mother's night rest. The psychological and emotional values justified the effort to a reasonable limit. On the other hand, some mothers, after a few

hours or days with the baby, appreciated having it returned to a centralized nursery where they knew that it was under constant supervision.

The science of female disease continued to advance. Venereal disease was a problem in both the pregnant and the nonpregnant, but the rate was low. The routine test for syphilis prior to marriage was a highly desirable public health measure. Gonorrhoeal infections had increased slightly over the previous year or so, but to no major degree. The other venereal diseases, lymphogranuloma venereum, granuloma inguinale and chancroid, were significantly low, but not completely eradicated.

Diagnostic procedures remained an active part of gynaecological practice. These included a thorough bimanual examination as well as a general physical evaluation, because there were certain conditions that could be associated with abnormal pelvic behaviours. For instance, there was a tendency for abnormal menstruation in pulmonary tuberculosis in the age group from adolescence to 25 years. The menstrual alteration was the first symptom in 25% of the group. Sometimes blood conditions predisposed to excessive menstrual periods because of abnormal clotting and bleeding tendency. A severe genital itch might be associated with an uncontrolled diabetes which enhances a genital mycosis. Thus, the gynaecological approach was thoroughly diagnostic. Diagnostic steps were evaluated for the early recognition of genital cancer.

Emphasis was placed upon differential diagnosis in gynaecological practice, particularly with respect to backache and lower abdominal pain, and the proper interpretation. Infections of the pelvis might produce these symptoms but a large percentage of patients who had pain in the lower abdomen were more likely to have it because of other conditions. Backache was commonly caused by vertebral or muscle stress or injury. Thus, the need for accuracy was evident. The counterpart of gynaecological surgery is medical management. This includes the management of painful periods (dysmenorrhoea), both the psychosomatic and organic causes, irregularities of menstruation in young girls, and sterility and infertility. It requires a thorough study of the entire individual, and in sterility it also calls for a careful evaluation of the husband.

Treatment of cancer of the uterus and cervix was in the re-evaluation phase. However, the utilization of X-ray and radium for cervical cancer, and X-ray and radium and surgical removal of uterine cancer, remained the reliable and dependable procedures for these two conditions. The use of radioactive material, such as cobalt, gold or other agents, was investigated. The use of extensive surgery in early lesions of the cervix as well as the uterus received more attention. The role of very extensive surgery and wide resections for advanced pelvic cancer was practised to some degree. This latter procedure was reserved for those cancer cases where the disease was beyond the reach of X-ray and radium.

Hormone therapy continued in the state of further investigation, particularly so for the newer hormones. Thyroid extract remained of proven value in a fair percentage of sterility problems. Estrogens were the dependable agents in the relief of menopausal syndromes (nervousness, irritability, hot flashes). It was the practice generally in the year to give estrogens only after cessation of menstruation, and then only when there were sufficient symptoms to justify the therapy. Premature administration of estrogens tended to prolong the menopausal syndrome.

There was the perennial problem of discovering a better treatment for vaginal trichomoniasis. A specific cure was not found.

The year 1952 was fruitful in scientific progress but it left many avenues in obstetrics and gynaecology unsolved. These included the cause and more specific therapy of endometriosis (abnormal location of the lining of the womb).

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Haiti. Although the Republic of Haiti has about half the area of Hispaniola, it has almost 50% more population. On about 10,748 sq.mi., Haiti's first census (Aug. 7, 1950) disclosed a total of 3,111,973, with 142,840 in the capital, Port-au-Prince, 4,975 in Cap Haïtien, 13,534 in Gonaïves, and 11,835 in Les Cayes. The fertile soil of the western valleys of the island, and the favourable climate make possible a high density of population, particularly since it is more than four-fifths rural. Probably not more than 5% of the population is predominantly of European origin; the rest is predominantly Afro-American. French is the official language. The president in 1952 was Paul E. Magloire.

History.—The foreign and domestic relations of Haiti in 1952 were unruffled. The economic factors were unchanged. World demand for Haiti's principal products showed no decline; most of the sugar, coffee, sisal and hardwoods produced went abroad. The reduction in public debt continued, notwithstanding an expansion in the program of road construction and irrigation of the Artibonite valley.

Price levels slowly rose during 1952, but employment remained high, and aggregate trade appeared likely to exceed any previous year in the century.

The improvement of harbour facilities and inland transportation continued to preoccupy the government. Experts from the staff of the United Nations, as well as others, were being sought to round out technical programs, particularly in the promotion of new industries and the training of students who could be used in administrative and supervisory work of the general program designed to lift the national standard of living.

Several trade missions from European countries visited the republic during the year. In the field of education, important additions were made to the secondary and vocational schools, particularly in the field of agronomy. (C. E. Mc.)

Education.—Haiti in 1949 had about 1,060 primary schools attended by 87,000 pupils, and 6 national *lycées* and 15 private secondary schools attended by about 10,000 pupils. Higher education was available at the national law and medical schools, the Central School of Agriculture and the government-controlled University of Haiti. In the 1950-51 fiscal year 60% of government expenditures were for public education. The 13 motion-picture theatres in 1951 had a seating capacity of 5,150.

Finance.—The monetary unit is the gourde, valued in 1952 at 20 cents U.S. currency, official rate. Actual government expenditure in the fiscal year ended Sept. 30, 1951, was \$24,361,830; revenue was \$25,041,543. The ordinary budget for the fiscal year 1952 balanced expenditure and revenue at \$24,884,750. The capital budget, to finance a five-year plan of economic development, was placed at \$40,000,000. The net public debt was \$6,221,167 on Feb. 28, 1952, almost entirely internal.

Trade and Communications.—Exports in the trade year 1951 (Oct. 1, 1950-Sept. 30, 1951) were \$49,595,647; imports were \$44,507,027. The chief exports were coffee (52%), sisal (24%), sugar (14%), cacao (3%) and rice (2%); leading imports were cotton manufactures (23%), wheat flour (9%), machinery and apparatus (9%) and iron and steel and products (8%). Leading suppliers were the U.S. (73%), Canada (5%), the United Kingdom (5%) and the Netherlands Antilles (3%); leading customers, the U.S. (59%), Belgium (18%), the Netherlands Antilles (7%), Italy (6%) and the Netherlands (6%).

On Jan. 1, 1950, there were about 2,000 mi. of improved roads, of which only about 245 mi. were surfaced. 88 mi. of public railway and 75 mi. of industrial trackage. In 1951 there were 9 short-wave and 2 long-wave broadcasting stations, 3,683 licensed radio sets and at least as many more sets operating without licence.

Agriculture.—Exports of coffee totalled 28,026 short tons in the trade year 1950-51. Other exports included sugar 37,927 short tons; sisal 34,452 short tons; cacao 2,177 short tons; and raw cotton 585 short tons. Exports of essential oils included vetiver 45,598 lb.; lemon grass 195,769 lb.; and oil of lemon 18,400 lb. Livestock (1945) included 200,250 cattle, 13,800 sheep and 1,010,000 goats.

Manufactures.—The only important sugar mill, operated by the Haitian-American Sugar company near Port-au-Prince, produced 62,247 short tons of sugar and 3,027,625 gal. of molasses in 1951. (J. W. Mw.)

Hammer Throw: see TRACK AND FIELD SPORTS.

Handball. The Detroit, Mich., Y.M.C.A. was the host club in 1952 for the annual U.S. national four-wall handball championships. As a consequence of the schism which had occurred the year before, the 1952 tournament was held in March under the auspices of the Amateur Athletic union in conjunction with the Amateur Handball union, which had formed in 1951 in Chicago, Ill. With the opposing factions brought together, all the leading players participated. The results were:

SINGLES

First Victor Hershkovitz, Brooklyn, N.Y.
Second.... Ken Schneider, Chicago, Ill.
Third Robert Brady, San Francisco, Calif.

DOUBLES

First Frank Coyle and William Baier, Chicago, Ill.
Second.... Sam Haber and Pat Cannon, Chicago, Ill.
Third Leo Dressler and Dan Kienlen, Chicago, Ill.

(Fr. Ro.)

Harbours: see RIVERS AND HARBOURS.

Harness Racing: see HORSE RACING.

Harriman, Averell (1891-), U.S. government official, was born on Nov. 15 in New York city. He graduated from Yale university in 1913, two years later became a vice-president of the Union Pacific Railroad company and in 1932 was named chairman of that company's board of directors. During World War I he organized a shipbuilding and operating company, and in 1920 launched W. W. Harriman Co., investment bankers, a firm that became Brown Brothers Harriman & Co. in 1931. He served as administrative officer in the National Recovery administration, and during 1940 and 1941 served with the National Defense Advisory commission and its successor, the Office of Production Management. In 1941 Pres. Franklin D. Roosevelt named him lend-lease expediter to Great Britain and later to the U.S.S.R. He was U.S. ambassador to the U.S.S.R. from Oct. 1943 to Feb. 1946, and he attended every major Allied conference during World War II. On April 1, 1946, Pres. Harry S. Truman named him ambassador to Great Britain, and on Oct. 7, 1946, secretary of commerce. In April 1948 he was named special U.S. representative abroad to supervise the administration of the European Recovery program, and he later became special presidential adviser on foreign affairs. In July 1951 President Truman named him special envoy to Iran, to try to bring about new conferences between Iran and Britain looking toward the settlement of the crisis created by Iran's nationalization of its petroleum industry.

Following Harry S. Truman's withdrawal from the presidential race on March 29, 1952, Harriman immediately became a leading contender for the Democratic nomination and formally announced his candidacy on April 22. At the convention in Chicago in July he received 123½ votes on the first ballot and 121 on the second; he then withdrew and transferred his support to Adlai E. Stevenson.

Harrison, William K., Jr. (1895-), U.S. army officer, was born on Sept. 7 at Washington, D.C. He was graduated from the U.S. Military academy, West Point, N.Y., in 1917 and from the Cavalry school, Fort Riley, Kan., in 1923, advancing subsequently through the grades to the rank of major general. From 1939 to 1942 he served on the army's general staff in Washington, D.C., and in the latter year became assistant commander of the 78th infantry division, later going overseas as assistant commander of the 30th division. Subsequently he was named commander of the U.S. 2nd infantry division in Europe. He arrived in Korea on Jan. 2, 1952, as deputy commander of the 8th army and

three weeks later was appointed a member of the United Nations truce team at Panmunjom. On May 19 he was named chief of the U.N. negotiators by Gen. Mark W. Clark to succeed Vice Adm. Charles T. Joy. The protracted series of meetings and recesses dragged on through the rest of the spring and summer and on Oct. 8 were recessed indefinitely. (See KOREAN WAR.)

Hawaii. The territory of Hawaii consists of a group of eight large islands and numerous islets in the Pacific ocean between latitudes 18° 55' and 22° 15' N. and between 154° 50' and 160° 30' W. longitude. The total area of the group is 6,433 sq.mi. From southeast to northwest, the islands are Hawaii, Kahoolawe, Maui, Lanai, Molokai, Oahu, Kauai and Niihau. In addition, stretching northward beyond Niihau more than 1,100 mi., is an archipelago of rocks, reefs and shoals which includes Midway (longitude 177° 22' W.). Likewise, 960 mi. S. of Honolulu and included as part of the city and county of Honolulu lies Palmyra, a coral atoll consisting of 55 islets, 5 mi. long and 2½ mi. wide. The largest island in the territory is Hawaii, with an area of 4,021 sq.mi. The capital of the territory is Honolulu, situated on the island of Oahu. Honolulu is a modern city with a population of 232,553 as of July 1, 1952.

The population of the entire territory was 465,325, as of July 1, 1952, exclusive of military and naval personnel. The population of the territory is cosmopolitan, the Japanese and Caucasian groups being the largest. Other groups include native Hawaiians and part Hawaiians, Chinese, Filipinos, Koreans, Puerto Ricans and Samoans.

History.—The Hawaiian Islands has been a territory of the United States since 1900. Since that date the territory has repeatedly sought to become a state. A statehood bill was shelved by the second session of the 82nd congress of the United States during 1952.

On April 1, 1952, a bill of the 82nd congress was approved permitting women to serve on juries in the territory.

Gov. Oren E. Long, who began the second year of his term in May 1952, was appointed for four years by Pres. Harry S. Truman. Joseph R. Farrington filled the office of Hawaii's delegate to the United States congress in 1952. The delegate is elected every two years.

Education.—During the school year 1951-52 there were 194 public and 106 private schools, including kindergartens and schools through the 12th grade. Of the 121,638 students enrolled in the 12th grade and below, 97,240 attended public schools. The number of teachers in the public schools was 3,952, and in the private schools, 1,122.

The public schools of the territory below university level are all under the department of public instruction. The sum of \$12,895,450 was appropriated by the territory for public instruction for 1951-52.

There were 3 prisons and 3 reformatories, 1951-52. The average number of inmates of the prisons was 582; reformatories, 180. Expenditures were \$856,241 for the former and \$599,837 for the latter.

Public Assistance.—The following table shows the average number of persons assisted monthly and the expenditures during the fiscal year 1951-52 by the department of public welfare of the territory, excluding administrative costs:

Type of assistance	Average number of persons assisted monthly during fiscal year 1951-52	Expenditures for fiscal year 1951-52
Old age	2,255	\$ 894,603.69
Blind	114	53,334.11
Dependent children and their parents	12,623	3,169,088.97
Children under foster care	1,082	496,530.33
Disabled persons	1,140	535,654.10
General assistance	2,001	1,320,799.33
Total public welfare expenditures		\$6,470,010.53

Unemployment benefit payments totalled \$1,970,836 during the fiscal year 1951-52; total claims amounted to 161,384, a decrease of 5.1% from the previous year when the total was 170,017.

Transportation and Communications.—There were 155,605 motor vehicles in the territory, Dec. 31, 1951. Public roads including both rural and urban paved highways and streets approximated 2,180 mi.

During the fiscal year 1951, 941 overseas vessels arrived and departed from Honolulu harbour. Overseas incoming freight was 2,338,093 tons; overseas outgoing freight, 660,671 tons.

Sixteen airports were in operation during 1952.

On Dec. 31, 1951, 109,329 telephones were in use in the territory. Of the 12 commercial radio stations in the territory, 6 were in operation in Honolulu.

Banking and Finance.—In 1951 bank clearings amounted to \$2,081,698.82. Forty-four banks, including branches, were in operation in the territory. Combined deposits totalled \$376,329,868.97, while assets totalled \$411,938,043.43. Territorial government cost payments for the fiscal year 1951-52 amounted to \$75,889,017.22; the bonded indebtedness of the territory was \$42,800,000.

The net assessed valuation of real property was \$630,491,607 for the calendar year 1952; the average rate of real property tax was \$18.00. For the fiscal year 1951-52 total collections by the territorial tax office were \$76,683,076. Federal internal revenue collections amounted to \$13,608,839.73, an increase of \$3,697,801.58 over that of the previous year.

Production.—Sugar is Hawaii's principal industry and the value of 995,759 tons produced in 1951 was approximately \$136,052,000. About 221,210 ac. of land were utilized for sugar cane production. Pineapples were grown on 73,600 ac. of land to produce a pack of 26,075,606 cases of fruit and juice which was valued at \$100,000,000. The coffee crop in 1951-52 was approximately 6,000,000 lb. valued at \$2,800,000. The catch of fish totalled 19,219,884 lb. valued at \$3,963,614.09. The value of other fruits, vegetables and miscellaneous crops was approximately \$10,400,000, while the value of livestock, poultry and bee products was \$24,700,000. (O. E. L.)

Mineral Production.—Hawaii has little in the way of mineral production outside of building materials. In 1949 the output included 8,404 short tons of lime (\$226,926), 653,890 tons of stone (\$718,705), and other nonmetallics valued at \$42,896; total value \$988,457. In 1950 lime production was 8,141 tons (\$219,861) and stone 696,310 tons (\$1,544,966); total value \$1,774,767. Data for 1951 were not yet available.

Hay. The U.S. hay crop of 1952 consisted of 103,858,000 tons of all hays, slightly above the 101,072,000-ton average for 1941-50, but about 5% smaller than the record crop of 1951. The 75,400,000 ac. of hay meadow was about average and 1% above 1951, but the yield was 1.38 tons per acre, compared with 1.45 tons in 1951 and a 1.36-ton average for 1941-50. Wisconsin was the leading producer with 8,883,000 tons, followed by Iowa, Minnesota and Nebraska.

Alfalfa hay acreage increased to 19,075,000 compared with an average of 15,562,000 ac. for the previous decade. The yield of 2.2 tons per acre was less than the 2.26 tons of 1951. The crop amounted to 42,040,000 tons, whereas 1951 gave 42,937,000 tons. Wisconsin was the leading alfalfa hay state, closely followed by California and Minnesota. About one-third of the hay crop was clover and timothy. Wild hay constituted fully 10% of the total. Lespedeza, mostly produced in the southern drought area, was 5,895,000 tons, compared with 7,479,000 tons in 1951.

Hay prices averaged \$25 per ton to farmers in September, nearly \$4 more per ton than a year earlier. Prices, ranging between \$28 and \$36 per ton for specific kinds of hay were declared to be fair prices for hay in the deficit drought areas. Beyond those amounts the government would subsidize the cost.

Hay and Pasture Seeds.—Production in 1952 of 23 legume and grass seeds was indicated at 596,000,000 lb., 21% higher than in 1951 and 4% more than the average for 1941-50. Clover seed production (152,000,000 lb.) was about average, but 10% less than in 1951. Carryover stocks of old seed were above average, but one-eighth below 1951. (J. K. R.)

Hayden, Carl (Trumbull) (1877-), U.S. senator. He was born on Oct. 2 at Hayden's Ferry (later renamed Tempe), Ariz. He graduated from the Normal School of Arizona at Tempe and later attended Stanford university, Stanford, Calif. (1896-1900). After occupying various local and county offices in Arizona, he was elected to the U.S. house of representatives upon admission of Arizona to the union, serving consecutively from 1912 to 1927 as congressman at large from his state. He was elected U.S. senator from Arizona on the Democratic ticket in 1926 for the term 1927-33 and was re-elected four times, the last time in 1950 for the term 1951-57. In the senate he became known for his advocacy of federal aid to highways and irrigation projects, and he generally supported the administration policies of Franklin D. Roosevelt and Harry S. Truman. Hayden also became known for his taciturnity as a senator, having made only three speeches in the senate during

his quarter-century of tenure of office up to 1952.

Health, Industrial: see INDUSTRIAL HEALTH.

Hearing. In 1952 there were millions of people in the United States with some degree of hearing impairment, but it was impossible to estimate accurately the number with significant disability. It was estimated that there were about 100,000 individuals who were totally deaf, of whom about 51.3% were males and 48.7% were females. Negroes constituted only about 7.4% of the deaf population, with whites comprising 91.4%.

The fact that Negroes constituted 9.7% of the general population and whites 88.77% indicated that there was relatively less deafness among Negroes than in the white population.

It was thought that there were in 1952 between 3,000,000 and 5,000,000 school children with significant hearing disability. Various surveys revealed that in every schoolroom there were from two to five children with hearing loss. In 1950-51 there were 75 public residential schools for the deaf which had a total enrolment of 13,795. Of this number, 7,464 were males and 6,331 were females. The total number of educational staff members in these schools was 2,209. The number of public day schools for the deaf was 178, with a total enrolment of 5,884. Males numbered 3,141 and females 2,743. The educational staffs included 714 persons. There were 48 denominational and private schools for the deaf with a total enrolment of 1,802 and staffs numbering 346.

Many states, counties and cities had instituted testing programs in the schools. The Committee on the Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology suggested two types of testing. The first advocated the testing of each school child every third year. These tests were given in the primary, third, sixth and ninth grades. In addition, tests were given to children from other grades who were being given otological treatment, or whose previous tests showed borderline hearing impairment.

Additional tests were administered to children with speech defects, and to those whose teachers suspected hearing losses since the last examination.

Another method consisted of testing each pupil in all grades every three years.

Testing the hearing of the preschool child is a very important but extremely difficult task. Testing with the pure tone audiometer, standard for adults, is not appropriate for the preschool child. It requires a subjective response concerning the sounds he hears. He may, however, be taught to respond to noisemakers of various pitch and loudness levels.

Another method of testing his hearing is the development of the conditioned reflex which records changes in skin resistance, following mild electric shock. A sound is presented followed a few seconds later by an electric shock. The child is conditioned to develop skin resistance changes, in response to the sound, in anticipation of the coming shock. When he begins to respond with regularity to the sound, its loudness is reduced until the threshold is reached.

Psychogalvanic skin response audiometry, to be successful, must be administered by a thoroughly trained and experienced testing team. The interpretation of the results of such tests must be read by trained and experienced clinicians. This test was still in the early stages of development and had to undergo more investigation clinically and experimentally before it could be placed in general use.

The Committee on the Conservation of Hearing had been doing a great deal of work in the field of industry, endeavouring to determine the incidence and prevention of "occupational deaf-



OUTPATIENT WORK in the Clinic and Research centre opened in 1952 as part of the Central Institute for the Deaf in St. Louis, Mo. A child was being given speech lessons as his mother watched and learned how to continue the work at home (in foreground are student teachers observing)

ness." There was general acceptance of the fact that high-level noise to which human ears are exposed for certain lengths of time can produce a loss of hearing acuity. This phenomenon is encountered for the most part in the field of general industry, and is a problem of such stature as to affect a great many people.

The following three aspects of the problem were receiving attention: (1) the determination of onset and rate of progression in hearing loss resulting from industrial noise; (2) the study of the characteristics of efficient ear protectors; (3) the detection of the individual who is hypersusceptible to noise-induced hearing loss.

A great deal had been done in the past few years to aid patients with otosclerosis. The fenestration operation had completely rehabilitated great numbers of those whose hearing loss was caused by clinical otosclerosis. The operation had developed into a delicate procedure to create a new window through which sound passes from the outer ear to the hearing nerve. Until the operation became a safe, practical and effective technique, medical science had no successful treatment for this type of hearing loss, and could only prescribe a hearing aid.

In most cases the patient's hearing improved to a level of practical serviceability after a fenestration operation, making a hearing aid unnecessary. In a few cases the hearing returned to the preoperative level, and in others hearing retrogressed according to the ravages of age on the ear tissues, and the natural, predestinate degeneration of the hearing nerve.

It had been learned that individuals with impairments resulting from pathology of the middle ear usually obtain excellent results with hearing aids. Some individuals with cochlear pathology and many with neural pathology also obtain gratifying results. (See also EAR, NOSE AND THROAT, DISEASES OF.)

(D. LE.)



TEAM OF DOCTORS, social worker and job analyst discussing a cardiac case at the Work Classification clinic of the Cleveland Area Heart society in 1952. The clinic helped to return patients to work that was safe for them, without total loss of their work experience to employers

Heart and Heart Diseases. In the fall of 1952, the Fourth Inter-American Cardiology congress was held in Buenos Aires, Arg. There were 319 papers presented, many of them showing the active research taking place in Latin America. Cardiac conditions peculiar to these countries were extensively studied, such as the effects of Chagas disease in Brazil and of living at high altitudes in the Andes, as well as the fundamental mechanisms of atherosclerosis and hypertension. The first congress of the European Society of Cardiology was held in London.

In the United States, from 1920 to 1947 the death rate of white males from cardiovascular disease in the age period from 35 to 65 years had approximately doubled, while that of the white female had declined. This unexplained rise in the death rate of the male at the most productive age raised serious economic and social questions.

Basic research in the fields of biochemistry, nutrition and pathology contributed to cardiovascular knowledge, as in the report of the vitamin factors necessary for the utilization of foodstuffs by the heart—niacin, folic acid, pantothenic acid, biotin and pyridoxine.

The relief of sufferers from cyanotic congenital heart disease by surgery began to show interesting results, such as the ability of women so treated to bear normal children, even after they had had congenitally deformed children from pregnancies occurring when they were cyanotic prior to operation.

R. C. Brock of London, Eng., reported an impressive series of 240 operations for congenital pulmonic stenosis, and repair of interauricular septal defects was successfully accomplished by a new technique.

Rheumatic heart disease became related once more to an allergic status by the finding of analogous leucocyte-platelet thrombi in the small blood vessels in active rheumatic fever, similar to those in the skin lesions in the Arthus and Schwartzman phenomena.

The influence of the steroid hormones on the rheumatic state

was intensively investigated. Some reports indicated that they were no more valuable than salicylates, and it was also suggested that the salicylates work through the pituitary adrenal mechanism.

Surgical opening of the stenosed mitral valve of chronic rheumatic heart disease became widely employed throughout the world with improved mortality figures, as well as less danger from operative embolism by such procedures as allowing free bleeding from the auricle and intermittent occlusion of the circulation to the brain during manipulation of the auricle and mitral valve.

Hypertension was studied in many centres throughout the world. The major therapy was medical, with such drugs as protervatrine, hexamethonium, pentamethonium, 1-hydrazinophthalazine and Rauwolfia Serpentina.

Coronary artery disease, the most common manifestation of atherosclerosis, was investigated with increasing vigour. Previous observations on the ability of heparin to clear the milkiness of blood plasma occurring after a fat meal led to the therapeutic use of this substance in patients with angina pectoris with inconsistent results. However, it was shown that it takes part in the complex action of a "tissue factor," which acting with heparin produces a "clearing factor," which in turn acts with a coprotein to reduce the turbidity of plasma and the concentration of the special lipoproteins considered significant in the production of atherosclerosis. It was of interest to note that the rat, the animal notably free from atheroma, was the most responsive of experimental animals in the ability to produce this "clearing factor" with heparin.

Emphasis remained on abnormal fat metabolism as the cause of human atherosclerosis, although the significance of ingestion versus synthesis of fats remained unsolved. A. Keys and his co-workers in a study in Italy added more information about the influence of diet. In several groups surveyed in the United States, England and Denmark it had been shown that in 1949 fat in the diet supplied 38%, 32% and 34% of calories, respectively, and that serum cholesterol rose steadily with age. In Naples, where fat furnished only 20% of total calories, the serum cholesterol in a group of normal men rose with age to

a level in the 30s comparable with that in the previous groups, but thereafter remained at the same height and did not reach the levels characteristic of those in the age periods of greatest incidence of coronary disease in the other countries mentioned. Italy was said to be relatively freer of coronary disease.

Another contribution of importance was the observation in chickens that estrogens had a protective influence against coronary atherosclerosis produced by high cholesterol feedings.

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Helicopter: see AIRCRAFT MANUFACTURE; AVIATION, MILITARY; CIVIL AERONAUTICS ADMINISTRATION.

Highways: see ROADS AND HIGHWAYS.

Hispaniola: see DOMINICAN REPUBLIC; HAITI.

Hobby, Oveta Culp (1905-), U.S. lawyer and newspaper executive, was born on Jan. 19 in Killeen, Tex. She was a graduate of the University of Texas law school, a member of the Texas legislature, assistant city attorney of Houston and a bank director. She helped codify Texas banking laws and was the author of a text on parliamentary law. In 1931 she married William Pettus Hobby, former governor of Texas, and took an active interest in his newspaper, the *Houston Post*, becoming executive vice-president.

She was called to Washington, D.C., on a dollar-a-year job as chief of the women's interests section of the war department's public relations bureau (1941), drafted plans for a women's army and on May 16, 1942, was sworn in as director of the first force of this kind in U.S. history, with a rank equivalent to that of major. In July 1943, the women's army corps (WAC) became an integral part of the army. Mrs. Hobby, as colonel, continued in command.

She resigned her army commission in 1945 and returned to her position as director and executive vice-president with the *Houston Post*. On Nov. 25 she was selected as administrator of the Federal Security agency by President-elect Dwight D. Eisenhower.

Hockey, Field. The sport showed a distinct gain in popularity among United States women in 1952, a number of schools and colleges adding the game to their extra-curricular programs. Gains also were made by club teams, with the Pacific southwest and midwest groups leading in the upswing reported by the U.S. Field Hockey association. The outstanding contest of the year among feminine competitors took place at the Wembley stadium in London on March 8, when an English team turned back Scotland 9-2, before 45,000 spectators. Stadium officials said it was a world record attendance for field hockey.

India continued its domination of men's competition and captured its fifth straight Olympic games championship by routing a team representing the Netherlands, 6-1, in the final round at Helsinki, Fin. Great Britain beat Pakistan 2-1, in a hard-fought battle for third place in the standings. The U.S. was not represented in the Olympic contests. (T. V. H.)

Hockey, Ice Detroit's Red Wings, after winning the 1952 championship of the National Hockey league in easy fashion, set a blistering pace to capture eight straight play-offs and annex the Stanley cup, symbol of world supremacy. The Wings yielded only three goals in all as they eliminated Toronto, the cup defenders, in the semifinal round, 3-0, 1-0, 6-2 and 3-1. Meanwhile, the Montreal Canadiens and the Boston Bruins were locked in a torrid semifinal series, which went to a seventh game before Montreal won the right to battle the Wings in the ultimate round.

In the Stanley cup play, Detroit triumphed in the opening cup battle, 3-1, as Tony Leswick scored twice and Ted Lindsay once, and annexed the second contest, 2-1, on a tie-breaking shot by Lindsay. Goalie Terry Sawchuk was at his best in the third engagement and the Wings triumphed by 3-0, Gordie Howe counting twice and Lindsay once. Detroit then became the first team in history to win eight straight games in a Stanley cup series when they shut out the Canadiens, 3-0, to take the trophy. Sawchuk equalled the Stanley cup record with his fourth shut-out of the series. Metro Prystai tallied two goals and Glen Skov one to bring victory to the Wings.

Gordie Howe, with 86 points, tied his own National league record to lead that circuit in scoring for the second straight year and to win the Hart trophy as the most valuable player for the 1951-52 campaign. Sid Smith of Toronto received the Lady Byng Memorial trophy for good sportsmanship combined with playing ability. Sawchuk captured the Vezina trophy as the goalie allowing the fewest goals and Bernie Geoffrion of Montreal won the Calder trophy as the season's outstanding rookie.

The annual game between the first and second All Star teams, played at Detroit's Olympia, resulted in a 1-1 tie, with Maurice Richard of Montreal and Marty Pavelich of Detroit accounting for the tallies.

The Pittsburgh (Pa.) Hornets won laurels in the American league and the Saskatoon Quakers finished first in the Pacific Coast league. The Johnstown (Pa.) Jets were double title winners, triumphing in the senior division of the Amateur Hockey association of the United States and the Eastern league, while

OLYMPIC HOCKEY MATCH between the Canadian and Czechoslovak teams, played at Oslo, Nor., in Feb. 1952. Goalie Ralph Hansch of the Canadian team (right foreground) is shown trying to block the puck



the Toledo (O.) Mercurys carried off the International league championship. The Hibbing (Minn.) sextet took national Amateur Athletic union laurels and Canada came through on top in the world amateur tourney.

England won the Churchill cup at Wembley, Eng., by defeating Canada and the United States in triangular competition among Olympic teams of those three countries.

The University of Michigan retained its title in the National Collegiate Athletic association contests at Colorado Springs, Colo., by defeating Colorado college, 4-1, in the final round. Yale set back St. Lawrence, 4-1, in a battle between the beaten semifinalists for third place in the tournament. (T. V. H.)

Hoffman, Paul Gray (1891-), president of the Ford foundation, was born on April 26 in Chicago, Ill., and studied at The University of Chicago. In 1911 he became a salesman for a Studebaker dealer in Los Angeles, Calif., and later was sales manager and then district branch manager for Studebaker in that city. After serving in World War I he purchased the Studebaker retail branch in Los Angeles, and in 1925 he went to South Bend, Ind., as vice-president of the Studebaker company. In 1933 he and Harold Vance, another vice-president, as receivers successfully reorganized the company and Hoffman served as Studebaker president from 1935 to 1948. He was an organizer of the Committee for Economic Development and chairman of its board of trustees from 1942 to 1948. On April 5, 1948, Pres. Harry S. Truman appointed Hoffman administrator of the Economic Cooperation administration. He supervised the European Recovery program (ERP) until his resignation on Sept. 30, 1950.

His book, *Peace Can Be Won*, inspired by his experience as ECA administrator and the success of the recovery program, expressed his conviction that the U.S. could defeat communism by waging the peace on the military, economic, political and informational fronts.

The appointment of Hoffman as president of the Ford foundation, the largest public trust in the world, was announced on Nov. 6, 1950, and became effective on Jan. 1, 1951. He was enabled to continue his efforts for peace in his new post, since the foundation planned to concentrate initially on activities directed toward its primary objective, world peace.

One of the earliest supporters of Dwight D. Eisenhower for the Republican presidential nomination, Hoffman devoted much of his time in 1952 prior to the Chicago convention advancing the general's candidacy.

Hogs: see LIVESTOCK.

Holland: see NETHERLANDS.

Home Building, Federal: see HOUSING.

Home Economics. Membership in the American Home Economics association in 1952 included 19,643 professional memberships, 432 college clubs, 72 home-maker groups and 3 affiliated foreign associations.

During the year the association conducted a special American Home Economics association project in family life education supported by funds from the Grant Foundation, Inc.

The association granted two fellowships for graduate study and eight fellowships and scholarships to assist students from abroad to study home economics at United States colleges and universities. The association also co-operated in orientation programs for visitors from abroad.

Plans were made for participation in the eighth International Congress of Home Economics to be held in Edinburgh, Scot., Aug. 12 to 18, 1953.

Bureau of Human Nutrition and Home Economics.—Be-

cause diets are frequently low in calcium, the bureau analyzed 402 commercial white bread samples from 41 states to learn calcium content, and found a wide variation. An individual eating the city dweller's average amount of baker's white bread—1.44 lb. a week—could get as little as 1% of his recommended calcium allowance from bread or as much as 16%.

In experiments with rats the bureau sought information as to whether diet deficiencies worked greater hardship on one sex than on the other. Protein deficiency caused greater retardation in growth of young male rats than of female. However, when young rats received diets adequate in all respects, male rats gained more rapidly than female.

Six expansible farmhouse plans were designed by the bureau in co-operation with the bureau of plant industry, soils and agricultural engineering, to show relatively low-cost ways of building a basic living unit to which bedrooms might be added as the family grew or the budget permitted.

A *Food Guide for Older Folks* was issued as a much-requested addition to the series in which the bureau endeavored to apply the latest nutrition knowledge to everyday food management at different stages of the family life cycle.

Experiment Stations.—Research in home economics in the land-grant colleges is largely conducted as part of the research programs of the agricultural experiment stations established in connection with the colleges. These researches are supported in part by state and special funds and in part by federal grants administered through the office of experiment stations of the U.S. department of agriculture. During 1952 investigations were continued in the fields of family economics, family relationships, foods and nutrition, housing, home management, textiles and clothing and certain aspects of marketing.

Some of these investigations were fundamental in character others were applied. Certain researches concerned with farm housing problems and with consumption and nutritional status of selected population groups were conducted on the regional co-operative basis made possible through provisions of the Research and Marketing act of 1946.

Home Economics Extension Service.—More than 1,600,000 women reported that they had improved their families' diets by better selection, preparation and preservation of food through participation in the home demonstration program of their counties.

In addition, 13,400 schools were assisted in establishing and maintaining hot-lunch programs. About 300,000 families received help on housing improvements. About 287,000 women and 45,000 men participated in child development and family relations programs. Through 4-H club programs the service reached 1,000,000 girls. Approximately 3,400 white and 400 Negro home economists directed these county and community programs, with help from 600,000 volunteer local leaders.

Land Grant Colleges.—The home economics division in the Association of Land Grant Colleges and Universities directed its efforts during 1952 to the co-ordination of programs of resident instruction, extension and research. The resident instruction section was concerned with problems of enrolment, quality of instruction at the college level and counselling students in personal and professional development.

The extension section directed its efforts to the need of sensitizing farm women to their obligations as producers of food for the world. The research section was interested in promoting research that would improve the family and family life, in stating out areas of research in which home economics should assume leadership and in preparing these analyses in printed form.

Public Schools and Colleges.—Total enrolment in home economics in junior and senior high schools remained at about 1,750,000, with an increase in the number of classes in which

boys and girls together considered homemaking and family living problems. Adult enrolments in homemaking education classes continued high as homemakers sought help with meeting the high cost of living.

An increase of more than 10% in membership in the Future Homemakers of America and New Homemakers of America, national organizations of high school home economics students, brought the total number of members to 390,046 in 9,395 local chapters. National meetings of both organizations emphasized leadership training with special attention given to getting more member participation in decisions of the national organization.

Focusing homemaking teaching on the needs and problems of families was emphasized in home economics education at both the public school and college level during 1952. State curriculum planning groups made up of supervisors and teachers of homemaking worked on ways of making classroom activities, guided home experiences, and work of the Future and New Homemakers of America all contribute to better family living.

There were approximately 80,000 students enrolled in home economics at the college level with about 8,500 receiving bachelor's degrees during the year. A total of approximately 1,000 master's degrees and 90 doctor's degrees in home economics and home economics education were granted.

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Home Rule, City: see MUNICIPAL GOVERNMENT.

Honduras. A republic of Central America, Honduras is bounded by Guatemala, El Salvador and Nicaragua. Area: 59,160 sq.mi. Pop. (1950 census of the Americas): 1,505,405, including approximately 35,000 tribal Indians. Capital: Tegucigalpa (pop. 62,263 in 1949). Other principal cities are San Pedro Sula (24,425), Comayagua (16,907), La Ceiba (13,456), Tela (11,544) and Puerto Cortés (8,837). Language: Spanish. Religion: predominantly Roman Catholic. President in 1952: Juan Manuel Gálvez.

History.—The political scene was relatively quiet in 1952. A \$10,000,000 bond issue for highway construction was approved by the congress in May. On June 1 it was announced that U.S. nationals travelling in Honduras would no longer be required to carry passports. Representatives of Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua met at Tegucigalpa on Aug. 23 to discuss ways and means of developing agricultural and industrial production, improving transportation and integrating the economies of the Central American republics. (G. I. B.)

Education.—In 1951 there were 2,061 primary schools with 106,438 pupils enrolled, 21 secondary schools with 1,107 students, 24 normal schools with 1,746 students and 14 commercial schools with 2,386 students. The National university at Tegucigalpa had 796 students in 5 faculties. The 1952-53 budget allocated 4,533,647 lempiras for education.

Finance.—The monetary unit is the lempira, officially valued at 49.5 cents U.S. currency in 1952. Governmental expenditures in the fiscal year 1950-51 totalled 35,220,982 lempiras; net revenue was 40,005,264 lempiras. The 1952-53 budget balanced revenue and expenditure at 34,509,434 lempiras. The internal debt amounted to 8,281,549 lempiras on June 30, 1951, of which 7,584,927 lempiras represented the floating debt. The external debt was 723,875 lempiras. Money in circulation on July 31, 1952 included 26,510,000 lempiras in Honduran notes and coin and \$1,227,775 in U.S. coin. The cost-of-living index (Tegucigalpa) stood at 133 on Aug. 31, 1952 (1948=100).

Trade and Communications.—Exports during the fiscal year 1950-51 amounted to 56,128,578 lempiras, which figure was unadjusted for banana undervaluation estimated at 101,400,000 lempiras by the International Monetary fund. Imports were valued at 78,895,337 lempiras. Chief exports were bananas (29%), coffee (21%) and pine lumber (9%). Chief customers were the U.S. (72%), El Salvador (13%), Cuba (5%) and Canada (3%); leading suppliers, the U.S. (74%), El Salvador (5%), the Netherlands Antilles (4%) and Mexico (3%).

In 1947 there were 922 mi. of railroad, confined to the northern banana area, 1,201 mi. of highway and 63 airfields. Motor vehicles on Jan. 1, 1951, included 1,733 cars and 1,583 trucks. There were 6 broadcasting stations and about 16,500 radio sets in 1950. On June 30, 1951, 152 vessels (100 tons and over) aggregating 508,172 gross tons were registered under the Honduran flag.

Agriculture.—Coffee production in the 1950-51 season totalled about 27,000,000 lb. Banana exports in the 1950-51 fiscal year totalled 12,727,926 stems, of which 11,029,034 stems went to the U.S., 1,547,000 to Canada and 151,692 to the Netherlands. Other exports in 1950-51 were coffee, 14,893,282 lb., and coconuts, 8,847,557 nuts. Forest exports included 1,784,722 bd.ft. of mahogany lumber and logs and 41,091,633 bd.ft. of pine.

Minerals.—In the fiscal year 1950-51, 31,137 troy ounces of gold amalgam and bars and 2,814,006 oz. of silver amalgam and bars were exported. (J. W. Mw.)

Honduras, British: see BRITISH HONDURAS.

Honey: see SUGAR.

Hong Kong. This British colony on the southeast coast of China consists of Hong Kong Island and the ceded territory of Kowloon and Stonecutter's Island. The New Territories (the rest of Kowloon peninsula and numerous islands) were leased from China in 1898 for 99 years. Area: colony 35.5 sq.mi., New Territories 355 sq.mi. Pop.: (1931 census) 849,751; (1951 est.) 2,013,000. Language: Chinese (Cantonese); about 5% speak English. Cities: Victoria (cap.; pop. c. 438,000); Kowloon (pop. 1931, 264,675). Governor in 1952: Sir Alexander Grantham.

History.—Hong Kong's trade fell month by month in the first half of 1952 to about 50% of the peak figure of March 1951. An upswing began in July, coinciding with the end of the Chinese government's campaign against the so-called "five evils" of private industrialists and merchants, and the efforts by that government to restore life to the country's industry and commerce. Another difficulty had been the U.S. customs' detention of consignments of local handicrafts on suspicion that they were made from materials from the Chinese mainland. In June Hong Kong's trade figures were the lowest since April 1950 and were nearly 38% below the 1951 monthly figure; but in July there was an increase of nearly 18% over June. The colony's trade with China, which fell from \$ 155,000,000 (Hong Kong dollars) in Aug. 1951 to \$ 68,000,000 in March 1952, recovered to \$ 123,000,000 in July. Up to the end of August total imports into Hong Kong were \$ 2,441,000,000 and exports \$ 1,800,000,000.

Following the judgment of the judicial committee of the privy council in favour of the U.S. air line Civil Air Transport, Inc., 40 of the aircraft grounded at Kaitak airport were handed over to that corporation. Chinese Communist caretakers, who had been permitted to take charge of them following the judgment of the local courts (set aside on appeal), staged a sit-down demonstration when the aircraft were removed. The remaining 31 aircraft, still the subject of litigation in the local courts, remained under control of the authorities.



CONTRABAND SHIPMENT of diesel oil and iron plates confiscated by British harbour police in Hong Kong. Junks were searched regularly for strategic materials being smuggled to Communist China in 1952

A special committee was set up to report to the government on the needs of technical and vocational education; another sent to the government its recommendations on additional higher-educational facilities, involving considerable expansion, including the provision of degree courses through the Chinese medium at Hong Kong university.

Education.—Registered schools (1952) 1,039; pupils c. 200,000. University of Hong Kong: students (1951-52) c. 700.

Finance and Trade.—Monetary unit: Hong Kong dollar, valued in 1952 at 17.5 cents U.S. Budget, 1951 (in Hong Kong dollars): revenue \$291,326,400, expenditure \$228,404,796. Estimated budget, 1952: revenue \$285,162,200, expenditure \$286,000,000. Foreign trade, 1951: imports \$4,892,000,000, including from China \$863,000,000, Macao \$103,600,000; exports \$4,460,000,000, including to China \$1,603,900,000, Macao \$228,350,000. (W. V. PL.)

Hormones: see CHEMOTHERAPY; CORTISONE, HYDROCORTISONE AND CORTICOTROPIN; ENDOCRINOLOGY.

Horse Racing. Hill Gail, three-year-old colt from Mrs. Warren Wright's Calumet farm, raced to a two-length victory in the Kentucky Derby at Louisville, Ky., on May 3, 1952, to earn \$96,300 of the gross purse of \$124,350. Following his score in the Santa Anita Derby in February, when he won \$92,900, Hill Gail was made favourite by the crowd of more than 100,000 that jammed Churchill Downs for the 78th running of the blue ribbon event of the U.S. turf. With Eddie Arcaro up, he led most of the way to defeat Sub Fleet, with Blue Man a distant third in the field of 16. The winner returned \$4.20, \$4.00 and \$3.20.

An ailing leg kept Hill Gail out of the Preakness Stakes at Pimlico in Baltimore, Md., on May 17 and that \$113,270 test was captured by Blue Man, owned by Arthur W. Abbott of Rye, N.Y. Ridden by Conn McCreary, the colt, after coming from

last place in a field of ten, added \$86,135 to the money he had earned since being bought for \$10,000 in January 1951. Blue Man returned \$5.20, \$3.40 and \$2.60.

One Count, with Arcaro riding, scored a surprise in the '84th and richest Belmont Stakes at Belmont park, L.I., June 7. The winner gained \$82,400 of the \$118,500 purse for Mrs. Walter M. Jeffords' stable. One Count, which paid bettors \$27.60, \$4.60 and \$2.80, finished with two and one-half lengths to spare over Blue Man, while Armageddon from the Cain Hoy stable was third. One Count added to his earnings with victories in the Jockey Club Gold Cup race at Belmont, Oct. 4, and the Empire Gold Cup race at Jamaica, Oct. 25. Dave Gorman was aboard the winner on both occasions.

Arcaro reached a new riding mark on Sept. 24 when he booted in the Calumet farm's Mark-Ye-Well in the Lawrence Realization at Belmont, being the first jockey to ride horses winning \$2,000,000 in a single year. Two other victorious rides and a fourth position the same day brought the total purses of his mounts to \$2,023,896.

The Arlington Classic on July 19 grossed \$150,450, making it the richest race ever held for three-year-olds, and again Arcaro was first with Mark-Ye-Well. The victor earned \$105,375 and it was the 26th stakes score of 1952 for Arcaro, tying Eddie's own record for the most stakes victories in one year. Mark-Ye-Well and Arcaro returned to Chicago on Aug. 9 and combined to annex the top purse of \$103,325 in the 42nd running of the American Derby at Washington park. Sub Fleet was second.

Crafty Admiral from the Charfran stable carried off the winning purse of \$119,900 in the Washington Park Handicap as the King Ranch's To Market finished two lengths behind. Crafty Admiral, with Arcaro up, also took the Whirlaway Handicap at Washington park, while Mr. Paradise, owned by Mrs. Ada L. Rice of Chicago, was first in the Washington Park Futurity when he was ridden by Arcaro. To Market from the King Ranch ran away with the Arlington Handicap on July 26, finishing ten lengths ahead of Oil Capitol. Calumet Farm's Two Lea triumphed in the \$137,100 Hollywood Gold Cup classic at Inglewood, Calif., July 12, beating Cyclotron by half a length.

Native Dancer stood out among the two-year-olds in a year that saw attendance and betting totals swing sharply upward at most tracks. Alfred Gwynne Vanderbilt retired the colt late in October after Native Dancer had won nine straight races, bringing his earnings to \$230,495 to surpass the juvenile record of \$219,000 set by Top Flight. One of the colt's outstanding victories came in the \$107,545 Futurity at Belmont park Sept. 27 when he equalled the world mark for six and one-half furlongs over a straight course, being clocked in 1 min. 14.4 sec.

Tony DeSpirito, an apprentice from Lawrence, Mass., was well ahead in the competition for most winners piloted in one year. DeSpirito went into November with a total of 316.

Trotting and pacing continued to grow in popularity, with attendance and betting figures soaring. William H. Cane's Good Time, the record money winner of harness racing, was retired in October after bringing his earnings for five years to \$318,792.86. Sharp Note, owned by C. W. Clark of Dearborn, Mich., triumphed in the 27th Hambletonian Stakes at Goshen, N.Y., Aug. 7. Driven by 74-year-old Bi Shively, Sharp Note finished tenth, then trotted two winning heats to annex \$47,236.64, victor's share of the \$87,637.55 purse. Hit Song, driven by H. Pownall, was runner-up with a first, third and second. Sharp Note later clinched the three-year-old trotting title for 1952 by taking the Kentucky Futurity at Lexington, Ky., Oct. 2, sending his 1952 earnings to \$101,175.70, a record for one year. Pronto Don of the Hayes Fair Acres stable, DuQuoin, Ill., became the third trotter ever to pass \$200,000 by annexing the Adelphi free-for-all mile at Roosevelt raceway June 14. Chris Spencer,

owned by Dunbar Bostwick, captured the \$50,000 Roosevelt two-mile trot on Sept. 11. Meadow Rice, property of W. G. Reynolds of Louisville, scored in the seventh annual Little Brown Jug racing at Delaware, Ohio, earning \$30,231.66 of the total purse of \$60,463.35. (T. V. H.)

Canada.—An amendment to the federal criminal code changed the graduated scale of percentages, ranging from 9% to 5%, that were retained by a racing association to a fixed rate of 9% of the total amount wagered on each race (thus conforming with the fixed-rate practice in the United States). Ontario reduced its pari-mutuel tax on race horse wagering from 19% to 17% in an attempt to curb illegal betting, and the cut applied to 1952 racing. For the first time a jockey club stock offering was made available to the general public when 900,000 shares of the Ontario Jockey club were put on the market. (C. Cy.)

Great Britain.—The Grand National at Aintree was won in 1952 by H. Lane's ten-year-old gelding Teal. Miss D. Paget's Mont Tremblant, a six-year-old, won the Cheltenham gold cup. Sir Ken, a year younger, owned by M. Kingsley, won the Champion Hurdle.

The keen rivalry between English and French owners for once went in favour of England. The Aga Khan and his English-trained three-year-old colt Tulyar broke all British records for stake money won in a season. Tulyar won all the seven races he contested and proved himself the best horse of his age in Europe. Among his successes were the Derby, the Eclipse stakes, the St. Leger and the King George VI and Queen Elizabeth stakes. The last-named was again the most valuable race in the calendar, worth £23,302 10s. in 1952. Tulyar's seven victories were worth £75,173 10s. in stake money, easily the most earned by a single horse in the history of racing in the British Isles.

M. E. Constant's Thunderhead II won the Two Thousand Guineas easily in an exceptionally large field for this race of 26.

The three-year-old fillies in England proved considerably

inferior to the colts.

Sir M. McAlpine's Zabara won the One Thousand Guineas, and Capt. A. M. Keith's Frieze took second place in the Oaks a month later. In France the corresponding races for fillies were won by G. Courtois's Pomare and by R. B. Strassburger's Seria. The best of the French three-year-old colts were A. Cutler's Orfeo, who won the Grand Prix de Paris; M. Boussac's Auriban, who had won the Prix du Jockey Club two weeks previously and was second two lengths behind Orfeo in the Grand Prix de Paris; and P. Duboscq's Feu de Diable, who in September won the Prix Royal Oak by eight lengths.

Though the three-year-old fillies in England were inferior to the colts, the two-year-old fillies were undoubtedly superior. The best was Bebe Grande, who won seven of her eight races.

A French-bred four-year-old, Aquino II, trained at Newmarket by F. Armstrong, won the Ascot gold cup and the Doncaster cup.

During the year racing in England found its tax reduced by about 15%. Entrance fees were cut by about the same amount, and the result was a general rise in attendances. (M. A. Md.)

Horses: see LIVESTOCK.

Horse Shows: see SHOWS.

Horticulture. Twenty-nine countries were represented at the International Horticultural congress, which opened in London, Eng., Sept. 9, 1952. The most important business was the provisional acceptance of a report on a code of nomenclature of cultivated plants as applied internationally. Action on the international registration of cultivated plants was deferred to the next congress, to be held in the Netherlands in 1955 or 1956. A report on conditions in England showed that yields from commercial horticulture had doubled since 1939, with but little increase in cultivated areas.

Announcement was made of an international gardening and flower show to be held in Hamburg, Ger., from May to October 1953.

The Netherlands had the best bulb crop since World War II, as a result of a long period of good weather. A sampling of reports from retail dealers in the U.S. indicated an expected bulb business of \$25,000,000. Oregon had a bumper crop of daffodils, but with a shrinking area resulting from foreign competition. Lily bulbs continued to be received from Japan in increasing numbers.

Northern Ireland lifted a ban on vegetables from the Netherlands and Spain, imposed because of foot-and-mouth disease. Yugoslavia and adjoining countries suffered heavy loss from drought, especially in vineyards. Argentina also suffered severely from drought, as did areas in central and south Africa. Rain came barely in time to save crops in Italy and parts of India. Locusts from east Africa threatened a complete loss of crops from Israel to India, but the plague finally was overcome through the use of aeroplanes and power sprayers from Great Britain and the U.S.

New England and other eastern states of the United States suffered the worst drought in 25 years, with heavy loss to market gardeners and amateurs, but the operators of irrigated farms got top prices. Because of the drought the apple crop was sharply reduced in the east, particularly in New England, with few apples for shipment abroad. Peach production was 10% below average for the U.S. as a whole, but slightly above average in the northeast. The pear crop was average, and grape production was 5% above average. The cranberry crop of 908,200 bbl. was slightly smaller than in 1951, but 18% above average. Only in the state of Washington was production below average. Pickers were hard to find and some Puerto Ricans were brought in for this work.



START OF THE 1952 Kentucky Derby at Churchill Downs, Louisville, Ky., won by Hill Gail (farthest from camera) on May 3



PRACTICE DAY in flower arranging for women of the Dorchester Floral Decoration society as they prepared for the first English "flower academy," held in London in the summer of 1952

The gold medal of the National Association of Gardeners was awarded Henry F. du Pont of Wilmington, Del., for outstanding contributions to horticulture. This award is made rarely.

The Society of American Florists voted to spend \$1,000,000 for a national marketing program.

The Dutch elm disease continued to spread rapidly in New England, with many communities finding it difficult to keep up with the needed removal of dying trees. It finally invaded the campus at Harvard university, Cambridge, Mass., where two fine old trees had to be removed. However, it was announced that the gypsy moth had been practically eliminated from Massachusetts where it had done great damage to evergreen trees. This was accomplished by spraying from planes, and other states were expected to follow this plan.

Nurserymen in the U.S. reported widespread interest in the planting of home grounds because of the great increase in home building. This followed a continuing reduction in the amount of landscape work being done on large estates.

In Australia the prices of some food stuffs went down during the year, but fruit and canned goods were higher and the announcement came that the country needed more fruit production. This was in spite of the fact that Australia's canned fruit production was 500,000 cases greater than the previous season's pack of 3,500,000 cases. Only pineapples were in short supply for canning. The summer crop of this fruit in the state of Queensland was one of the smallest on record.

Fruit growers in Africa and France reported success in dispersing hail clouds by the use of rockets.

A new ammonium sulphate factory was completed at Sindri, India, and plans made for modernizing horticultural practices in that country. Panama disease, a fungoid growth which destroys banana plantations, appeared in east Africa, where bananas are among the most important food crops. The movement of bananas from Tanganyika was forbidden, and a search for immune varieties was started.

In the United States, new soil conditioning materials appeared on the market. While these were not fertilizers, it was claimed that they would improve the condition of many soils and make possible the production of greatly increased crops. Much controversial advertising was published, but reports from

gardeners indicated that some of these materials were valuable where clay soil existed but not when used in sandy soils. (See also CHEMISTRY; FRUIT; VEGETABLES.) (E. I. F.)

Hospitalization Insurance: see INSURANCE.

Hospitals. In 1952 the hospitals and the medical profession of the United States and Canada voluntarily assumed the responsibility for maintaining high standards of hospital operation. To the Joint Commission on Accreditation of Hospitals, composed of hospital administrators, physicians and surgeons, went the assignment of surveying hospitals and accrediting them. At a special ceremony, responsibility for accreditation was transferred to the new commission from the American College of Surgeons which, until 1951, carried on this program alone.

Of great importance to hospitals, and to the 19,000,000 patients cared for during the year, was the continued increase in hospital costs. The annual survey of the American Hospital Association found that the cost of operating general, nonprofit hospitals in the United States neared \$1,700,000,000 in 1951. The average cost for each patient each day in these hospitals amounted to \$18.01, an increase of \$1.12 over the previous year, and more than double that of 1946. However, the average patient spent only slightly more than eight days in the hospital, a low reached in 1947 and maintained each year thereafter.

Inflation was only partly responsible for the increased expense of caring for hospital patients. The very nature of hospital care had undergone a transformation in recent years. Revolutionary methods of diagnosis and treatment had been adopted, and while they resulted in tremendous savings of lives, they also required more expensive equipment and medication and highly skilled personnel. Salaries paid to hospital personnel in 1951 represented 56% of total expense, and in many hospitals this figure rose to as high as 75% of total costs.

Despite the rise in expenses, hospitals reached a more favorable financial position during the year. Patient income fell short of meeting expenses by \$137,000,000, but this was compensated for by voluntary contributions from individuals, foundations and industry, as well as by city, county and state allotments for the care of indigent patients.

The Commission on Financing Hospital Care, an independent commission set up by hospitals to study the best means of providing high quality hospital care at the lowest possible cost to the public, began its second year of intensive research. Concentrated studies were undertaken in three areas: the first was a survey of hospital income and hospital costs and an attempt to determine what proportion of his income the average person pays for hospital care; the second sought to establish the extent of coverage of hospitalization insurance and its cost; the third concerned possible methods of financing hospital care for those who were unable to pay for it themselves.

U.S. hospital construction during the year kept pace with the need for more facilities, although there was still a shortage of nurses, internes and other hospital personnel. By Oct. 1, 1952, more than 1,900 projects had been approved since passage of the Hill-Burton Hospital Survey and Construction act which provided for hospitals to be built, remodelled or enlarged with community funds supplemented by federal appropriations. Of approved projects, 1,055 were completed and in operation, 731 were under construction and 137 were in earlier stages of development. The total cost was estimated at nearly \$1,500,000,000, of which the federal share was \$525,000,000. The program provided for 92,128 hospital beds and 306 health centres, in addition to 63 health centres combined with general hospitals.

The "book value" of hospitals in the United States had grown more than 40% since 1947, the first year for which estimates were available, and in 1951 totalled nearly \$8,250,000,000. This put hospitals in the position of fifth largest industry in the country from the standpoint of plant assets. (See also VETERANS ADMINISTRATION, U.S.)

Canada.—The cost of operating short-term hospitals in Canada continued on the rise, averaging \$10.25 for each patient per day during 1951 as compared with \$9.88 the year before. The average length of patient stay remained at about ten days.

Federal grants in 1952 encouraged continued hospital construction and expansion, increased the number of outpatient departments and travelling tuberculosis detection services and set up new rural health units.

During the year, surveys were made of health facilities and requirements in two provinces which did not have compulsory prepayment plans. In Quebec it was noted that hospital facilities were not available in all regions of the province, and it was recommended that the provincial department of health continue to favour the opening of hospitals in strategic locations. In Manitoba the study supported the principles of a health insurance plan for Canada, but suggested that priority be given to the preventive medical services now being set up under the province's own health plan.

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International.—The second postwar study tour organized by the International Hospital federation took place in Italy from May 24 to June 7, 1952, at the invitation of the Italian Hospital federation. Approximately 130 members of the federation from 15 countries, including 30 representatives from Great Britain, took part in the tour, which in a fortnight covered the principal hospitals in and near Milan, Bologna, Florence, Rome and Genoa.

The eighth International Hospital congress was to be held in Great Britain from May 25 to 30, 1953. A hospitals exhibition was planned to take place at the same time as the congress in London, which would give hospital workers from all over the world an opportunity of seeing for themselves the latest developments in hospital equipment.

Great Britain.—The financial position of the country called for the utmost economy in the social services, and the government announced that expenditure on the national health service would be limited to £400,000,000. It was widely recognized that some increase in the cost of the hospitals was inevitable, and when the health estimates were published in March 1952 the figure for the hospital and specialist service was increased by about £20,000,000, the comparative figures being £285,000,000 in 1951-52 and £304,000,000 for 1952-53. In May H. C. F. Crookshank resigned his appointment as minister of health and was succeeded by Iain Macleod.

The first detailed costing returns for hospitals in the national health service in England and Wales were published by the ministry of health early in June. These covered about 2,750 hospitals and were for the year ending March 31, 1951. They were a first interim measure, in a tentative form, to enable hospital authorities to compare the average costs of individual hospitals, and those costs and the regional and national average figures.

The investigation into hospital costing undertaken by King Edward's Hospital fund for London and the Nuffield Provincial Hospitals trust at the invitation of the ministry of health was concluded during the year and their reports were published.

There was also published in June the first volume of a new series of statistics (*National Health Service; Hospital and Specialist Services, England and Wales, Statistics for the Year Ended*

31st December, 1949, H.M.S.O., London) showing the beds, patients and medical, nursing and other staff by categories of all the hospitals in the state service in England and Wales. (A. G. L. I.)

Hotels. The U.S. hotel industry, after six years of gradually declining room occupancy, reached a levelling-off point in 1952, and occupancy remained constant at approximately 79%. Sales volume, however, increased about 7% as a consequence of the shrinking value of the dollar. Room sales were up 7% to 8% and both food sales and beverage sales rose about 6%. Net income before taxes remained virtually unchanged.

Hotels continued to benefit from two trends which had been noted in previous years. One was a gradual increase in convention and other group business, as businessmen found it more and more necessary to meet and discuss mutual problems. The other was a continual lengthening of resort seasons, winter as well as summer, enabling resort operators to make greater use of their facilities by spreading their operations over a greater portion of the year.

The second trend was advantageous to vacationists as well as to hotels, since it had the effect of making resort facilities available to a greater number of people in the course of a year, and also made possible significant economies in off-season vacationing.

A nation-wide survey made for the American Hotel association during 1952 revealed that transient hotels, large and small, had created many new services and facilities to appeal especially to motorists and travelling family groups. For the convenience of the motor travellers, some hotels had built motor entrances, with special registration desks and stairs or elevators, to make it possible for the motorist to check in at this entrance and go directly to his room, without passing through the lobby. Many hotels had added storage garages or parking lots and sometimes both. Others, unable to provide conveniently for motorists because of their congested downtown locations, had built motor annexes on the outskirts of their cities to make hotel comfort and convenience more readily available to the motoring public.

Special services and facilities for travelling family groups were keyed to the fact that increasing proportions of business and pleasure travellers were accompanied by children. To serve these guests, hotels created playground areas and special dining facilities for guests with children. Many provided children's menus, with half-portion prices. Cots, cribs and double-decked bunks were available in a large number of transient hotels, and some also provided nursery facilities and baby-sitting service. (See also TOURIST TRAVEL.) (C. A. HH.)

Great Britain.—As in recent years, hotels, restaurants and inns were affected in 1952 by the fact that, on the one hand, costs of operation were rising and, on the other, there was in most countries a curtailment in the spending power of the public, resulting from increased taxation and the rising cost of living.

As regards residential establishments, another change which had been developing before World War II showed itself again in 1952. This was that bookings generally were for shorter periods than formerly. Reasons for this were the improvement of travel facilities by land, sea and air, and the fact that if possible many people would rather move on from place to place than remain in one centre for a whole holiday.

Hotels, restaurants and inns continued to benefit from the encouragement given to tourists by governments and local authorities everywhere. Continual propaganda by means of leaflets, posters and motion pictures, combined with the staging of special attractions on a national and local scale, made the tourist

feel that he was a much-sought-after person. In Great Britain the success of the campaign for attracting tourists was reflected in another new record in the number of visitors from abroad reported by the British Travel and Holiday association. Already in the summer of 1952 plans were being made for the reception of the vast crowds expected to attend the coronation of Queen Elizabeth II in 1953, and a coronation accommodation service was established by the British Travel and Holiday association and the British Hotels and Restaurants association.

During the year, further consideration was given to amending the wages orders, under the Catering Wages act, 1943, to which had been attributed many of the difficulties which British establishments had had to face in postwar years. By the end of the year little had been achieved that materially altered the position, and unlicensed residential establishments were still not subject to a wages order, although licensed establishments had been regulated since 1948.

There was no decrease in the number of United States visitors to continental resorts, while the flow of British visitors to the continent was not appreciably affected by the reduced currency allowance available to them. In Great Britain management still suffered from the strict rationing of some foods, though tea was derationed in October.

Marked attention was paid to the technical training of entrants into the hotel and catering industry. In Great Britain a national apprenticeship council was set up which was expected to have a beneficial effect on catering standards. (H. C. CE.)

Housing. For the second consecutive year the number of new nonfarm dwelling units started in the United States during the first half of the year showed a decline. During the months of January-June 1952, 565,700 housing units were placed under construction, an amount 4.1% lower than for the comparable period of the previous year and almost 20% below the first six months of 1950.

During the first half of 1952, 55% of total new residential construction occurred in cities and other urban places, contrasted with a proportion of 58% in these areas during the first half of 1951. Continuing to compare these two periods: dwellings in one-family structures constituted 81% as against 80% of total, and privately owned construction rose from 90% to 92% of total. The average estimated construction cost per unit remained virtually unchanged from the previous year, but stood 10% higher than 1950 and 20% larger than 1949.

Indications of softening in the market for new residential construction began to appear in various sections of the nation early in the year. It was first observed among the higher priced units in both apartment and single-family houses. Whereas, previously, units had been snapped up upon completion, or even earlier, vacancies in new units were beginning to appear and many new houses remained on the market for weeks without as much as an inquiry. Several large apartment houses were forced into foreclosure and prices for single-family houses over \$15,000 began to sag. Builders who had constructed 100 houses at a time began to limit their current volume to 30 or 40. Although in some areas housing shortages were still acute, by and large the intense housing pressure of the postwar years appeared to have been relieved. People were becoming more discriminating—refusing to consider residences that were too far removed from places of work or recreation and insisting upon a higher standard of construction. The amount of housing required to accommodate new families had also declined, reflecting a marriage rate in 1951 that was 30% below 1946.

A large part of the tightening of demand, it was claimed, was the result of factors related to housing finance: mortgage lenders were becoming more cautious, mortgage interest rates were

considered to be too low, and regulation X kept many potential buyers out of the market by the down-payment requirement.

Mortgages.—The dip from high levels of construction caused many mortgage lenders to pause and consider the possibility of another long-term decline in the residential construction cycle. Recent research studies of mortgage investment experience undertaken by John Lintner of Harvard university and by Raymond J. Saulnier for the National Bureau of Economic Research, indicated that mortgage loans made close to the peak of the real estate cycle in the 1920s showed a higher rate of foreclosure and delinquency in payments than loans made during other periods. Many lending institutions, accepting these facts, began to reshape their policies in accordance with them. Loans which had previously been made or purchased in block were now examined individually and the whole process of mortgage selection tightened.

The low prevailing rate of interest on mortgage loans was another reason for the tightening of mortgage credit. Lenders maintained that the interest rate was no longer commensurate with the increasing risk. Moreover, the interest rate on government bonds had risen, so that new mortgage loans could no longer compete favorably with government bonds as an outlet for institutional investment. The mortgage money contraction was felt most severely in the Federal Housing administration and Veterans administration loan programs. FHA loans (4½% and VA loans (4%) net about 3¼% and 3½% respectively to the lenders. In the first half of 1952, both FHA one- to four-family house mortgage insurance written and VA-guaranteed and insured home loans closed had declined 22% from the same months of 1951. During this period the total amount of nonfarm mortgages (of \$20,000 or less) recorded rose 4%. As a consequence, government insured and guaranteed home mortgages equalled 27% of total recordings as against 36% in the first half of the previous year.

In order to secure a higher return on G.I. loans, the interest rates on which are fixed by the government, some lenders entered into "warehousing" agreements with builders. Under this arrangement lending institutions agreed to purchase all the builders' mortgages at 95% of face value. The builder had to absorb the 5% loss which reduced his profit or pass all or part of this amount on to the purchaser in the form of higher prices. This practice was in sharp contrast to the 3% to 5% premiums that lenders were paying for mortgage loans five years before.

Early in the year the senate banking and currency committee held a round table on mortgage money problems. At this time increases in interest rate were suggested, but Sen. Burnet R. Maybank, committee chairman, as well as other experts did not believe that a small rise in interest rate would bring out the necessary amount of mortgage money. A large increase in interest would raise mortgage payments too much.

A suggestion emerged from these conferences that was later incorporated into the Housing act of 1952. It was pointed out that mortgage money would be more readily forthcoming, particularly for loans in critical defense housing areas, if the Federal National Mortgage association (a government agency) were to make prior commitments to purchase such loans from the original lender. Although this procedure was tried for a short while during the veterans emergency housing program, the FNMA functioned primarily as a secondary mortgage market to acquire from primary lenders mortgages that could not be sold to other institutions. The Housing act of 1952 authorized \$900,000,000 for mortgage purchases and commitments by FNMA. These purchases were limited, however, to government insured or guaranteed mortgages on defense housing, and on houses made available to victims of catastrophe which the president had declared a major disaster.

Credit Controls.—The major issue in home finance in 1952 centered around regulation X. Home builders were caught between cautious lenders on the one hand and contracting demand on the other. By midyear it was estimated that 250,000 new houses were unsold, an amount equivalent to more than 40% of total production during the first six months of the year. The builders felt that if purchasers could be secured mortgage money would somehow or other find its way into the market. They therefore focused their attention on regulation X which they felt excluded a sector of potential purchasers from the market because of the equity requirement that went up to 50% on homes in the higher price brackets. In mid-June the federal reserve board relaxed regulation X slightly, and by the end of June a formula had been written into law providing for its complete removal.

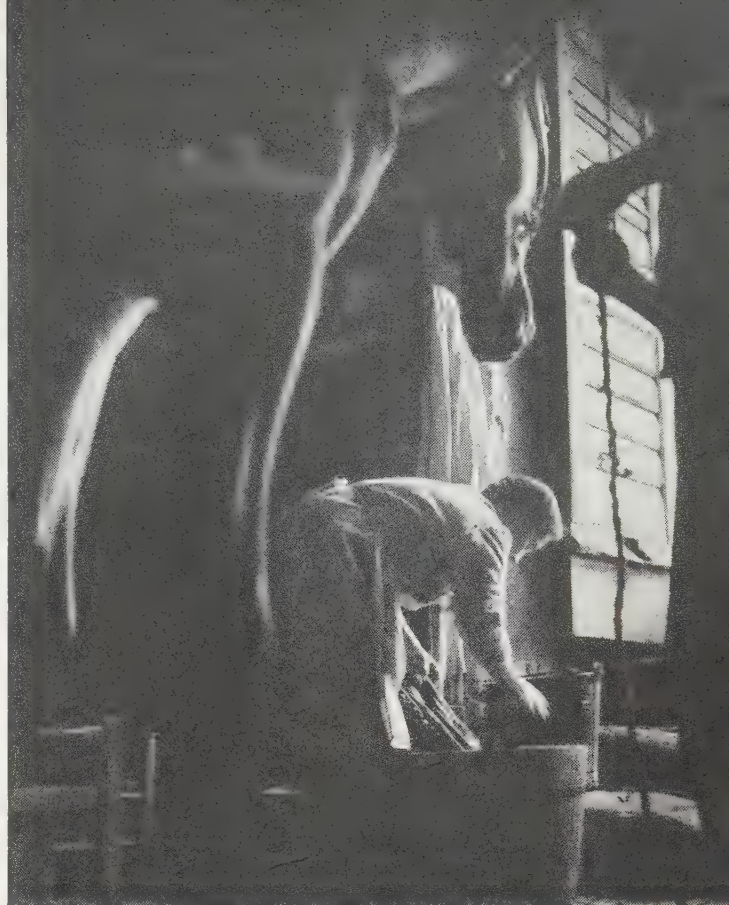
An amendment to the Defense Production act stipulated that if housing starts for any consecutive three-month period should fall below an annual rate of 1,200,000 dwellings, down-payment requirements should not exceed 5% of the sale price. The amendment further provided that the relaxation of credit controls be put into effect not later than one month after the expiration of the consecutive three-month period during which starts fell below the annual rate of 1,200,000. The formula provided that the housing to be counted in the monthly estimates should consist of permanent (public as well as private units), nonfarm, family dwelling units.

During the months of June, July and August, housing starts fell below the annual rate of 1,200,000. In mid-September the two-year-old curbs on mortgage credit were suspended and conventional mortgage loans made by banks, savings and loan associations and other private sources were no longer subject to federal restrictions on this score. Regulation X might be reimposed, however, whenever new housing starts climbed above the 1,200,000 rate for three consecutive months. Builders were thus in the position of never being quite certain that the credit conditions prevailing when a group of houses were placed under construction would be the same at the time the completed structures were placed on sale.

Rent Control.—Another step in the direction of the removal of rent control, one of the most controversial issues in U.S. housing, was taken in 1952. A federal act provided that unless a city or town specifically indicated its desire to continue these controls, they would lapse as of Oct. 1, 1952. According to the Office of Rent Stabilization, of the 2,400 communities under rent control prior to Sept. 29, approximately 1,500 voted to continue under the law while the remaining 900 permitted the law to lapse. In noncritical defense areas the number of persons covered by federal rent control was reduced from 20,000,000 to 12,500,000, and the number of dwelling units from 6,000,000 to 4,000,000. Even in these areas controls, along with the price and wage stipulations of the Defense Production act, were due to expire on April 30, 1953, unless congress should act to extend these sections of the law beyond that date.

It must be remembered, however, that rent control was still mandatory in several states that had their own statutes. In New York state alone rents were regulated on close to 3,000,000 individual housing accommodations, and in Wisconsin dwellings in the cities of Milwaukee and Madison were similarly covered. In addition, federal rent controls were in force in 118 critical defense housing areas and another 28 areas were in the process of being certified into this group.

Continuing under federal rent control were 36 of the 51 cities with population of 100,000 or more. These included Baltimore, Md., Boston, Mass., Chicago, Ill., Cincinnati, O., Cleveland, O., Minneapolis, Minn., Newark, N.J., Philadelphia, Pa., Pittsburgh, Pa., St. Louis, Mo., and San Francisco, Calif. In addi-



CAVE DWELLING in Matera, It., where farmers and their families still shared living quarters with their domestic animals in 1952. Near by, a model village was being built by the government to house them

tion, controls were retained by 78 out of 116 cities with populations from 50,000 to 100,000 and by 1,350 smaller communities. Among the major cities that failed to act in time to continue controls were Akron, O., Atlanta, Ga., Denver, Colo., Detroit, Mich., New Orleans, La., Seattle, Wash., and Toledo, O.

Federal Public Housing Program.—A ceiling of 35,000 was established by congress on public housing units to be constructed during the fiscal year 1953, or in any subsequent year. This action substituted a fixed annual maximum of 35,000 units for the variable ceiling established by the Housing act of 1949. The 1949 act authorized construction of new public housing units at a rate not to exceed 135,000 per year for the six fiscal years, July 1, 1949, through June 30, 1955. The 135,000 figure could be increased or decreased in any one year upon presidential recommendation, but a limitation of 810,000 was stipulated for the entire six-year program. The program in the 1951 fiscal year was cut back to 30,000 for the last six months of 1950, and in fiscal 1952 the ceiling was 50,000.

Despite legislative setbacks, by the end of Aug. 1952, 144,272 new dwelling units had been started under the low-rent housing program established by the Housing act of 1949. About one-third of these units (45,532) had been completed and made available for the occupancy of families whose income was insufficient to allow them to rent or purchase adequate living quarters, and households displaced by slum clearance and redevelopment projects. As of Aug. 31, 1952, there were 246,504 dwelling units in low-rent housing under the management of the Public Housing authority. An additional 101,891 were under construction and 67,207 were in various preconstruction stages. The PHA had more than 730,000 units in its total work load, but 307,000 of these were units in the process of disposition. (See also ARCHITECTURE; BUDGET, NATIONAL; BUILDING AND CONSTRUCTION INDUSTRY; BUSINESS REVIEW; MUNICIPAL GOVERNMENT; TOWN AND REGIONAL PLANNING.) (CH. RA.)

Canada.—Housing continued throughout 1952 to be Canada's foremost economic and social problem. In midyear, it was estimated that Canada could use 700,000 new housing units immediately. The situation sparked many spirited attacks upon the federal government for its housing policy; social agencies blamed housing shortages for marital troubles and juvenile delinquency; members of parliament demanded more federal government lending at lower interest rates and more loans with smaller down payments; labour unions demanded more vigorous federal construction of low-rental housing projects and criticized government policy that funnelled investment funds into debentures and bonds instead of into housing. Replying to its critics, the federal government blamed the house-building slump on the lack of land serviced with roads, water, sewers and schools, and ignored demands for a federal-provincial conference on the housing problem. However, the federal government used the National Housing act to give the provinces and municipalities greater encouragement to initiate slum-clearance projects and extended government-backed loans into areas where there were no regular financing facilities.

Ontario was among the provinces taking separate steps to increase housing. It set up a crown company to make loans to prospective homebuilders in villages and hamlets, and on farms where private lending institutions were less willing to take mortgages. It gave the department of planning and development powers of expropriation to facilitate assembly of land for housing and also to make possible industrial participation with governments in housing projects.

Some of the housing problems of 1952 were directly related to housing costs. A house that had cost \$7,000 to build in 1950 cost \$9,000 in 1952, according to figures released by the federal crown company, Central Mortgage and Housing corporation. On the average, it cost Canadians \$10,211 to buy a house in 1951, which was 16% higher than in 1950. The down payment in 1951 was \$3,188, compared with a down payment of \$1,928 in 1950. There was much evidence that these mounting costs rose still higher in 1952. Approximately 150,000 building tradesmen sought and generally received higher wages, and where such pay increases were not quickly won, strikes were called. The first legal employers' strike came when the general contractors of Vancouver, B.C., in a provincially supervised move locked out 1,500 striking carpenters (wanting a 90-cent per hour pay boost) and 6,000 other nonstriking construction workers.

In the first four months of 1952, 18,391 houses were completed, compared with 25,209 in the corresponding period of 1951.

(C. Cv.)

Great Britain.—By July 31, 1952, 1,600,230 new houses, flats and other units of accommodation had been provided in the United Kingdom since 1945. The total number of new dwellings completed under the post-World War II program was 1,304,444 (1,147,298 permanent and 157,146 temporary). This represented a formidable rehousing achievement carried out in seven years when costs were high, materials scarce and manpower not readily available.

Harold Macmillan, minister of housing and local government, determined that under him the government would produce more houses than the 200,000 a year which his Labour predecessor had regarded as the maximum figure, considering other demands on the building industry—the defense program, the need for new factories, etc. Macmillan's program also included a reduction in housing standards. The postwar house of the Labour government had, on the average 1,000 sq.ft. of floor area. Macmillan calculated that by adopting the terrace house as the norm, there would be a saving in capital cost of at least £150 on each house. He took the view also that by skilful interior planning room sizes could be maintained—by reducing circulation space, by

combining the hall and the dining room and by producing "large living-room" house, new to the United Kingdom but already popular in Canada and the United States, in which the stairs rose from the living room and the whole house was heated from a central heating system.

The scheme had the further advantage of enabling more houses to be built with the same material and the same manpower. The ministry's publication *Houses 1952*, the second supplement to the *Housing Manual 1949*, claimed that the new plans retained the minimum room sizes of the 1949 manual.

The net house floor areas ranged from 679 sq.ft. for a semi-detached house for four persons to 854 sq.ft. for a terrace house for five persons. At the best it represented a drop in postwar standards of more than 150 sq.ft. of living area and at the worst a drop of more than 400 sq.ft. The best was a slight improvement on the Tudor-Walters standards of 1918–31 housing, and the worst fell considerably below that standard. The homeless, the young couples living with their in-laws, and the wives who shared a kitchen regarded a small house of their own as infinitely better than no house at all, and the minister's policy slightly enhanced their prospects of securing a house of their own.

The minister did not carry his zeal for economy into the field of housing finance, and he perpetuated the high, uneconomical subsidies for multistory development in the centre of cities which had been incorporated by Aneurin Bevan in his 1946 Housing act. Gordon Stephenson, head of the Liverpool university school of architecture, in an address to the Town and Country Planning Summer school, said of these subsidies: "On normal houses the value of the 1952 subsidy at 4½% is £76. On flats with lifts on land at £10,000 to £12,000 an acre, the subsidy is £2,094." When it is remembered that the floor area of a flat was generally about two-thirds the floor area of a subsidized house, the discrepancy was even more marked. It meant that, with or without Macmillan's saving in space, it was possible to build a family house for a total cost of £500 to £700 less than the subsidy alone on a small flat. It was felt by many that the policy of flat development, wholly alien to the English tradition and character, had been, and was being, imposed upon the people against their will.

Belgium.—The number of private houses built in Belgium in 1951 was 26,747, compared with 33,794 in 1950. The total number of houses of all kinds built in 1951 was 33,612. On Dec. 31, 1951, 11,143 houses were under construction, compared with 14,759 on Dec. 31, 1950. About 96% of the total building work in Belgium was devoted to house building.

France.—From the liberation to Dec. 31, 1951, 249,820 houses had been built in France and at that date 219,880 further houses were in course of construction. In 1951, 44,345 new houses were built and 30,575 war-damaged houses were restored.

The Netherlands.—In 1951 the number of new houses finished in the Netherlands was 58,666 (1950, 47,300). At the end of July 1952, 29,095 houses had been completed.

Norway.—In 1951 Norway's housing program was stepped up enormously and 21,000 houses were completed. In the first six months of 1952, 15,000 houses were built, compared with 7,800 in the first half of 1951.

Sweden.—It had taken Sweden until 1946–47 to bring its housing output up to the prewar rate. In these two years 116,000 were built, the total exceeding the two immediate prewar years by 3,500 houses. Since 1947 there had been a sharp decline descending to 41,551 in 1949 and rising slightly to 43,935 in 1950. Sweden continued to occupy an outstanding place in housing design. In the matter of family living space its record was not so good. More than half the houses built in 1949 and 1950 had two rooms and a kitchen, or less, and 5,198 houses, although

equipped with central heating, were without a private bath or toilet or both.

U.S.S.R.—It was reported that in the first postwar five-year plan 120,000,000 sq.yd. of living floor space had been built in the U.S.S.R. Taking the average in the postwar U.K. house at 1,000 sq.ft., this represented the construction of 1,080,000 comparable houses. The figures issued by the U.S.S.R. corresponded closely with statistics used by E. M. Chossudovsky in the *Housing and Town and Country Planning Bulletin No. 5*, published by the United Nations. The first postwar five-year plan aimed at producing the equivalent of 129,000 United Kingdom houses. This target was reported to have been passed.

(G. MCA.)

Human Nutrition and Home Economics, Bureau of: see AGRICULTURAL RESEARCH ADMINISTRATION; HOME ECONOMICS.

Human Rights, Covenant of: see INTERNATIONAL LAW; UNITED NATIONS.

Humour of 1952. The United States public stayed with its old favourites in the comedy field during 1952, and comedians who had claimed their interest briefly in 1951 for the first time faded a bit. Perhaps because this was an election year, there was entertainment enough in the political field.

Television.—Television continued to be the first target of all comics in 1952. Performers who were successful in the newest of the entertainment media could write their own ticket in allied fields of vaudeville, movies, night clubs and radio.

However, the general direction of TV comedy seemed to be changing, with about 15 weekly shows being based on situation comedy. In this form, the actions of the characters are plotted out in a story form. Most notable and popular of these shows was "I Love Lucy," with Lucille Ball and Desi Arnaz, a show that utilized slapstick along with the story. Many old radio favourites were in television: Amos and Andy, George Burns and Gracie Allen, "My Friend Irma," "Life with Luigi" and "I Married Joan" with Joan Davis.

In the slapstick and fast-talking kind of comedy, Red Skelton's sketches seriously threatened Milton Berle's long occupancy on the throne of TV comics. When Berle returned to television in the fall, he changed his format from that of a variety show to a show with theme and continuity.

Other comedians of the Skelton-Berle genre, primarily vaudevillians, continued in high popularity, such as Eddie Cantor, Bob Hope, Jimmy Durante and Dean Martin and Jerry Lewis.

Widely hailed as the freshest comedian of the year was Jackie Gleason, whom some critics labelled "chaplinesque."

In the lighter field of humour, many stars disappeared from the weekly scene, made only occasional appearances, appeared in panel shows or changed their format completely. Arthur Godfrey continued to hold his tremendous audiences, but Dave Garroway began to do a news show, Herb Shriner got a job as a quizmaster, and Robert Q. Lewis, Ken Murray and Sam Levinson all were without shows of their own. However, the satirical humourists, Sid Caesar and Imogene Coca, held fast to large and appreciative audiences.

Radio.—There was little significant change in the field of radio. "Big Show," which starred Tallulah Bankhead, went off the air, and Miss Bankhead made her television debut.

Stage.—One of Broadway's top hits was "Top Banana," starring Phil Silvers, who did a take-off on Milton Berle. "New Faces of 1952," another Broadway production, brought fresh talent to the stage in some extremely amusing satirical sketches. Among the members of the cast were Robert Clary, Alice Ghostly and Eartha Kitt. Plays such as "The Fourposter,"

"Mrs. McThing," "Guys and Dolls" and "The Moon Is Blue" continued to enjoy long runs. There was a revival of "The Male Animal." Other new shows included "Wish You Were Here" and "An Evening with Beatrice Lillie."

Movies.—Hollywood continued to produce the same sort of comedy films it had for years, with nothing particularly notable in the field. Martin and Lewis were probably the most popular comedy team appearing, Bob Hope made another film and Abbott and Costello continued with their usual success.

Supper Clubs.—The New York supper club continued to be the cradle of American humour, replacing vaudeville. Places such as the Village Vanguard, the Blue Angel and La Ruban Bleu hired fresh and new talent, some of which was destined for stardom.

Books.—Edward Shepherd Meade's *How to Succeed in Business Without Really Trying* was a top best seller. Other popular works were Bennet Cerf's anecdotal *Good for a Laugh*, Louis Untermeyer's *Best Humor Annual*, the *James Thurber Album*, Ira Jan Wallach's *Hopalong-Freud Rides Again*, S. J. Perelman's *The Ill Tempered Clavichord*, Ludwig Bemelmans' *How to Travel Incognito* and P. G. Wodehouse's *Angel Cake*.

General.—Possibly because the Korean war continued to drag on and possibly because of the election year, people seemed to be laughing less than usual. There was little humour arising from the Korean conflict, even bitter humour. Bill Mauldin, whose "Willie and Joe" kept the G.I.'s of World War II laughing at themselves, did a book on Korea, but he seemed to be trying to tell people about the war rather than satirizing it.

The seriousness of the presidential campaign precluded many jokes about it. Little parodying of the candidates was done by comedians, little satire and few imitations. (D. C. G.)

Humphrey, George Magoffin (1890—), U.S. government official, was born on March 8 at Cheboygan, Mich., and received his law degree from the University of Michigan, Ann Arbor, in 1912. Until 1918 he practised law with his father's firm in Saginaw, Mich., and in that year he was appointed general counsel of the M. A. Hanna company, steel and coal manufacturers, at Cleveland, O. In 1925 he was named vice-president and in 1929 president of the company, which he expanded into a large and profitable industrial enterprise. He became chairman of the board in May 1952. During the administration of Pres. Harry S. Truman, Humphrey accepted two quasi-federal posts—chairman of the U.S. department of commerce's business advisory council in 1946, and head of a survey of German industrial plants conducted by the Economic Cooperation administration in 1948–49. A supporter of Sen. Robert A. Taft for president prior to the Republican convention of 1952, Humphrey was selected by Dwight D. Eisenhower on Nov. 21, 1952, to be U.S. secretary of commerce in the new administration.

Humphrey, Hubert Horatio, Jr. (1911—), U.S. senator, was born on May 27 at Wallace, S.D. He studied at the University of Minnesota, Minneapolis, and Louisiana State University and Agricultural and Mechanical college, Baton Rouge, and taught political science at both of these universities. In 1941 he joined the Work Projects administration, and specialized during World War II in re-employment training for veterans. He was mayor of Minneapolis from 1945 to 1948 and was elected U.S. senator from Minnesota on the Democratic ticket in 1948 for the term 1949–55. A member of the "liberal" wing of the party, Humphrey was national chairman of the Americans for Democratic Action in 1949–50. He was credited with having secured acceptance of the civil rights plank in the 1948 Democratic party plat-

form that resulted in the States' Rights Democrats split. He also took a prominent role in the 1952 Democratic convention at Chicago, Ill., and was himself a "favourite son" candidate from Minnesota. With Sen. Blair Moody of Michigan and Sen. Herbert H. Lehman of New York he unsuccessfully opposed the seating of Virginia, South Carolina and Louisiana after these southern states had refused to take the convention's "loyalty pledge." At the convention, Humphrey was a leader in the temporary coalition between Sen. Estes Kefauver and Averell Harriman which sought to stop the nomination of Adlai E. Stevenson.

Hungary. A people's republic of southeastern Europe, Hungary is bounded west by Austria, north by Czechoslovakia, east by Rumania and south by Yugoslavia. Area: 35,893 sq.mi. Pop.: (Dec. 31, 1948, census) 9,201,158; (1951 est.) 9,390,000. Language (1947 est.): Hungarian 92.9%, German 5.1%. Religion (1947 est.): Roman Catholic 65.6%, Greek Catholic 2.5%, Calvinist 20.8%, Lutheran 6%, Greek Orthodox 4%, Jewish 4.3%. Chief towns (1941 census): Budapest (cap., 1,164,963; 1948, 1,058,288); Szeged (136,752); Debrecen (125,933); Miskolc (109,433). Chairman of the presidium of the national assembly in 1952, Sandor Ronai and (from Aug. 14) Istvan Dobi; prime ministers, Istvan Dobi and (from Aug. 14) Matyas Rakosi.

History.—At the session of the national assembly on Aug. 14, 1952, Dobi, the prime minister, resigned and Rakosi, a vice-premier and leader of the Workers' (Communist) party, became premier. Dobi was promoted to the presidency of the republic, while President Ronai was made chairman of the national assembly. This was a demotion for Ronai, the last former Social Democrat to occupy a position of decorative importance. When in 1951 the extreme left wing of the Socialists was purged from its positions in the state and in the Workers' party, Ronai alone remained. The appointment of Rakosi, following by two months the appointment of G. Gheorghiu-Dej as premier in Rumania, removed the last "peasant" premier of a satellite country.

The personality of Rakosi received more than usual publicity during 1952. His 60th birthday celebrations were marked by fulsome flattery. The little Stalin of Hungary was copying his genial prototype even in small details. Among these was the falsification of history to the advantage of his own reputation. In the Soviet Union it had become sacred dogma that Trotsky did nothing for the Bolshevik cause in the revolution, and that the civil war was won by Stalin's defense of Tsaritsyn. In Hungary the name of Bela Kun, leader of the Communist regime of 1919, was erased from all history books, and now the greatest exploit of the revolutionary war was an alleged victory at Salgotarjan, won by the courage and organizing genius of Rakosi. One difference between the two cases was that Stalin in 1917–20 really was a person of some importance, even if a lesser figure than Trotsky, whereas Rakosi in 1919 played a minor political role and no military role at all.

The most publicized industrial exploit of the year was the opening of the new blast furnace at Diosgyör on May 11. Official commentary claimed that it had been built in eight and one-half months, and that the success was largely the result of Soviet aid. In an article in *Pravda* of March 1, Erno Gero, Hungarian chief planner, stated that coal, iron, steel, electric power and crude oil production were lagging behind the development of the machine industry.

Various steps were taken to coerce industrial labour. The trade unions acquired new leadership on Jan. 17, when Antal Apro, the general secretary, was replaced by Istvan Kristof. On May 1, a system of employment cards was introduced to stop movement of workers from one job to another. No worker might be taken on by any enterprise if his employment card was

not in order. Heavy fines were introduced in June for absenteeism in the mines. Socialist competition and Stakhanovism were to be developed more than ever. *Szabad Nep*, the Communist party's daily organ, complained on July 13 that managers remained satisfied with the achievements of individual Stakhanovites without taking adequate steps to ensure that the working methods of these Stakhanovites were accepted and applied by every worker. The aim behind this criticism was that exceptional outputs achieved by Stakhanovites should as quickly as possible be made the "norm," that is, the minimum standard expected of every worker, by which his wage was calculated.

At the beginning of the year collective and state farms together had nearly 25% of the arable land. The pace of collectivization was slow until August, when, as in previous years, it was once more speeded up. Meanwhile the organization of the "Socialist sector" of agriculture was made stricter. On May 20 a ministry of state farms was set up. Just previously, on April 23, a government resolution had laid down precise recommendations for tightening labour discipline in collective farms. The system of permanent brigades, specialized work teams led by foreman and working together for three years or more, was introduced. It was laid down that every adult member of a collective farm must perform at least 120 "labour days" a year on the collective land, and mothers of young children at least 80. A "labour day" was a standard amount of work, which might involve more or less than a whole day's work, depending on the degree of skill involved. The minimum amount was designed to prevent peasants from spending a large part of their time in working on their private plots, to the detriment of the collective lands. It was based on the experience of the Soviet Union, where similar rules were introduced in 1939 and later years.

Great efforts were made to popularize courses in the Russian language for Hungarian workers. In 1951 it was claimed that 25,000 had attended. In 1952 the aim was 60,000. (H. S-W.)

Education.—Schools (1951–52): elementary 6,185, pupils c. 1,200,000; teachers 36,800; secondary 405, pupils c. 120,000; technical, pupils 57,000; institutions of higher education 21, students c. 45,000, professors and lecturers 7,200.

Finance.—Budget (1951 est.) revenue 29,623,000,000 forints, expenditure 29,516,000,000 forints; (1952 est.) revenue 42,770,000,000 forints expenditure 42,481,000,000 forints. Monetary unit: forint with official exchange rates of 2.935 forints to the rouble, 33.15 forints to the pound and 11.74 forints to the U.S. dollar.

Foreign Trade.—(1950): Imports U.S. \$265,000,000; exports U.S. \$257,000,000. Main sources of imports (1950): Poland, Czechoslovakia, Rumania and Bulgaria 35.4%; U.S.S.R. 22.7%. Main destinations of exports: four eastern European countries 36.6%; U.S.S.R. 25.7%.

Transport and Communications.—Roads (1951): 15,976 mi. Licensee motor vehicles (Dec. 1950): cars 16,000; commercial 15,500. Railway (1951): 7,100 mi. Air transport (1948): flights 4,447; miles flown 625,800; passengers carried 36,111. Danube shipping (Dec. 1947): merchant vessels 514; gross tonnage 118,717. Telephones (1950): 115,000. Radio receiving set licences (1949): 525,000.

Agriculture.—Main crops (metric tons, 1950): wheat 2,040,000; barley 640,000; oats 220,000; rye 790,000; maize (1948) 2,862,000; potatoes 1,224,000. Sugar, raw value 255,000. Livestock: cattle (1951) 1,700,000; pigs (1951) 4,500,000; sheep (1949) 650,000; horses (1949) 569,000. Food production (metric tons, 1949): milk 1,100,000; butter (1934–38 average) 9,800; factory cheese (1934–38 average) 9,600; meat (export only, 1950) 1,600. Wine production: (1938) 3,259,000 hl. (1951) 3,678,000 hl.

Industry.—Persons employed in all industries: (1950) 600,538; (1951 est.) 989,000. Fuel and power (1950): coal 1,200,000 metric tons; lignite 9,500,000 metric tons; crude oil 490,000 metric tons; electricity 2,360,000,000 kw.hr. Raw materials (metric tons, 1950) pig iron 473,000 steel ingots and castings 1,023,000; bauxite 594,000; aluminum 16,100 cement 923,000.

Hunting: see WILDLIFE CONSERVATION.

Hurdling: see TRACK AND FIELD SPORTS.

Hutchins, Robert Maynard (1899–), U.S. educator. was born on Jan. 17 in Brooklyn, N.Y. He left Oberlin college, Oberlin, O., in 1917 to enlist in the U.S. ambulance corps. Entering Yale university, New Haven, Conn., in 1919, he received his A.B. in 1921 and his LL.B. (*magna cum laude*) in 1925. In 1923 he was appointed

cretary of Yale university and in 1927 dean of its law school. In 1929, at the age of 30, he became the fifth president and, in 1945, the first chancellor) of The University of Chicago.

Hutchins resigned in 1950 as chancellor of the university and a member of its board of trustees to join the Ford foundation as an associate director. His resignation became effective at the end of the university's academic year, June 30, 1951, at which time he was granted a leave of absence from Jan. 1, 1951, to participate in the formulation of the foundation's policies. Lawrence A. Kimpton (*q.v.*) was appointed his successor at the university. Hutchins continued as chairman of the board of editors of Encyclopædia Britannica, Inc.

Hutchins' time was devoted during the year to planning, with the other officers, the policies and programs of the Ford foundation. He gave the Marfleet lectures at the University of Toronto, Can., in March.

Hydrocortisone: see CORTISONE, HYDROCORTISONE AND CORTICOTROPIN.

Hydroelectric Power: see FEDERAL POWER COMMISSION.

Hydrogen Bomb: see ATOMIC ENERGY.

Ibáñez del Campo, Carlos (1877-), president of Chile, was born on Nov. 3 in Linares, Chile. He was educated at the Chilean military school and at the Academy of War. In 1905 he was appointed rector of the national military school of El Salvador. Returning to Chile in 1908, he was successively staff officer and division commander, director of a carabineer school, section chief of the ministry of war and military attaché at Paris. From 1925 to 1927 he was minister of war with the rank of general; in 1927 he became minister of the interior and later that year vice-president of Chile. By this time Ibáñez was *de facto* chief executive of the nation, and elections held in July 1927 confirmed him as president with virtually no limitation on his power. His administration was a mixture of military dictatorship and welfare state, and until 1929 Chile enjoyed great economic prosperity. Ibáñez eventually was forced out of office in a bloodless uprising (July 1931) and went into exile in Argentina. He was an unsuccessful candidate for president in 1938 and in September of that year was arrested for suspected complicity in a *nacista* (nazi) revolt in Santiago. He was sentenced to 20 years in prison but was released within a few weeks and left the country. Later he returned and was elected senator from Santiago. In 1952 he once more announced his candidacy for president on the Nationalist ticket, reputedly with the backing of his long-time friend, Pres. Juan Perón of Argentina. (Chile officially protested on July 26 that the Argentine foreign ministry was intervening in the campaign.) Ibáñez was elected president on Sept. 4, 1952, by a large majority, for the term ending in 1958. He was inaugurated on Nov. 3.

ICC: see INTERSTATE COMMERCE COMMISSION.

Ice Cream: see DAIRY PRODUCTS.

Ice Hockey: see HOCKEY, ICE.

Iceland. An island republic of the north Atlantic, Iceland has an area of 39,768 sq.mi., and a population (1951) of about 145,000. The capital, Reykjavik, is the only large town (pop.: about 60,000). Religion: Lutheran Christian.

President in 1952: Sveinn Björnsson to his death on Jan. 25; Ásgeir Ásgeirsson after Aug. 1 (elected June 29).

History.—An epoch came to an end in Iceland when, on Jan. 25, 1952, Sveinn Björnsson died, at the age of 71. He had headed the island state since 1941, for three years as regent,

then after assumption of legal independence, as president. After a first one-year term he was re-elected by acclamation in 1945 for a four-year term, and again in 1949, the unopposed leader of the nation.

The first real presidential campaign in modern Iceland had no precedent to follow. Not only must a man be chosen, but the country had to decide what the presidency should be—an honorary or an active post, partisan or above party. The issues had not been faced before, and in 1952 they were discussed but not resolved. On June 29, by a dramatically close vote, Ásgeir Ásgeirsson was elected. Although he was director of the Maritime bank in Reykjavik, he was a Social Democrat, a former president of the *althing*, and prime minister from 1932 to 1934. Second in the balloting was Bishop Bjarni Jonsson.

Iceland had become increasingly worried over the problem of controlling its vital fishing waters. It eagerly watched the international court proceedings in the Norwegian-British case about territorial limits at sea and as soon as that case was decided in favour of Norway, Iceland proceeded to act. The government declared a four-mile limit, with the line running across the mouths of bays. The British and other countries interested in these rich fishing areas protested to no avail.

Reforestation continued with the planting of about 700,000 trees and the exchange of forest personnel with Norway. The fishing fleet counted 57,700 tons, and this together with the merchant fleet passed the 100,000-ton figure. One of the worst difficulties was the continuing inflation—the cost of living index was up 55% in two years. (See also INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT.) (F. D. S.)

Education.—Schools (1951-52): elementary 213, pupils 15,116, teachers 692; secondary 55, pupils 4,574, teachers 326; grammar 2, pupils 764, teachers 51; other schools 58, pupils 4,397, teachers 399. University of Iceland: students 680; professors and lecturers 60.

Finance and Banking.—Budget: (1951 actual) revenue 414,500,000 krónur, expenditure 305,100,000 krónur; (1952 est.) revenue 396,200,000 krónur, expenditure 332,400,000 krónur. Public debt (Jan. 1952): 450,900,000 krónur, including foreign debt 197,800,000 krónur. Note circulation (Dec. 1951): 198,000,000 krónur. Monetary unit: króna (plural krónur), with exchange rates of 45.70 Kr. to the pound sterling and 16.32 Kr. to the U.S. dollar.

Foreign Trade.—(1951) Imports 922,100,000 krónur; exports 726,600,000 krónur. Main sources of imports (1951): U.K. 28.8%; U.S. 13.0%; Netherlands possessions in America 9.9%; Denmark 5.4%; Sweden 4.8%; Federal Republic of Germany 4.7%; Spain 4.5%. Main destinations of exports (1951): U.K. 23.4%; U.S. 18.3%; Netherlands 11.5%; Italy 6.2%; Spain 5.4%; Poland 5.2%.

Transport and Communications.—Roads (1951): 7,185 km. Licensed motor vehicles (Jan. 1952): cars 6,420, commercial vehicles 4,214. Shipping (Oct. 1951): vessels of 100 gross tonnage and over 143, total tonnage 83,448; other registered vessels 530, total tonnage 16,786. Fishing fleet: 631 vessels; gross tonnage 57,733. Telephones (Jan. 1952): 21,368. Radio receiving sets (Jan. 1952): 35,882.

Livestock and Fisheries.—Livestock (Jan. 1951): sheep 415,544; cattle 44,535; horses 42,280; poultry 97,219. Fisheries: total catch (1951) 370,655 metric tons. (G. TN.)

Ice Shows: see SHOWS.

Ice Skating. Dick Button, 22-year-old Harvard student from Englewood, N.J., climaxed a brilliant amateur career in 1952 with a sweep of the national, world and Olympic figure-skating championships, and then, on Aug. 28, turned professional. The two-time Olympic winner signed a contract for \$150,000 with the "Ice Capades of 1953" and made his debut at New York's Madison Square Garden on Sept. 11.

After retaining his Olympic laurels and taking world honours for the fifth consecutive time, Button captured the national senior men's championship at Colorado Springs, Colo., in March and in winning that title for the seventh time in a row equalled the record set by Roger F. Turner of Boston, 1928-34.

Tenley Albright, 16-year-old star from Newton Center, Mass., skated off with the women's senior crown. Other United States champions were Lois Waring and Mike McGein, Baltimore, Md., gold dance; Mr. and Mrs. Rogers Chambers, Buffalo,



DICK BUTTON, who retained his world title for men's figure skating at the 1952 winter olympics, shown during the school figures section of the event at Oslo, Nor.

N.Y., silver dance; Carol and Peter Kennedy, Seattle, Wash., senior pair; Ronnie Robertson, Colorado Springs, junior men; Carol Heiss, New York, senior women; Mary Ann Dorsey, St. Paul, Minn., women's novice; Tim Brown, Baltimore, men's novice, and the Broadmoor club, Colorado Springs, senior team.

Ken Bartholomew of Minneapolis shone among American speed skaters, winning national outdoor senior honours for the seventh time and third year in a row at St. Paul. In capturing the trophy, Bartholomew won the 220-yd., 440-yd., three-quarter-mile and two-mile races and scored 160 points. Arthur Longsjö of Pittsfield, Mass., finished as runner-up with 90 points. Longsjö defeated Bartholomew in the 880 and mile tests and also captured the five-mile race in which the champion did not compete.

Barbara Marchetti, Detroit, Mich., repeated as women's senior champion, scoring 120 points compared with 70 for Jeanne Robinson, Detroit, her closest rival. Other national winners were Dick Pelter, West Allis, Wis., intermediate boys; Jean Simon, Chicago, intermediate girls; Jerry Fusek, West Allis, junior boys; Mary Maland, Minneapolis, junior girls; Al Olsen, Chicago, and Ted Miller, Minneapolis (tied), juvenile boys; Mary Novak, Chicago, juvenile girls; David Kahn, Minneapolis, midget boys; Marge Molthen, West Allis, midget girls.

Longsjö and Ray Blum, Nutley, N.J., each tallied 80 points to tie for men's honours in the North American championships at Alpena, Mich., while Barbara Marchetti and Doreen McLeod of Edmonton, Alta., the Canadian champion, shared the women's laurels with 120 markers each. Other victors were Dick Pelter, intermediate boys; Jean Simon, intermediate girls; Gary Lewis, Bay City, Mich., junior boys; Jean Renshaw, Saginaw, Mich., junior girls; Al Olsen, juvenile boys; Mary Novak, juvenile girls; Terry McDermott, Bay City, and Ken Patterson, Detroit (tied), midget boys; and Audrey Ames, Chicago, midget girls. Blum added to his triumphs by annexing the North American indoor speed title at East Lansing, Mich., and Janet Backman of Wilmington, Mass., won the women's award. (See also OLYMPIC GAMES.)

(T. V. H.)

Idaho. A state in northwestern United States, one of the carved from the old Oregon territory, Idaho was admitted as a territory by Pres. Abraham Lincoln in 1863 and became a state on July 3, 1890. Idaho has an area of 83,557 sq. mi. and is known as the "Gem state." Pop. (1950 census) 588,631, a gain of 12.1% over the 1940 census. Under the new urban definition, 42.9% of the total population was classified as urban and 57.1% as rural. Boise, the capital city, with a population of 34,393, is the largest city in the state. Other cities with populations in excess of 10,000 are: Pocatello 26,131; Idaho Falls 19,218; Twin Falls 17,600; Nampa 16,185; Lewiston 12,983; Coeur d'Alene 12,198; Moscow 10,593; and Caldwell 10,487.

History.—State elective officials assumed their offices in Jan. 1951 for four-year terms and all were Republicans except the secretary of state, Ira Masters, a Democrat. Len Jordan was governor; Edson Deal, lieutenant governor; Robert J. Smylie, attorney general; and N. P. Nielson, auditor. Mr. Margaret Gilbert (Rep.) was appointed treasurer in 1952 to fill the term of Mrs. Lela D. Painter, deceased.

An extraordinary session of the Idaho legislature was held Jan. 15-16, 1952, to enact a motor vehicle reciprocity act made necessary to implement features of the ton-mile tax law enacted in the regular session in 1951.

Idaho's largest hydroelectric development went into operation early in Oct. 1952 when the first of four generators began producing electrical energy at Cabinet gorge on the Clark Fork river, a few miles from the Montana state line. Built by the Washington Water Power Co., at a cost of approximately \$460,000,000, this plant would produce more than 200,000 kw.

Education.—Idaho is served by the state university and agricultural college located at Moscow and the Idaho State college at Pocatello. Junior colleges maintained by junior college districts are located at Boise and Coeur d'Alene. Private colleges are College of Idaho at Caldwell, Ricks college at Rexburg and the Northwest Nazarene college at Nampa. Public school enrolment for 1951-52 was 128,192, an increase of 8.5% in three years; 4,812 teachers were employed in them. The superintendent of public instruction in 1952 was Alton Jones.

Social Insurance and Assistance, Public Welfare and Related Programs.—Idaho has two institutions for the mentally ill—one at Orofino and one at Blackfoot; a home for the feeble-minded at Nampa; a school for the deaf and blind at Gooding; an industrial school at St. Anthony; a tuberculosis hospital at Gooding; and a recreational centre at Lava Hot Springs. The state penitentiary erected a new administration building and increased its facilities by the addition of a new cell block, which allowed for 670 inmates. As of Oct. 15, 1952, there were 461 inmates. As of June 1952 there were 10,603 households receiving public assistance in an amount of \$764,748 monthly with an average payment per household of \$72.13. Old-age assistance payments of an average amount of \$50.82 went to 9,247 recipients in June; a total of 5,381 children, 2,107 families received an average payment of \$43.88; 199 blind recipients were paid an average of \$54.68 in that month, and 807 permanent and totally disabled recipients were paid an average of \$52.55.

Communications.—Idaho had in 1952 a total of 40,577.5 mi. of highway with 4,750.2 mi. under the state highway system. The state was served by four transcontinental railroads with a mileage of 2,732. Water transportation to Lewiston was being expanded on the Columbia and Snake rivers. United and Western air lines maintained scheduled east-west and north-south, while West Coast air lines served southern and northern Idaho.

Banking and Finance.—As of Sept. 5, 1952, 37 state banks and their branches had total deposits of \$121,497,798.15 and 64 national banks and their branches had total deposits of \$359,308,394.79.

The state budget appropriation for the biennium 1951-52 was \$38,921,000 from the general fund. Of this amount 41.80% was to go for humanitarian purposes, 46.40% for education and 11.80% for administration and all other expenses.

Idaho is one of the few states that is debt free. On Dec. 15, 1951, the last obligation of \$4,000 was retired.

Agriculture.—Idaho cash farm marketings for 1951 included \$174,260,000 worth of livestock and livestock products; \$64,134,000 of wheat; \$30,608,000 of Idaho potatoes; \$15,590,000 of beans; \$15,100,250 of

Table I.—Principal Crops of Idaho

Crop	Indicated 1952	1951	Average 1941-50
Wheat, bu. (all)	42,352,000	37,968,000	32,160,000
Corn, bu.	2,520,000	1,962,000	1,592,000
Oats, bu.	9,062,000	8,022,000	7,704,000
Barley, bu.	12,654,000	10,432,000	12,058,000
Sugar beets, short tons	1,062,000	1,227,000	1,082,000
Beans, dry, cwt.	2,183,000	2,502,000	2,300,000
All hay, tons	2,604,000	2,281,000	2,372,000
Potatoes, bu.	45,120,000	37,520,000	39,312,000
Apples, bu.	1,596,000	1,610,000	1,673,000

Source: U.S. Department of Agriculture.

sugar beets; \$12,314,000 of hay and \$8,799,000 of alfalfa and clover seed. The total value of all crops sold was \$177,557,000, making a total of \$351,817,000 for both crop and livestock marketings.

Manufacturing.—In 1941, the Idaho Employment Security agency reported 841 employers engaged in manufacturing in Idaho who paid unemployment compensation taxes on an average of 14,905 employees with an annual pay roll of \$20,304,400. For 1951, the agency's report showed 1,036 employers in that same classification with 24,998 employees who were paid \$85,717,012. For 1951 also, the lumber-products industries continued to top the list of manufacturers with an average of 13,200 wage earners and an annual pay roll of \$49,463,288.

In 1950, of \$109,694,000 total values added by manufacture within the state, the lumber-products industry produced \$43,396,000.

(L. B. J.)

Mineral Production.—Table II shows the tonnage and value of those mineral commodities produced in Idaho in 1949 and 1950, listing all

Table II.—Mineral Production of Idaho, 1949–1950

(Short tons, except as noted)

Mineral	Quantity 1950	Value 1950	Quantity 1949	Value 1949
Antimony ore	7,000	\$ 876,000	5,000	\$ 1,053,000
Copper	2,000	876,000	1,000	566,000
Gold (oz.)	80,000	2,788,000	78,000	2,724,000
Lead	100,000	27,007,000	79,000	25,058,000
Pumice and pumicite	94,000	121,000	71,000	105,000
Sand and gravel	4,282,000	3,044,000	3,271,000	2,287,000
Silver (oz.)	16,095,000	14,567,000	10,049,000	9,095,000
Stone	644,000	861,000	1,441,000	1,879,000
Zinc	88,000	24,961,000	77,000	18,986,000
Other minerals . . . . .	...	4,852,000	...	2,539,000
Total		\$79,077,000		\$64,292,000

†Value included with other minerals.

items whose value exceeded \$100,000. Data for 1951 were not yet available. Idaho ranks 1st among the states in the production of silver and zinc, 2nd in lead and 3rd in phosphate rock, and stands 27th in value of output, with 0.67% of the U.S. total.

Illinois. A north central state of the United States, admitted to the union in 1818, nicknamed the "Sucker state," Illinois is sometimes called the "Prairie state." Total area: 56,400 sq.mi., of which 55,935 sq.mi. are land. Pop. (1950 census): 8,712,176. The population increased 10.3% or 814,935 over 1940, when the official census showed 3,957,149 males and 3,940,092 females; 7,504,202 white, 393,039 nonwhite.

Population classed as urban in 1950 was 6,759,271 or 77.6%; rural was 1,952,905 or 22.4%.

Chicago (pop., 1950, 3,620,962) is the largest Illinois city, followed by Peoria (111,856); Rockford (92,927); East St. Louis (82,295) and Springfield (81,628).

History.—The principal offices in the state government were occupied in 1952 by Adlai E. Stevenson, governor; Sherwood Dixon, lieutenant governor; Edward J. Barrett, secretary of state; Ivan A. Elliott, attorney general; William G. Stratton, treasurer; and Benjamin O. Cooper, auditor.

By direction of the Illinois legislature, four proposed amendments to the state constitution of 1870 were submitted to the voters in the November election. Amendments to revise the revenue article to permit classification of property for taxation, but prohibit a graduated state income tax, and to allow sheriffs and county treasurers to succeed themselves failed. Amendments to repeal a limitation on the salaries of certain county officers and permit the general assembly to fix their compensation, and to remove double liability on stockholders of state banks passed.

Education.—The 2,313 public elementary schools employed 33,273 teachers to instruct 947,032 pupils enrolled for the 1952 fall term. In the 685 public secondary schools enrolment reached 320,744 and the faculty totalled 15,171. State aid to schools for the biennium ending June 30, 1953, aggregated \$151,038,000, nearly twice the amount appropriated for the preceding biennium. With the opening of the 1952 fall term, a new state law went into effect fixing minimum annual salaries for teachers in public schools. The scale ranged from \$1,800 for those with less than 60 semester hours of teacher training to \$2,600 for 150 or more semester hours and the master's degree. Vernon L. Nickell was superintendent of public instruction.

Social Insurance and Assistance, Public Welfare and Related Programs.—Gross expenditures under the state's public assistance programs totalled \$133,851,000 in the fiscal year ended June 30, 1952, an increase of \$6,848,000 over the preceding year. The number of persons dependent upon public aid declined from 290,910 to 266,131 in the same period. In the fiscal year closing June 30, 1952, the Illinois public aid commission reported the following number of average monthly recipients of public assistance and average payments to each (preceding year's figures in parentheses): old-age pensions, 115,751, \$49.85 (121,511, \$46.24); aid to dependent children, 82,853, \$31 (84,508, \$27.09); blind assistance,

Table I.—Principal Crops of Illinois

Crop	Indicated 1952	1951	Average, 1941–50
Corn, bu.	515,816,000	491,865,000	436,062,000
Soybeans, bu.	85,701,000	94,562,000	74,342,000
Oats, bu.	124,801,000	133,600,000	141,681,000
Wheat, bu. (all)	44,762,000	33,383,000	27,106,000
Barley, bu.	638,000	868,000	1,652,000
Rye, bu.	600,000	611,000	661,000
Broomcorn, tons	800	1,100	3,000
Hay, tons	4,397,000	4,705,000	3,965,000
Potatoes, bu.	560,000	825,000	1,721,000
Sweet potatoes, bu.	94,000	132,000	240,000
Apples, bu.	1,890,000	3,995,000	3,194,000
Peaches, bu.	1,610,000	224,000	1,787,000
Pears, bu.	158,000	204,000	308,000
Grapes, tons	1,900	2,000	2,900

Source: U.S. Department of Agriculture.

Table II.—Principal Industries of Illinois

Industry	Value added by manufacturing 1950	1949
Machinery (except electrical)	\$1,241,220,000	\$1,161,791,000
Food and kindred products	1,115,998,000	1,054,191,000
Fabricated metal products	896,110,000	641,040,000
Electrical machinery	848,274,000	630,825,000
Primary metal industries	709,746,000	538,358,000
Printing and publishing industries	622,108,000	667,896,000
Chemicals and allied products	558,331,000	471,314,000
Transportation equipment	289,224,000	262,532,000
Apparel and related products	247,214,000	247,544,000
Stone, clay and glass products	206,987,000	188,875,000
Instruments and related products	184,708,000	153,784,000
Paper and allied products	173,723,000	161,431,000
Petroleum and coal products	171,189,000	159,767,000
Furniture and fixtures	168,644,000	131,602,000
Leather and leather products	110,845,000	111,149,000

4,119, \$55.12 (4,296, \$49.26); disability assistance, 2,446, \$57.02 (700, \$47.75); general assistance, 60,988, \$35.65 (80,232, \$30.11). In addition, the state expended \$3,294,000 in the 1951–52 fiscal year for burials of public assistance recipients and aid to medically indigent.

Under the stimulus of defense activities the rise in the level of employment, which had taken place in 1951, continued through the first five months of 1952. The weekly number of unemployment compensation claimants in Illinois during these five months varied from a high of 94,400 to a low of 61,900.

In the state's four penal institutions the average daily population during July 1952 was 8,505, an increase of 156 over the same month of 1951. On July 1, 1952, there were 1,065 inmates of the four correctional institutions compared with 940 on that date in 1951. Thirteen state mental hospitals were treating 46,716 patients on July 1, 1952, while a year prior there were 46,127 under treatment.

Communications.—Exceeding all previous years, \$60,739,000 in highway construction work was placed under contract during the first eight months of 1952 as the state launched its biggest highway restoration program in history. Rehabilitation of 7,400 mi. of the state's 12,000-mi. primary highway system was planned in the ten-year program. All roads combined in the state totalled 125,000 mi., of which 104,000 mi. were rural.

Sixty-nine railroads (62 steam and 7 electric) operated over 15,740 mi. of main track to serve 80% of the communities of the state. More than 100,000,000 mi. were travelled by 122 bus companies certificated in Illinois. Fourteen scheduled air lines served the state. Aeroplane facilities were provided by 165 commercial airports and 401 private-use airports.

Banking and Finance.—There were 894 banks operating in the state on June 30, 1952, 3 more than on the same date of the preceding year. Of this number, 508 were state banks and 386 national banks. State banks on June 30, 1952, showed total deposits of \$3,694,959,916 and total resources of \$3,944,964,838. National banks on the same date had total deposits of \$9,641,504,000 and total resources of \$10,378,469,000.

For the biennium ending June 30, 1953, the legislature voted a budget of \$1,464,401,033 to operate the state government. During the first year of the biennium, receipts amounted to \$578,000,000 while expenditures totalled \$522,000,000. An unencumbered surplus of \$71,000,000 remained in the general revenue fund on June 30, 1952, and the finance department expected a gross surplus in the general revenue fund of \$60,000,000 at the close of the biennium. In the first eight months of 1952, the six major tax sources produced the following amounts (1951 comparative figures in parentheses): sales tax, \$129,066,273 (\$128,286,338); cigarette

Table III.—Mineral Production of Illinois

(Short tons, except as noted)

	Quantity 1950	Value 1950	Quantity 1949	Value 1949
Cement (bbl.)	7,858,000	\$16,920,000	7,977,000	\$16,646,000
Clays	2,302,000	3,243,000	1,957,000	2,707,000
Coal	56,291,000	228,138,000	47,208,000	190,863,000
Coke*	3,591,000	58,141,000	3,196,000	52,558,000
Fluorspar	155,000	6,111,000	121,000	4,622,000
Iron, pig*	6,039,000	258,242,000	4,904,000	204,458,000
Lead (tons)	3,000	737,000	4,000	1,208,000
Lime	367,000	4,465,000	276,000	3,198,000
Natural gas (000 cu.ft.)	13,285,000	1,342,000	12,391,000	1,398,000
Natural gasoline (bbl.)	989,000	3,019,000	905,000	3,533,000
Petroleum (bbl.)	62,028,000	171,820,000	64,501,000	178,670,000
Petroleum gases (bbl.)	2,118,000	3,436,000	2,313,000	4,941,000
Sand and gravel	18,695,000	16,532,000	17,128,000	14,781,000
Sandstone (ground)	263,000	2,278,000	218,000	1,887,000
Stone	17,911,000	21,970,000	17,054,000	20,682,000
Sulphuric acid*	118,000	1,715,000	72,000	1,094,000
Zinc	27,000	7,663,000	18,000	4,503,000
Other minerals		470,000		255,000
Total		\$488,144,000		\$449,894,000

*Values for processed materials are not included in the totals.

tax, \$19,915,796 (\$18,701,074); liquor tax, \$13,705,606 (\$15,828,996); motor fuel tax, \$64,843,087 (\$47,105,216); petroleum inspection tax, \$529,979 (\$517,664); public utility tax, \$15,825,886 (\$14,666,095).

Agriculture.—Corn, the state's biggest crop, was expected to yield 515,816,000 bu. in 1952, an increase over both the 1951 total production and the ten-year average from 1941–50. Estimated production of leading crops for 1952, the total for 1951, and the ten-year average, 1941–50, are shown in Table I.

Manufacturing.—The value added by manufacture to products in Illinois in 1950 was \$7,929,910,000, more than \$1,000,000,000 greater than the 1949 total of \$6,898,999,000. Manufacturing establishments employed an average of 1,154,365 workers during 1950, an increase of 50,392 over the preceding year. Salaries and wages of these employees totalled \$4,037,748,000 in 1950, compared with \$3,697,953,000 in 1949.

The value added by manufacture in major industries in the state in 1950 and 1949 is shown in Table II.

(Ad. B.)

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in Illinois in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Illinois ranks first among the states in the production of fluorspar, and stands seventh in value of mineral output, with 4.12% of the U.S. total.

Illiteracy. By 1952, more than half of mankind still could not read and write. The United Nations Educational, Scientific and Cultural organization continued to prove its usefulness in marshalling available resources to combat the problem of illiteracy throughout the world. This was being undertaken through a two-pronged drive which tried to establish universal, compulsory, free education for all children, at least of elementary school age, and attacked illiteracy among adults on as wide a scale as possible. These two activities were being increased simultaneously.

U.N.E.S.C.O.'s most outstanding efforts in this connection were being made through its regional fundamental education centres. These centres were designed to train teachers and leaders in the best methods of combating illiteracy and its related problems. A centre at Patzcuaro, Mex., served the Latin-American region. Another at Cairo, Egy., was to serve the near east area, and other centres were to be established in the far east and in southeast Asia.

The Chinese Communist government was reported to have formulated plans for a mass education program aimed at wiping out illiteracy in China within ten years. The program called for the eradication of illiteracy in state organs within two years; among industrial workers within three to four years; and among younger peasants within six to seven years. An anti-illiteracy drive had already been launched by the Chinese army. Illiterate soldiers were being taught to read by means of a short-cut phonetics teaching method worked out by an army instructor.

A project for the production of materials for the literacy training of adults was undertaken during the year by the government of Jamaica with the co-operation of U.N.E.S.C.O. It delayed its island-wide attack on illiteracy until the end of the year when the entire graded series of teaching materials was complete and had been adequately tested through experimental use. These materials were then made available for classes of adult preliterate throughout the island.

The efforts which had been made after World War II toward raising the level of literacy in South America were beginning to show results. Typical of the frequent reports of progress in this direction was one from Venezuela which stated that in that country 107,000 men and women had been taught to read and write in the past seven years.

In various places throughout the United States and Canada opportunity for literacy education was made available to adults. Through its special training units, the U.S. department of the army continued its practice of compelling functionally illiterate recruits to learn to read and write up to an acceptable standard.

India's battle against its tremendous problem of illiteracy—a rate still quoted as being between 80% and 90% of its population—was being attacked on a national scale in connection with

a five-year plan. This was augmented by technical assistance through the U.S. Point Four program. Frank Laubach was drafted for work in the huge project to demonstrate that grown people can learn to read and write in a reasonably short time. The Indian army continued its work of teaching illiterate soldiers to read and write.

In western Europe, special measures were being taken to wipe out illiteracy. In Portugal about 60% of the population was reported illiterate, one of the highest percentages on the continent. The ministry of education began to enforce existing laws governing primary school attendance. Where necessary it furnished clothing and warm midday meals. Later, efforts were to be made to provide transportation for school children. It was recognized that the percentage of illiteracy could not be reduced by these steps alone, for much of the illiteracy fell within the adult segment of the population. Older persons were to be taught at least how to read and write. The army began the literacy training of young recruits. Cultural and sports leaders as well as commercial and agricultural corporations were asked to co-operate in the literacy program. To help in preventing a relapse into illiteracy, the ministry of education of the Portuguese government also planned to create more libraries in rural districts. (See also ISLAM.) (E. W. GN.)

I.L.O.: see INTERNATIONAL LABOUR ORGANIZATION.

Immigration and Emigration. Since the end of World War II, the number of entries of aliens and citizens into the United States had grown each year. More than doubling the World War II figure, the volume during the fiscal year ending June 30, 1952, for the first time passed the 100,000,000 mark to reach 107,000,000. Of these entries 97% were alien and citizen border crossers who may have made numerous entries across the Canadian and

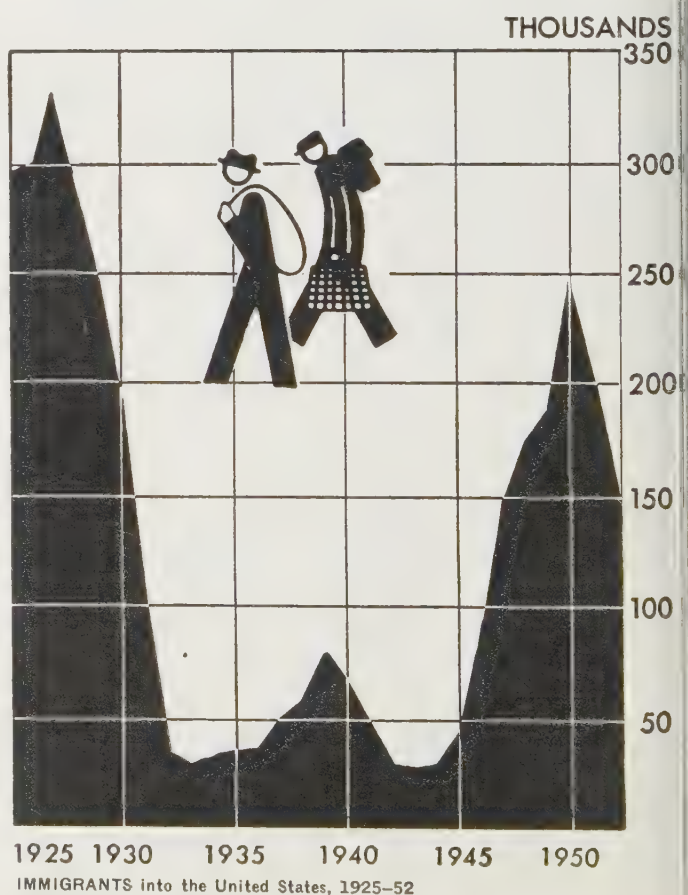


Table I.—Immigrant Aliens Admitted to the United States by Classes and Principal Countries of Birth, Year Ended June 30, 1952

Country or region of birth	Number admitted	Quota	Husbands, wives and children of U.S. citizens	Natives of non-quota countries, their wives and children	Ministers, professors, their wives and children	Other classes
All countries	265,520	194,247	19,315	48,408	877	2,673
Europe	202,884	187,944	11,615	598	616	2,111
Germany	50,283	45,660	3,977	24	43	579
Greece	7,084	5,630	620	7	14	813
Hungary	6,850	6,709	95	5	28	13
Italy	9,306	5,954	2,844	102	70	336
Poland	33,211	32,779	292	38	64	38
United Kingdom	17,631	17,024	257	278	56	16
U.S.S.R.	12,697	12,543	105	14	16	19
Yugoslavia	17,273	16,770	329	7	11	106
Other Europe	48,599	44,875	3,096	123	314	191
Asia	9,428	2,200	7,000	30	181	17
North America	48,092	3,117	343	44,063	46	523
Canada	28,141	6	104	27,692	31	308
Mexico	9,600	—	20	9,541	6	33
West Indies	6,723	2,582	184	3,927	7	23
Central America	2,642	108	14	2,518	—	2
Other North America	986	421	21	385	2	157
South America	3,902	163	31	3,698	5	5
Africa	740	573	147	10	8	2
Australia & New Zealand	416	216	172	6	21	1
Other countries	58	34	7	3	—	14

Source: U.S. Department of Justice Immigration and Naturalization Service.

Mexican borders. The other were crewmen, immigrants and other aliens admitted as visitors, students, government officials and others admitted for temporary periods.

United States Immigrants.—In the fiscal year 1952, the number of aliens admitted for legal permanent residence rose to 265,520, which represented the highest figure since 1929. In the fiscal year 1951 the number admitted was 205,715. The increase was chiefly the result of the admission of 42,786 ethnic Germans under section 12 of the Displaced Persons act of 1948, as amended, and a 45% increase in nonquota immigration of immigrants from western hemisphere countries, alien wives of citizens and others.

When congress limited immigration by means of quotas, it also provided for certain classes of aliens who could be admitted without regard to quotas. The nonquota immigrants may be roughly divided into three groups: (1) geographic (natives of the independent countries of the western hemisphere); (2) professional (ministers and teachers); and (3) wives, children and, in some instances, husbands of United States citizens.

There were 77,196 displaced persons charged to quotas, and 1,982 nonquota displaced persons (chiefly orphans), who were admitted to the United States in the fiscal year 1952. This brought the total number of displaced persons admissions under the Displaced Persons act of 1948 (exclusive of ethnic Germans) to 340,094. Other quota immigrants, including 42,786 ethnic Germans, numbered 117,051. The Displaced Persons act provided that quotas of future years could be mortgaged in order to permit the admission of displaced persons from countries with small quotas. The mortgaging provisions served to bring quota immigration to 194,247, or 39,970 in excess of the established annual quota.

The 71,273 nonquota immigrants were chiefly natives of the independent countries of the western hemisphere and wives of United States citizens. More than one-half of the wives of citizens came from three countries where United States troops were stationed: Germany, Italy and Japan.

Table II.—Nonimmigrants Admitted to the United States, Years Ended June 30, 1950-52

	1952	1951	1950
Total nonimmigrants admitted	516,082	465,106	426,837
Government officials	22,267	20,881	13,975
Members of international organizations	5,137	5,526	5,010
Temporary visitors for business	86,745	83,995	67,984
Temporary visitors for pleasure	269,606	230,210	219,810
In transit	77,899	72,027	68,640
Returning residents	44,980	44,212	40,903
Students	8,613	7,355	9,744
Treaty traders	791	850	766
Other nonimmigrants	44	50	5

Source: U.S. Department of Justice Immigration and Naturalization Service.



MIXED REACTIONS of a group of displaced children from Europe, who were resettled in the U.S. in 1952. They are shown at pier 60 in New York harbour, straining for a glimpse of things beyond the restricting fence

The principal countries of birth of immigrants and their class of admission under immigration laws are reported in Table I.

Nonimmigrants.—Nonimmigrants are aliens who enter the United States for temporary periods, or resident aliens of the United States returning from a temporary stay abroad. The figures in Table II do not include such special groups as agricultural labourers, border crossers and crewmen.

Emigrants and Nonemigrants.—Emigrants are, by definition, aliens who depart from the United States after residence of a year or more in the United States, with the intention of remaining abroad. During the fiscal year 1952, there were 21,880 emigrants, including 9,691 who returned to Europe, 2,441 to Asia, 2,760 to Canada, 2,227 to the West Indies and 1,984 to South America.

Nonemigrants are temporary visitors leaving the country after a stay of less than a year, or resident aliens who are leaving for a temporary visit abroad.

During the year ended June 30, 1952, 487,617 nonemigrants departed from the United States. There were 49,972 alien residents who departed for temporary residence abroad. Two treaty traders had return permits. The remainder, 437,643, entered as tourists, transients, government officials, and others who were leaving the United States after stays of a few days to a year's duration. (See also ALIENS; CENSUS DATA, U.S.; LAW.)

(A. R. Mv.)

Other Countries.—During Dec. 1951 and early 1952, there was a general review of migration in various countries and organizations. In Great Britain the Empire Settlement bill was opposed in parliament as inadequate, though the proposed amendment was withdrawn. The bill extended the British contribution (up to £1,500,000 a year toward settlement schemes)

to the end of May 1957. The expenditure in 1951-52 was estimated at £560,000. A Gallup poll taken in Dec. 1951 revealed that 31% of persons questioned wished to emigrate, mainly to commonwealth countries. The average decrease of the British population by emigration over the previous 20 years was 200,000 a year. The Intergovernmental Refugee organization went officially out of existence on Dec. 31, 1951. Since Jan. 1947 the organization had assisted 1,446,700 refugees, of whom 706,177 were resettled: 155,529 in the United States, 117,085 in Palestine and Israel and 113,986 in Australia. A Provisional Intergovernmental committee was set up at the end of 1951 to arrange for the movement of migrants from Europe. Seventeen nations were represented and it was planned to move about 137,500 persons. Of these 90,000 were to be Germans, including 35,000 ethnic Germans (*Volksdeutsche*).

Canada.—There were 194,391 immigrants in 1951. Legislative provision was made to assist the immigration in 1952 of 100,000 to 150,000 persons. At the end of 1951 there were about 20,000 persons in the U.K. awaiting passage to Canada.

Australia.—Since the end of World War II 600,000 immigrants, including 180,000 displaced persons, had been accepted into the country. Nevertheless, only 0.6% of the working population was unemployed during the first quarter of 1952. The immigration quota for 1952 was reduced to 80,000, or one-third of the total average over the previous four years. Within the new quota 25% would be immigrants from the U.K. paying their own passages and 25% from the U.K. on assisted passages, with a similar division of immigrants from other countries.

Germany.—The pressure toward emigration from western Germany was greatly increased by a constant influx from eastern Germany: official figures for May, June and July 1952 were 5,318, 8,541 and 13,000, but the normal average was 200 a day (73,000 a year). Inquiries at the West German Emigration office totalled 52,412 covering 81,031 persons. The main receiving countries were the United States, Canada, Venezuela, Brazil and Chile.

Israel.—David Ben-Gurion stated that he aimed to build up the population of Israel to 2,000,000 by the end of 1953. Because of the state of trade, distress in the work villages and difficulties with untrained and unsuitable settlers, plans for 1952 restricted immigration to 120,000 on a selective basis according to the productive capacity of applicants. (B. L. B.)

Imports: see INTERNATIONAL TRADE; TARIFFS. See also under various countries.

Income, Distribution of: see WEALTH AND INCOME, DISTRIBUTION OF.

Income and Product, U.S. According to preliminary estimates, the U.S. national income in 1952 amounted to \$290,500,000,000 and the gross national product to \$344,500,000,000. Both of these comprehensive measures of the value of the nation's output were almost 5% above their previous highs established in 1951.

Higher prices and increased volume each accounted for roughly one-half of the 1951-52 rise in the dollar value of national output. The further increase in real production enabled the nation not only to add to its military strength but to sustain the flow of consumer products at the high 1951 level. The volume of goods and services produced in the United States in 1952 was larger than in any other year—significantly higher than in the peak war year 1944 and twice as high as in 1929. On a per capita basis (that is, after allowance for population increase over the period), real national output in 1952 was more than 50% greater than in 1929.

Increased production, employment and earnings in 1952

raised the level of personal incomes. As indicated by preliminary data, personal incomes aggregated \$267,600,000,000 for the year, 5% more than in 1951.

Quarterly estimates revealed a gradual uptrend in national income and product during 1952 in the setting of a generally stable economic situation. Essentially, this was a continuation of the relative steadiness in over-all production and prices that had characterized the economy since the spring of 1951.

Some exception to this generalization was afforded by the several weeks' work stoppage in the steel industry during mid-summer. Its effects on the over-all business situation were principally manifest in statistics for the third quarter. These showed some unevenness in the flow of economic activity (as measured by monthly personal income) and dampened sales of hard goods throughout the economy. National defense outlays, business expenditures for new plant and equipment and consumer spending for durables, mainly automobiles, were all affected. Business activity recovered quickly, however, and by September stood well above the quarterly average, with producers operating against a substantially increased backlog of unfilled orders.

The strength and achievement of the economy in 1952 were evident not only from national income and product measures but in the improved relationship between supply and demand as the year progressed. Despite the growth in national defense outlays, the relaxation or elimination of numerous anti-inflationary controls was found possible. These included, among others, regulation X (housing credit), regulation W (consumer credit) and National Production authority controls on a long and expanding list of critical materials.

Meaning of Income and Product Measures.—National income, as measured by the U.S. department of commerce, is the sum of the net earnings of labour and property arising from the current production of goods and services by the nation's economy. It measures, therefore, the total factor cost of the goods and services produced by the economy. It includes income in kind as well as money income, but such receipts as relief, unemployment benefits and capital gains are excluded since they do not represent earnings derived from current productive activity. The national income consists of compensation of employees, the net income of unincorporated businesses, corporate profits, net interest and the rental income of persons.

Personal income is the current income received by persons from all sources, including transfers from government and business but excluding transfers among persons. Not only individuals (including owners of unincorporated enterprises) but non-profit institutions and private trust and welfare funds are classified as persons. Personal income differs from national income by the inclusion of transfers (such as relief, veterans' pensions and government interest disbursements) which are not in return for current productive services, and by the exclusion of earnings (social insurance contributions, undistributed corporate income and corporate income taxes) which are not actually received by persons in the current period.

Gross national product or expenditure is the market value of goods and services produced by the nation's economy, before deduction of depreciation charges and other allowances for business and institutional consumption of durable capital goods. Other business products used up by business in the accounting period are excluded. The gross national product consists of consumers' purchases of goods and services; the gross output of capital goods retained by private business, including the change in inventories; net foreign investment; and the goods and services purchased by governmental entities.

Gross National Product.—Purchases of goods and services by federal, state and local governments in 1952 totalled \$77,-

Table I.—Gross National Product or Expenditure

(In 000,000,000s of dollars)*

Item	1952†	1951	1950	1939
Gross national product	344.5	329.2	284.2	91.3
Personal consumption expenditures	215.5	208.0	194.3	67.5
Durable goods	25.6	27.1	29.2	6.7
Nondurable goods	118.4	113.5	102.8	35.3
Services	71.5	67.3	62.4	25.5
Gross private domestic investment	51.0	58.5	50.3	9.9
New construction	23.4	23.3	22.9	4.9
Producers' durable equipment	25.7	24.9	22.0	4.6
Change in business inventories	1.8	10.3	5.5	.4
Net foreign investment . . . . .	.1	.1	-2.3	.9
Government purchases of goods and services	77.9	62.6	41.9	13.1
Federal	54.8	40.9	22.2	5.2
State and local	23.1	21.7	19.7	7.9

*Detail will not necessarily add to totals because of rounding.

†Preliminary; estimated from data for first three quarters.

Source: U.S. Department of Commerce (except 1952).

900,000,000, exceeding the 1951 total by more than \$15,000,000,000. (See Table I.) Nearly all of this large increase was accounted for by federal purchases for national defense. These amounted to about \$47,000,000,000 in 1952, two-fifths larger than in 1951. The share of gross national product absorbed by defense purchases in 1952 was 14%, compared with 10% in 1951 and 4½% in the second quarter of 1950, just prior to the attack on Korea.

The bulk of the expansion in national defense expenditures in 1952 occurred in hard goods—planes, tanks and other military equipment—and in military construction. Military and defense-related civilian pay rolls, together with the closely associated expenditures for food, clothing and other soft goods, showed relatively small increases and stabilized over the course of the year.

Personal consumption expenditures for goods and services totalled \$215,500,000,000 in 1952, about \$7,500,000,000 more than in 1951. Although much of this rise reflected higher prices, it is nonetheless significant that the actual flow of consumer products matched—in fact, slightly exceeded—the high 1951 volume despite expanding rearmament and the diversion of productive resources to national defense.

Consumer spending was substantially firm throughout 1952. Outlays for nondurable goods and for services changed little from quarter to quarter, and for the year as a whole registered moderate increases. Outlays for durable goods, at \$25,600,000,000 in 1952, were \$1,500,000,000 below the 1951 total; but, apart from some irregularity of movement in the latter half of 1952 occasioned by the effects of the steel strike on expenditures for automobiles, the aggregate of such outlays was relatively stable after the spring of 1951.

Among the major elements of gross national product, the only decline occurred in the area of private investment. Gross private domestic investment in 1952 amounted to \$51,000,000,000, down sharply from the 1951 record total of \$58,500,000,000.

The drop was centred in inventory accumulation as fixed investment was maintained at the high 1951 level. The value of

Table II.—National Income by Distributive Shares

(In 000,000,000s of dollars)*

Item	1952†	1951	1950	1939
National income	290.5	277.6	239.2	72.5
Compensation of employees	189.7	178.9	153.4	47.8
Wages and salaries	180.6	169.9	145.6	45.7
Private	148.2	141.2	123.4	37.5
Government	32.4	28.7	22.2	8.2
Supplements to wages and salaries	9.2	9.0	7.8	2.1
Income of unincorporated enterprises and inventory valuation adjustment	42.7	41.8	37.0	11.3
Business and professional	27.5	26.2	23.7	6.8
Farm	15.3	15.6	13.3	4.5
Rental income of persons	9.7	8.9	8.2	3.5
Corporate profits and inventory valuation adjustment	41.4	41.6	34.8	5.8
Corporate profits before tax	41.0	42.9	39.6	6.5
Corporate profits tax liability	23.7	24.2	18.4	1.5
Corporate profits after tax	17.3	18.7	21.2	5.0
Inventory valuation adjustment . . . . .	.4	-1.3	-4.8	-7
Net interest	7.0	6.4	5.8	4.2

*Detail will not necessarily add to totals because of rounding.

†Preliminary; estimated, in general, from data for first three quarters.

Source: U.S. Department of Commerce (except 1952).

Table III.—National Income by Industrial Origin

(In 000,000,000s of dollars)*

Industry	1952†	1951	1950	1939
All industries, total	290.5	277.6	239.2	72.5
Agriculture, forestry and fisheries	19.9	20.0	17.4	6.1
Mining	5.7	5.8	5.0	1.6
Contract construction	15.5	14.5	12.4	2.3
Manufacturing	90.2	88.9	74.5	17.9
Wholesale and retail trade	51.0	47.9	42.8	12.1
Finance, insurance and real estate	24.4	22.4	21.1	8.2
Transportation	15.5	14.8	13.2	4.5
Communications and public utilities	8.5	8.1	7.2	2.9
Services	25.2	24.4	22.3	8.1
Government and government enterprises	34.7	30.8	23.5	8.8

*Detail will not necessarily add to totals because of rounding.

†Preliminary; estimated, in general, from data for first three quarters. Source: U.S. Department of Commerce (except 1952).

new private construction was stable, with both residential and the aggregate of other types of construction virtually unchanged from 1951. Producers' purchases of durable equipment increased slightly. On an industrial basis, business outlays for new plant and equipment rose markedly from 1951 to 1952 in the defense and defense-supporting sectors but declined in most others, such as food manufacturing, textile mill products, mining and trade and service.

Concentrated in the latter part of the year, business inventory accumulation in 1952 amounted to \$1,800,000,000, contrasted with \$10,300,000,000 in 1951. From the abnormally high rate of \$16,300,000,000 reached in the second quarter of 1951, inventory accumulation fell off sharply in the last two quarters of 1951, and was reduced to negligible proportions in the first half of 1952. Although other factors also were operative, this decline was mainly a voluntary and systematic downward adjustment. Stimulated by a slack in the rate of consumer spending following the buying waves which occurred after the outbreak of war in Korea, it was a key factor in the easing of inflationary pressures in the economy.

Distributive Shares of National Income.—Almost all of the increase in national income from 1951 to 1952 occurred in wages and salaries. (See Table II.) Advances in rental income of persons and net interest—two of the smaller components—also exceeded the over-all rate, but were not large in absolute amount.

On the other hand, both corporate earnings (corporate profits and inventory valuation adjustment) and noncorporate business earnings declined in relative importance. For nonfarm unincorporated business in the aggregate, income rose only slightly from 1951 to 1952, whereas in the corporate sphere and in farming it was about the same as in the previous year. However, as can be seen from the table, corporate profits in 1952 were somewhat lower than in 1951 when adjustment is not made for changing inventory valuation. This adjustment is required for national income purposes to eliminate inventory profit or loss, which is not part of earnings arising in production.

Wages and salaries increased by \$11,000,000,000 or more than 6% from 1951 to 1952, reaching a total of \$181,000,000,000. Almost \$4,000,000,000 of this rise was in government pay rolls (federal civilian and military and state and local combined), which advanced 13% to \$32,400,000,000. The pay-roll rise in the large private industry sector, from \$141,000,000,000 to \$148,000,000,000, amounted to 5%. Higher average hourly earnings, rather than changes in employment or in length of the work week, were mainly responsible for it.

National Income by Industries.—Estimates of national income by industries are shown in Table III. By far the largest income rise among the industries, both in absolute and relative terms, occurred in government. Within the private industry sector, the 1952 income total was little changed in agriculture and mining and moderately higher in the other industries. On balance, there was considerably less divergence in movement among the major industrial sectors in 1952 than in the previous year.

Table IV.—Personal Income and Disposition of Income

Item	(In 000,000,000s of dollars)*			
	1952†	1951	1950	1939
Personal Income	267.6	254.1	226.3	72.6
Wage and salary disbursements	180.7	169.9	145.6	45.7
Other labour income	4.5	4.2	3.8	.5
Proprietors' and rental income	52.4	50.6	45.2	14.7
Dividends	9.4	9.0	9.0	3.8
Personal interest income	12.0	11.3	10.5	5.4
Transfer payments	12.8	12.4	15.1	3.0
Less: Personal contributions for social insurance	3.9	3.4	2.9	.6
Less: Personal tax and nontax payments	33.3	29.1	20.8	2.4
Federal	30.0	26.1	18.1	1.2
State and local	3.3	3.0	2.7	1.2
Equals: Disposable personal income	234.3	225.0	205.5	70.2
Less: Personal consumption expenditures	215.5	208.0	194.3	67.5
Equals: Personal saving	18.8	17.0	11.2	2.7

*Detail will not necessarily add to totals because of rounding.

†Preliminary; estimated from data for first three quarters.

Source: U.S. Department of Commerce (except 1952).

Disposition of Personal Income.—Estimates of personal income and its disposition among taxes, consumer spending and personal saving are provided in Table IV. As already noted, personal income increased 5% from 1951 to 1952. Disposable income—personal income less personal tax payments—totalled \$234,000,000,000 in 1952, 4% above the 1951 total. This rise was closely in line with the relative increases in consumer prices and population, so that real disposable income per capita was about the same in the two years.

With consumers continuing to exercise considerable buying restraint, the rate of personal saving in 1952 remained relatively high. It amounted to roughly 8% of disposable income, about the same as in 1951 but double the average of 4% for the period 1947-49. (See also BUDGET, NATIONAL; BUSINESS REVIEW; DEBT, NATIONAL; WEALTH AND INCOME, DISTRIBUTION OF.) (C. F. Sz.)

Income Tax: see TAXATION.

India. This republican self-governing member of the Commonwealth of Nations in southern Asia is a union of states. Areas and populations of the states are shown in the table.

Language: two main groups, Aryan or northern (including Hindi, used by approximately 47% of the total population; Bengali, 8%; Marathi, 7%; and Gujarati, 5%) and Dravidian or southern (including Telugu, 9%; Tamil, 7.5%; and Kanarese, 4.4%). English is the official language of the union, to be displaced by Hindi in the Devanagari script by 1964. Religion: Hindu (about 80%), Moslem, Christian, Sikh, Buddhist, Parsee, Jewish, etc. Chief towns (pop.: first figure, 1941 census; second figure, 1951 census): New Delhi* (cap., 93,960; 279,063); Delhi* (521,849; 914,634); Calcutta† (2,108,891; 2,549,790); Bombay (1,489,883; 2,840,011); Madras (777,481; 1,429,985); Hyderabad (739,159; 1,085,074); Ahmedabad (591,267; 788,310); Kanpur or Cawnpore (487,324; 704,536); Amritsar (391,010; 320,465); Lucknow (387,177; 497,594); Nagpur (301,957; 449,441). President in 1952: Rajendra Prasad; prime minister: Jawaharlal Nehru (q.v.).

History.—*The Elections.*—The year began with what was perhaps its most outstanding achievement, the successful conduct of elections to the union and state legislatures. Representative assemblies and the principle of election were not new to most parts of India, but the introduction of universal franchise in a country of long distances and, in many places, of difficult terrain, where illiteracy prevailed on such a large scale, was obviously a colossal experiment—and the registration of 176,000,000 voters created the largest electorate in history.

*New Delhi and Delhi are counted as two cities. Together they had in 1951 a total population of 1,193,697 and ranked as the fourth largest urban agglomeration of India.

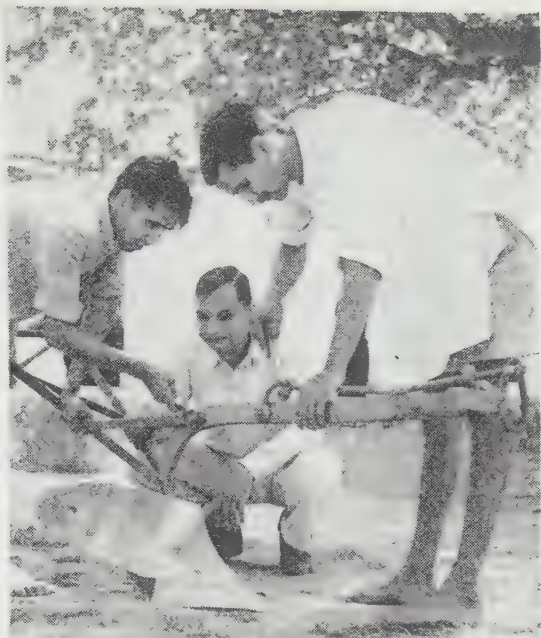
†Greater Calcutta, including Howrah and suburbs, had in 1951 a total population of 3,490,281.

Name of State	Area (sq.mi.)	Population	
		1941 census	1951 census
Part A (governor's) states			
Assam	54,084	7,593,037	9,129,442
Bihar	70,368	36,545,575	40,218,916
Bombay	115,570	29,506,968	35,943,559
Madhya Pradesh.	130,323	19,631,615	21,327,898
Madras	127,768	49,847,508	56,952,332
Orissa	59,869	13,767,988	14,644,293
Punjab	37,428	12,593,628	12,638,611
Uttar Pradesh	112,523	56,516,622	63,254,118
West Bengal	29,476	21,837,295	24,786,683
Total part A states	737,409	247,840,236	278,895,852
Part B (rajpramukh) states			
Hyderabad	82,313	16,338,534	18,652,964
Madhya Bharat	46,710	7,151,502	7,941,642
Mysore	29,458	7,329,140	9,071,678
Patiala-E. Punjab (Pepsu).	10,099	3,424,060	3,468,631
Rajasthan	128,424	13,282,105	15,297,979
Saurashtra	21,062	3,430,892	4,136,005
Travancore-Cochin	9,155	7,492,893	9,265,157
Total part B states	327,221	58,449,126	67,834,056
Part C (centrally administered) states			
Ajmer	2,425	588,960	692,506
Bhopal	6,921	785,322	838,107
Bilaspur	453	110,336	127,566
Coorg	1,593	168,726	229,255
Delhi	574	917,939	1,743,992
Himachal Pradesh	10,600	935,359	989,437
Kutch	8,461	500,800	567,825
Manipur	8,620	512,069	579,058
Tripura	4,049	513,010	649,930
Vindhya Pradesh.	24,600	3,353,019	3,577,431
Total part C states	68,296	8,385,540	9,995,107
Part D territories			
Andaman and Nicobar Islands	3,143	33,768	30,963
Sikkim	2,745	121,520	135,646
Grand total	1,138,814	314,830,190	356,891,624

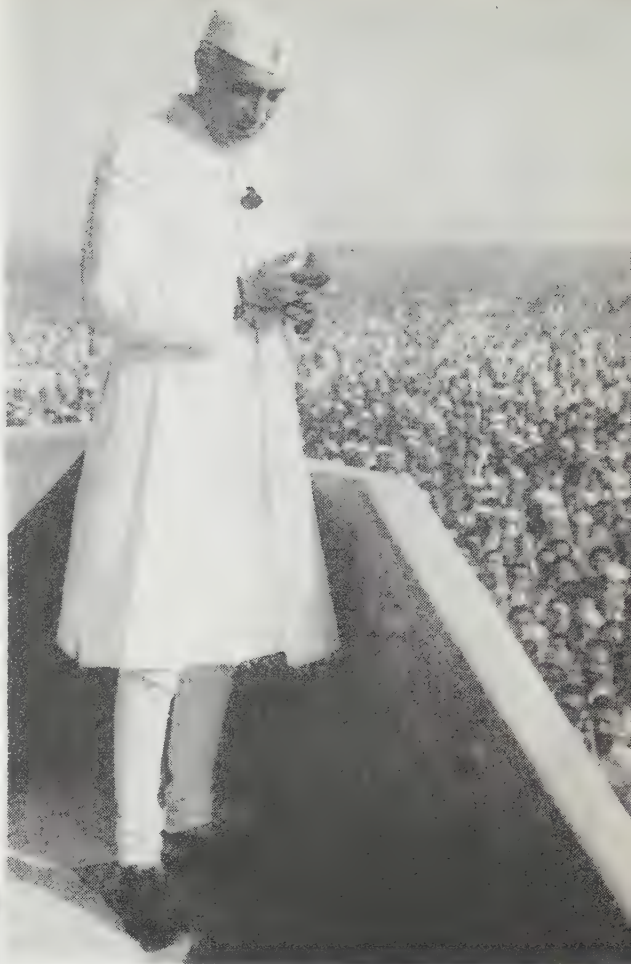
Source: India Record (London, April 25, 1951); provisional totals for the census held on March 1, 1951. No census was ever taken in Kashmir (q.v.), because of special conditions prevailing there, and in the part B tribal areas of Assam, which were not included in any former census and whose population was estimated as 560,000.

About 225,000 polling stations were established and 56,000 presiding officers supervised the balloting. Voting began in Oct. 1951 and the last results were announced in March 1952. Fourteen all-India parties contested. Opposition to the Indian National Congress, the party in power, proud of its past record and claiming to be a progressive centre party, came mainly from the Socialists and the Communists on the left, and the Jan Sangh and allied groups, the representatives of orthodox Hinduism, on the right. There was also the newly formed Kisan Mazdoor Praja party (merged in August with the Socialist party), composed mainly of former Congressmen who claimed to abide by the ideals which they said Congress had abandoned on assuming office. More than 17,000 candidates contested 4,505 seats. Every available medium of propaganda was used, but on the whole there was moderation and restraint, and 107,580,000 voters went to the booths. Polling averaged 40% in the towns and 60% in the villages, and the women displayed a keen interest. In the house of the people, Congress gained 363 seats, polling 44.85% of the total vote, the Communists 23 seats, the Socialists 12, the K.M.P. 9, the Jan Sangh 3, other splinter groups 39 and independents 40. In all the 22 state assemblies and in the 3 electoral colleges of Kutch, Manipur and Tripura Congress was returned as the largest single party and in every state except the Patiala and East Punjab States Union was able to form a ministry. This success was largely the achievement of Jawaharlal Nehru, who undertook an election tour of more than 25,000 mi. and addressed mammoth open-air meetings in almost every part of the country. The reactionary and communal parties experienced an utter failure. In the council of states, Congress gained 146 seats. Rajendra Prasad was elected president, defeating the other four candidates by a huge majority, and Sarvepalli Radhakrishnan was unanimously elected vice-president. On May 13 the new parliament met and Nehru announced his new cabinet of 15 members.

Food.—The chief problem confronting the government was clearly food. In 1951 there was no increase in production or in procurement, and the new year began with a failure of crops



Above: AGRICULTURAL STUDENTS examining a steel plow head which was helping to modernize Indian agriculture in 1952 by replacing the centuries old wooden plow. The students were being trained at a school in Etawah, United Provinces, to do practical teaching among farmers on how to increase crops and improve livestock



Above: JAWAHARLAL NEHRU speaking at the formal opening of a dye and drug plant at Parnera, India, in 1952. It was a joint Indian-American enterprise, and its products would be used by industries in both nations



Above: RAT TRAPS ready for distribution in Calcutta in 1952. An important part of a campaign to prevent bubonic plague in India was to exterminate rats carrying the flea-borne disease

Below: MOSLEM WOMEN arriving at a polling place in Delhi, India, to vote in the parliamentary elections of 1952. They are shown drawing up in a cycle-ricksha, veiled in their traditional burka



in Uttar Pradesh, Rajasthan, Kutch and the Punjab. There was drought for the fifth successive season in certain districts in Madras, and floods ravaged Bengal, Assam and Bihar. But even so the government decided in February to plan for the future rather than for the immediate present, and to withdraw subsidies for all food grains except milo, which was consumed mainly by the poor. Fortunately India, for the first time, had a large stock of food grains which was continuously increased by imports (from 1,330,000 tons in January to 3,700,000 tons in June). This, along with a good wheat harvest, improved procurement, and heavy rains in south India in May enabled a drastic revision of policy in June. Madras, Bihar, Uttar Pradesh, Saurashtra, Hyderabad and Mysore abolished rationing and price control but established fair-price shops as a precautionary measure. In Bengal free movement of grains between districts was allowed, but the government of India assumed the responsibility for feeding Calcutta.

In August the agricultural situation was literally darkened by an invasion of locusts which infested 60,000 sq.mi. in Rajasthan and slowly moved eastward.

Foreign Aid.—The necessity of increasing agricultural production led to a willingness on the part of India to receive financial assistance from the United States. Pursuant to the general agreement for technical co-operation signed on Dec. 28, 1950, a specific agreement was signed on Jan. 5, 1952. The U.S. agreed to provide \$50,000,000 to be jointly administered by the two governments and used for the execution of agreed projects, the government of India making supplementary funds available. During the year 11 operational agreements were signed, allocating the money given by the U.S. and providing for the expenditure of \$86,000,000 by the Indian government. The projects covered the supply of fertilizers and iron and steel, locust control, soil and forest research, desert control, development of marine fisheries and ground-water irrigation, malaria control, training of village-level workers, development of community projects and assistance in the execution of river valley schemes. Particular emphasis was laid on the community development projects to which the government of India allocated nearly 85% of its expenditure. Fifty-five project areas were chosen, each containing about 300 villages. The objective was to develop, within three years, the material and human resources of the area through the co-operative endeavour of the inhabitants with active assistance from the state. Work began in June in 44 project areas. An extensive survey was carried out and field operations commenced in October. To hasten these projects the Ford foundation gave \$1,200,000 for a program of rural extension service and a further \$1,873,485 for training centres for community development. Five such centres were started and a community project covering 100 villages begun in Pepsu. India and the U.S. together undertook the largest rural development program in the world.

Foreign Policy.—This co-operation had no obvious political implications, but it decreased Indian suspicions of the United States and fostered an appreciation of U.S. motives. Relations with the other powers continued to be cordial. The Chinese government sold 100,000 metric tons of rice to India. An Indian cultural delegation reached China in April and during their tour of six weeks were received everywhere with enthusiasm. In January, the U.S.S.R.'s sudden intervention—for the first time in four years—in the Kashmir dispute before the U.N. Security council awakened curiosity in India as to Soviet motives, but there was no sequel. The Soviet Union offered to sell industrial equipment to India, and in April Joseph Stalin accorded the retiring ambassador, Sarvepalli Radhakrishnan, the unusual courtesy of an interview. On June 9 India, which had refused to sign the multilateral treaty concluded at San Francisco,

signed a bilateral peace treaty with Japan, waiving all reparation claims and restoring Japanese property located in India. Japan was to be accorded "most favoured nation" treatment among countries not in the commonwealth, and an agreement regulating fishing rights was to be reached later. Trade agreements were signed with western Germany, Italy, Norway, Austria and Finland, and a loan, the amount to be settled later, was offered to Nepal.

India continued to be an active member of the United Nations. It persevered in its efforts to evolve a lasting settlement in Korea, supported the moves to bring the Tunisian problem before the Security council and to summon a special session of the general assembly for consideration of the problem and, when these efforts failed, raised the matter at the annual session of the general assembly in October. Regarding the treatment of Indians in South Africa, India suggested in January the appointment of a commission of three members to help India and Pakistan reach an agreement with the South African government. The general assembly accepted the suggestion, but the South African government refused to act on it and no advance was made. In October India brought before the general assembly, as an independent issue, the agitation of the non-Europeans in South Africa.

In Ceylon, the general elections in May revived the issue of the voting rights of the 800,000 Indian residents. Many of them were disenfranchised by the decision of the government of Ceylon that only those Indians who had registered themselves as citizens and taken the oath of allegiance could vote. The government of India refused to raise the question before the U.N. but requested the government of Ceylon to mitigate the injustice done to those taken unaware by the suddenness of the elections. The government of Ceylon refused to amend the law but relaxed the rules pertaining to registration.

Relations with Pakistan formed the chief source of concern. In May the International Bank for Reconstruction and Development sponsored talks in Washington, D.C., between engineers of the two countries about the utilization of the waters of the Indus, but with no result. In June India complained to the International Civil Aviation organization about Pakistan's refusal to grant direct air access to Afghanistan. Pakistan insisted on restricting the free movement of persons between East Bengal and India, and a passport system came into effect on Oct. 15. In August a trade pact was signed, but it was more an assurance that trade would not be discontinued than any advance on the existing position. Coal and jute, the two most important commodities of trade between the two countries, were beyond its purview.

Kashmir.—Above all there was the question of Kashmir. In January Frank Graham, the U.N. mediator, reported to the Security council that India had agreed to withdraw an additional 7,000 troops and Pakistan had accepted a proportionate reduction: the points still at issue were the time and scope of demilitarization and the quantum of forces to remain thereafter, and the time for the formal introduction of the plebiscite administrator. Graham suggested that the most practical means of demilitarization would be a continuous co-ordinated process leaving at the end on both sides the smallest possible number proportionate to the number at the time of the cease-fire. This proposal, however, granting equal status and military parity to Pakistan, was unacceptable to India. That country was ready to withdraw the bulk of its forces, but insisted on keeping a sufficient number to safeguard Kashmir from foreign invasion and internal disturbances. The U.N. extended the period of Graham's mission and he visited Delhi and Karachi in March. He said he had found a general lessening of tension, and both countries had withdrawn their troops from the border.

But he reported that he could make no further headway without the help of the plebiscite administrator, as further demilitarization would affect the prerequisites of a plebiscite. India agreed to withdraw unconditionally one division of 18,000 men, but Pakistan contended that even then India's forces would greatly exceed her own. In May Graham resumed negotiations and after preliminary discussions with the delegates of the two countries at Lake Success convened a conference of ministers at Geneva, Switz., in August. The discussions lasted two weeks but led to no agreement.

The dispute with Pakistan and the pledges given to the U.N. gave Kashmir a special—and somewhat anomalous—position among the states of India. Alone among the member states a national movement grew up there, and in July the government of India allowed it to elect its head, to fly its own flag alongside and subordinate to the national flag, to impose restrictions on Indian citizenship and the fundamental rights guaranteed by the constitution and to give restricted application to the powers of the president and the supreme court. Foreign affairs, communications and defense were the responsibility of the union government; residuary powers were vested in the state.

Home Affairs.—The duty of the government to maintain law and order was emphasized by some of the events of the year. Communal animosity was always beneath the surface and ready to show its angry face at the slightest provocation. Minor riots broke out in Delhi in May and in Uttar Pradesh in August. In Saurashtra and Rajasthan some of the dispossessed princes and estate-holders gave tacit encouragement to violence and robbery, and throughout India the Communist party encouraged discontent and agitation. In the elections they had polled only 4,712,009 votes (4.45% of the total), but they made up in organizational efficiency what they lacked in numerical strength. Now avowedly wedded to parliamentary methods, they yet had a long record of terrorist endeavour and, on their own confession, were still in possession of arms. To curb all these elements the government secured from the new parliament a renewal of the Preventive Detention act till the end of 1954.

Planning and Production.—In July 1951 was published the draft five-year plan, envisaging a development expenditure on public account of Rs. 17,930,000,000, with emphasis on irrigation and power projects and an increase in agricultural productivity. In March 1952 it was revised to become a six-year plan, with a public expenditure of Rs. 23,337,000,000, of which more than a quarter was allocated to agriculture and irrigation and power projects and another quarter to the development of communications. (See also PAKISTAN; TIBET; UNITED NATIONS.) (S. GL.)

Education.—Recognized schools (1949-50): primary 206,270, pupils 17,450,000, teachers 517,585; secondary 19,705, pupils 4,718,000, teachers 195,820; vocational 48,730, pupils 1,395,000, teachers 24,413. Unrecognized schools 8,947, pupils 362,000, teachers 10,553. Universities 28, students 351,000, professors and lecturers 18,730.

Finance and Banking.—Budget (1951-52 est.) revenue Rs. 4,011,400,000, expenditure Rs. 3,754,300,000; (1952-53 est.) revenue Rs. 4,250,000,000, expenditure Rs. 4,062,000,000. National debt (March 1952) Rs. 25,874,000,000. Currency circulation (Aug. 1952) Rs. 11,008,000,000. Scheduled bank deposits (Aug. 1952) Rs. 615,000,000. Gold and foreign exchange (Aug. 1952) U.S. \$1,984,000,000. Monetary unit: rupee, with an exchange rate of Rs. 13.33 to the pound sterling and Rs. 4.775 to the U.S. dollar.

Foreign Trade.—(1951) Imports Rs. 8,648,000,000, exports Rs. 7,840,000,000. Main sources of imports (1951-52): U.S. 30%; U.K. 16%; Pakistan 12%; Iran 3%. Main destinations of exports: U.K. 26%; U.S. 18%; Pakistan 6%; Australia 6%. Main imports: grains, pulses and flour 27%; raw cotton 16%; machinery and vehicles 17%. Main exports: cotton yarns and manufactures 8%; jute manufactures 39%; tea 13%.

Transport and Communications.—Roads (1950): 245,000 mi. Licensed motor vehicles (Dec. 1951): cars 145,290; commercial vehicles 125,383. Railways (1952): 33,343 mi. Traffic, first-class railway (April 1, 1951, to March 31, 1952): passenger-miles 39,030,200,000; freight ton-miles 28,965,900,000. Shipping: merchant vessels, 100 gross tons and over (July 1951) 183; total tonnage 455,329; vessels with cargo in external trade (net registered tons, 1951) clearances 7,682,000. Air transport (1951): passenger-miles 264,658,000; cargo ton-miles 12,459,000; mail

carried (tons) 3,206. Telephones (1951): 168,397. Radio licences (1951) 566,500.

Agriculture.—Main crops (metric tons, 1951): barley 2,362,000 (1952 est.) 2,141,000; maize (est.) 2,017,000; rice 20,269,000 (1952 est.) 20,562,000; wheat 6,590,000 (1952 est.) 7,020,000; grain 3,766,000 (1952 est.) 3,919,000; potatoes 1,700,000; sugar (raw value) 5,616,000 (1952 est.) 5,895,000; coffee 200,000; tea 300,000; tobacco 256,000 (1952 est.) 214,000; cottonseed (est.) 1,214,000; peanuts 3,437,000 (1952 est.) 3,037,000; linseed (est.) 380,000 (1952 est.) 300,000; rapeseed (est.) 179,000; sesame seed 500,000; cotton (bales) 2,926,000 (1952 est.) 3,041,000; jute (bales) 3,301,000 (1952 est.) 4,678,000. Livestock (1951): buffaloes 42,854,000; other domestic cattle 130,298,000; sheep 39,975,000; pigs 4,173,000; goats 47,121,000; chickens 65,625,000; other domestic animals 3,478,000. Fisheries: total catch (1949) 513,764 metric tons.

Industry.—Index of industrial production, June 1952 (1946=100), was 118, compared with 116.7 in June 1951. Fuel and power (1951): coal 34,858,000 metric tons; electricity 5,870,000,000 kw.hr.; crude oil (1950) 252,000 metric tons. Raw materials (metric tons, 1951): pig iron 1,853,000; copper (refined) 7,190; lead (refined) 900; aluminum (smelter) 3,900; manganese ore (1949) 656,000; rubber 17,400; salt (1950) 2,600,000; gold (1950) 188,000 fine oz. Manufactured goods (1951): cement 3,251,000 metric tons; cotton yarn 588,500,000 yd.; cotton fabric 3,811,000,000 m.; (1950) jute manufactures 850,000 metric tons; sheet glass 9,600,000 sq.ft.; paper and board 111,000 metric tons; cars and trucks 14,600; bicycles 104,000; radio receivers 44,500.

India, French: see FRENCH INDIA.

India, Portuguese: see PORTUGUESE OVERSEAS TERRITORIES.

Indiana. An east north central state of the United States, popular name, "Hoosier," Indiana was admitted to the union Dec. 11, 1816, as the 19th state. Total area of the state is 36,291 sq.mi., including 86 sq.mi. of inland lakes and rivers. The population of the state according to the 1950 census was 3,934,224, a gain of 14.8% from 1940; 59.9% of the population was defined as urban. Capital: Indianapolis (pop. 1950 census, 427,173), the largest city. Other cities: Gary (133,911); Fort Wayne (133,607); Evansville (128,636); South Bend (115,911); Hammond (87,594); Terre Haute (64,214); Muncie (58,479); East Chicago (54,263); Anderson (46,820).

History.—The general assembly did not meet in 1952. Demands for a special one-day session to simplify voting procedures for servicemen were refused by Gov. Henry F. Schricker. Other state officers for the year remained the same as in 1951: John A. Watkins, lieutenant governor; Leland L. Smith, secretary of state; William L. Fortune, treasurer; Frank T. Millis, auditor; J. Emmett McManamon, attorney general; and Wilbur Young, superintendent of public instruction. Party conventions in June chose for gubernatorial candidates Democrat John A. Watkins and Republican George N. Craig. Henry F. Schricker, Democrat, entered the race for U.S. senator against William E. Jenner, Republican. The centennial of the Indiana state fair was celebrated Aug. 28 to Sept. 6 and enjoyed an unusually prosperous ten-day session, establishing new attendance records. On Sept. 28, 1952, the Larue D. Carter Memorial hospital, the state's first specialized institution for screening of mental illnesses, was dedicated. Construction of the \$5,000,000 unit of the Indiana University Medical centre was begun in 1948.

Education.—The number of public schools in the state in 1952 was approximately 2,550. Enrolment in the elementary schools was 409,712, with 14,595 teachers. Enrolment in the junior high schools was 111,108, with 1,858 teachers. Enrolment in the high schools (grades 9-12) was 173,607, with 10,084 teachers. Parochial schools had an enrolment of 71,702. For the year 1951-52 the state appropriated \$58,000,000 for the support of schools, in addition to the sums provided by local units of government. The state provided \$22,033,500 for the operating expenses of the four state colleges. There were 64,599 enrolled in 38 Indiana colleges and universities in 1951-52.

Social Insurance and Assistance, Public Welfare and Related Programs.—In 1951-52 the state's welfare program cost \$39,261,347.71 of which \$19,236,045.53 was furnished by federal funds, \$9,586,226.04 by state funds and \$10,439,076.14 by county funds. Old-age assistance cost \$22,505,972.94, blind assistance \$926,697.84 and aid to dependent children \$7,562,510.68. In addition, child welfare cost \$2,368,145.02 from state and county funds. Receipts of the state for unemployment insurance for the year ending June 30, 1952, were \$30,386,498.52. Benefits paid out were \$18,714,453.24.

In 1952 the state maintained nine institutions for mental patients including an epileptic village; ten homes, hospitals and schools; and four penal and correctional institutions. As of June 30, 1952, inmates of mental institutions totalled 14,323 and of penal correctional institutions, 6,926.

Communications.—The total mileage of state highways in 1952 was

Table I.—Principal Crops of Indiana

	Indicated 1952	1951	Average 1941-50
Corn, bu.	227,750,000	241,415,000	215,425,000
Wheat, bu.	39,470,000	23,529,000	29,828,000
Oats, bu.	50,698,000	50,875,000	47,212,000
Soybeans, bu.	33,322,000	36,448,000	27,718,000
Potatoes, bu.	2,600,000	3,360,000	4,348,000
Barley, bu.	621,000	494,000	1,120,000
Hay, all, tons	2,464,000	2,674,000	2,536,000
Tobacco, lb.	13,485,000	13,850,000	11,929,000
Apples, bu.	1,148,000	1,806,000	1,403,000
Peaches, bu.	472,000	72,000	507,000

Source: U.S. Department of Agriculture.

Table II.—Manufacturing in Indiana

	Employees 1952	1951	Wages 1951 (in thousands of dollars)	Value added by manufacture 1951
Total manufactures	568,300	557,208	\$1,935,641	\$3,832,892
Food	43,900	40,052	113,264	336,179
Apparel	16,900	17,817	35,764	56,223
Furniture	23,700	24,232	69,546	114,776
Printing	18,000	17,537	59,211	104,087
Chemicals	19,300	17,231	72,211	268,653
Petroleum and coal products	17,200	17,733	69,681	167,695
Rubber	17,300	14,733	49,033	83,056
Stone	22,500	20,180	62,989	136,673
Transportation equipment	108,600	92,609	365,791	619,922
Primary metal industries	92,500	86,061	326,947	627,491

10,616, with county roads totalling 74,769 mi. The state highway expenditure for roads amounted to \$26,831,870.66 during the fiscal year 1951-52. Steam railroad first-line trackage measured approximately 6,600 mi. There were 90 mi. of electric railways. The estimated number of telephones in the state on Dec. 1, 1951, was 1,062,346. There were 113 commercial airports, 4 military airports, 98 personal landing fields and 2 seaplane bases in the state as of Oct. 1, 1952.

Banking and Finance.—On Oct. 1, 1952, there were 360 state banks and trust companies with 77 branches. On June 30, 1952, the total resources of these banks were \$1,673,308,699.53. Deposits totalled \$1,557,904,067.90. There were 125 national banks and 42 branches on June 30, 1952. Their midyear resources amounted to \$2,073,962,000 and deposits totalled \$1,941,767,000. State savings and loan companies numbered 161 and their assets were \$254,974,945.54 as of Dec. 31, 1951. The state's 71 federal savings and loan associations listed assets amounting to \$362,135,000 as of Dec. 31, 1951.

Agriculture.—The year 1952 was a better than average year for corn, wheat, oats, soybeans and tobacco, although in some cases the 1952 estimates fell below the figures for 1951.

Manufacturing.—Since 1950 census figures were released only limited manufacturing statistics had been compiled by state agencies. Total wages and value added by manufacturing figures were not available for 1952. The first column in Table II represents estimates of all persons gainfully employed as of June 1952. (E. Dr.)

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in Indiana in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Indiana ranks 17th among the states in the value of its mineral output, with 1.41% of the U.S. total.

Table III.—Mineral Production of Indiana

Mineral	1950 (Short tons, except as noted)		1949	
	Quantity	Value	Quantity	Value
Clays	1,159,000	\$ 1,396,000	1,023,000	\$ 1,198,000
Coal	19,957,000	79,302,000	16,550,000	66,988,000
Coke*	8,256,000	138,881,000	7,533,000	122,528,000
Iron, pig*	7,013,000	297,569,000	6,028,000	248,700,000
Petroleum (bbl.)	10,699,000	29,530,000	9,696,000	26,860,000
Sand and gravel	9,723,000	7,516,000	8,887,000	6,695,000
Stone	6,995,000	20,686,000	6,332,000	15,228,000
Other minerals . . . . .	. . . . .	28,202,000	. . . . .	24,056,000
Total . . . . .	. . . . .	\$166,632,000	. . . . .	\$141,025,000

*Values for processed materials are not included in the totals.

Indians, American. No official estimate of the Indian population in the United States was compiled in 1952. The figures of 400,000 Indians in the United States and 35,000 Indians, Eskimos and Aleuts in Alaska had been used in official documents of the bureau of Indian affairs for several years.

The year 1952 saw a continuing effort in the administration of Indian affairs to find ways by which the responsibility of the federal government for the protection and welfare of the Indian people could be reduced. The effort was not designed to diminish the protective legal devices set forth in treaty and statutory provisions or to lessen the welfare services provided for Indians. Rather, the purpose was to seek adequate substitute federal or state agencies or Indian community organizations to which these responsibilities might be transferred.



WATER COLOUR of an Indian tribal dance painted by Merton Numkena, a Hopi Indian, aged 16. It was exhibited at the San Francisco Museum of Art in 1952, with a collection of art work by Hopi, Navaho, Havasupai and Apache Indian children, aged 6 to 18

As a principal means of exploring this objective of reducing the federal function in Indian affairs administration, a division of program was established within the bureau of Indian affairs. This division would work with Indian leaders in their communities and with bureau personnel in the formulation of plans designed to improve the economic status of the Indians and a step-by-step withdrawal of the bureau from the supervisory role which it had played in the management of their affairs.

In the case of the Indians of the state of California and the numerous small bands under the former Grand Ronde-Siletz agency of western Oregon, planning for federal withdrawal advanced to the point of introducing legislation to provide necessary authority. The California bills (S. 3005, H.R. 7490 and H.R. 7491) would accomplish complete federal withdrawal in from three to five years, while the legislation for the Oregon Indians would complete the same process within one year. Hearings were held on these bills in the 82nd congress, but action was not completed.

Transfer of Indian children to public schools and the turning over of federal school plants to public-school districts continued to be emphasized. Plans for transferring about 25 federal Indian schools had advanced to the stage where it was expected that formal action could be completed during fiscal year 1953. In Alaska, where the bureau operated 92 day schools and 3 boarding schools, a long-term plan was developed by which all of these schools would be transferred to the territorial school system by 1960.

None of the 62 hospitals and 10 outpatient dispensaries operated by the bureau was transferred out of its jurisdiction during the year, but public law 291 (approved April 3, 1952) authorized such transfers, and it also authorized the admittance of non-Indian patients in Indian service hospitals in areas where other hospital facilities were not available. The bureau

also obtained an increase of funds for contracting with hospitals outside the Indian service for the health care of Indians.

Law enforcement was another field in which the bureau sought, through consultations with Indian tribes and state authorities, to lessen its administrative responsibility. Bills were introduced in congress, with bureau sponsorship, to transfer civil and criminal jurisdiction on Indian reservations to the states of California, Minnesota, Nebraska, Oregon, Washington and Wisconsin. Final action was deferred.

An important modification of a long-standing regulation governing Indian trust property was effected during the year. The modification would permit Indians to mortgage lands held in trusteeship by the secretary of the interior, and thus for the first time to become eligible for loans from the Farmers Home administration, the Veterans administration and other lending agencies which require the holding of land as security. It was estimated that Indians were obtaining credit at the rate of \$20,000,000 per year from sources other than the bureau of Indian affairs. The loan program conducted by the bureau during the year 1952 had outstanding loans of \$21,000,000, an amount approximately equal to the nonbureau credit volume.

In an important decision affecting Indians prosecuting claims against the United States, the court of claims reversed the Indian Claims commission (in *Ernest Risling et al. as the Representative and on the Relation of the Indians of California v. United States*) and held that it was the intention of congress in passing the Indian Claims Commission act to permit groups of Indians other than tribes or bands to present claims under the act. (D'A. Mc.)

Indochina. A country of southeast Asia bounded north by China, west by Burma and Thailand and south and east by the South China sea, Indochina is divided into three associated states of the French union. Areas and populations are:

	Area (sq.mi.)	Population (1936 census)	(1948 est.)
Vietnam	126,608	18,972,000	22,663,000
Tonkin (Bac-Ky)	44,660	8,700,000	9,851,000*
Annam (Trung-Ky)	56,974	5,656,000	7,184,000*
Cochin-China (Nam-Ky)	24,974	4,616,000	5,628,000
Cambodia	69,866	3,046,000	3,748,000
Laos	89,320	1,012,000	1,169,000†
Total	285,794	23,030,000‡	27,580,000

*1943 estimate. †1947 estimate. ‡Including 326,000 Chinese and 42,000 Europeans; in 1946 there were only 26,000 Europeans, including 23,000 French and *assimilés* (Eurasians with French citizenship).

Population: Vietnam, mainly Annamites; Cambodia, Cambodians or Khmers; Laos, Thais; southern highlands of Annam and Laos, Mois (backward Indonesians akin to Bornean Dayaks); northern highlands of Laos and Tonkin, tribes of various origins (Man, Meo, Kha); 75% of the Indochinese population lives on the coastal plain; i.e., on 10% of the total area, the Red river delta (Tonkin) and the Mekong delta (Cochin-China) being among the world's most densely populated areas. Language: Vietnam, mainly Annamese; Laotians speak a Thai dialect different from that of Siamese proper. Religion: Vietnam, mainly Confucian; Cambodians are Buddhist; Mois, pagan. Chief towns (pop., 1949 est.): Saigon, capital of Vietnam, with seaport of Cholon (1,700,000); Hanoi (166,000); Haiphong (92,000); Phnom-Penh, capital of Cambodia (128,950); Vientiane or Vientchan, capital of Laos (13,700). Rulers and commissioners in 1952: Vietnam: ruler, Bao Dai; high commissioner, Jean Letourneau; Cambodia: ruler, King Norodom Sihanouk; commissioner, Pierre Risterrucci; Laos: ruler, King Sisavang Vong; commissioner, Miguel de Pereira.

History.—On Jan. 11, 1952, Gen. Jean de Lattre de Tassigny, to whose energetic year of leadership the Franco-Vietnamese forces owed their recovery after the reverses of 1950, died at

Neuilly, near Paris, after a short illness. During Jan.-Feb. 1952 the battle for Hoabinh continued. The Viet Minh harassed the Franco-Vietnamese supply line to Hoabinh so that 18 battalions had to be used to protect them, and the Viet Minh were able meanwhile to reinfiltate into the Red river delta with three divisions. The Franco-Vietnamese troops withdrew from Hoabinh (Feb. 22) and engaged the Viet Minh forces in the delta. Fighting and mopping up there lasted three months.

On Jan. 23 Jean Letourneau, the French minister in charge of relations with Indochina, left for Saigon on a visit of friendship to the associated states. On April 1 he was made high commissioner in succession to General de Lattre, remaining a member of the French cabinet. Gen. Raoul Salan was appointed commander in chief of the armed forces in Indochina. The new high commissioner visited Washington, D.C., in June and reported, on his return to Paris, that deliveries of U.S. aid to Indochina were to be accelerated, that by the beginning of 1953 all material allocated for that year would have been assured and that, because of the expansion of the Vietnamese army, some French units would be withdrawn from Indochina in 1952. Gen. Nguyen van Hinh was appointed chief of staff of the Vietnamese army by Bao Dai (March 8). In the early months of 1952 the strength of the French expeditionary army in Indochina was estimated at 173,000 and that of the Vietnamese forces (regulars and irregulars) at 112,000. The Viet Minh were estimated to have 350,000 troops in the field, nearly half of whom were in regular formations including five organized divisions. Aid from China was being furnished to the Viet Minh through technical advisers, arms and training facilities in south China.

Political developments inside Vietnam in 1952 were marked by the resignation of the prime minister, Tran Van Huu, in June, and the formation by his successor, Nguyen van Tam, a former chief of police and minister of the interior, of a "national coalition" of 12 ministers (6 from north Vietnam, 5 from south Vietnam and 1 from central Vietnam). The new prime minister announced a political program, the principal features of which were: the formulation of a budget (the first since the creation of the Vietnam state); an agricultural reform project; the formation of a provisional national council as an interim step prior to the holding of elections for a parliament; the introduction of a labour code; and a proposed law to allow the formation of trade unions. The budget envisaged an expenditure of 8,600,000,000 piastres in 1952 of which nearly 60% was to be on the armed forces. The relative economic weakness of Vietnam was clearly illustrated by the fact that the proportion which it would contribute to the total would be about 51%. French financial help and United States economic aid would provide most of the remainder. In addition France was to send aid in kind to Vietnam worth 2,700,000,000 piastres and the United States was to provide military help worth 600,000,000 piastres. Vietnam's contribution to the military budget (1,750,000,000 piastres or 37%) was, however, a considerable increase on its past provision. In July and August a seven-point land reform program was announced which was to fix maximum rents for land; to set up an agricultural bank with a capital of 50,000,000 piastres for financing the purchase of land up to ten hectares per family from landlords by land-starved peasants; to provide for the development of peasant co-operatives; and to institute technical services for agriculture. On Sept. 1 the new national council met for the first time. It consisted of 30 appointed members drawn from the three regions of Vietnam and from among officials, professional men and industrialists, and was to have consultative functions. A month earlier the prime minister had announced that early in 1953 this provisional body would be replaced by a national assembly brought into being

by indirect elections—the elected village councils choosing electoral colleges which, at province level, would elect representatives for the national assembly. (See also *ARMIES OF THE WORLD*.) (D. A. SN.)

Education.—Schools (1947): primary 679, pupils 264,816; secondary 37, teachers 302, pupils 12,105. Technical and higher educational institutions 32, teaching staff 101, students 2,101.

Finance.—Budget (1950 actual): expenditure, excluding cost of military operations, 1,385,000,000 piastres. Monetary unit (common to all three states): piastre = 17 metropolitan francs. U.S. \$1 = 350 metropolitan francs in 1952.

Foreign Trade.—Imports (1951): 6,276,000,000 piastres; exports (1951) 2,784,000,000 piastres. Principal exports: rubber, rice, pepper and pimentos, maize, kapok, coal.

Transport and Communications.—Serviceable roads (1950): 7,000 km. Motor vehicles (1950): 29,700. Ships entered (Saigon-Cholon, 1950): 854. Aircraft landed (1950): 822. Railways (1950): 72,000,000 passenger-kilometres; 130 freight ton-kilometres. Telephones (1949): 9,129. Radio receiving sets (1949): 27,000.

Agriculture.—Main crops (metric tons, 1948, except as indicated): rice (1949) 4,600,000; sugar cane 200,000; sugar (raw) 18,000; cassava 35,000; dry beans 21,000; peanuts 5,000; cottonseed 1,000; coffee 312,000; tea 1,000; tobacco 8,200; cotton ginned 1,000; rubber (1949) 43,700. Livestock (1948-49): horses 13,000; cattle 1,682,000; pigs 2,258,000; sheep 20,000; goats 26,000; buffaloes 1,290,000. Meat production (1948): 42,000 metric tons.

Industry.—Production (metric tons, 1949): coal 499,000; tin concentrates 60,000; salt 114,000.

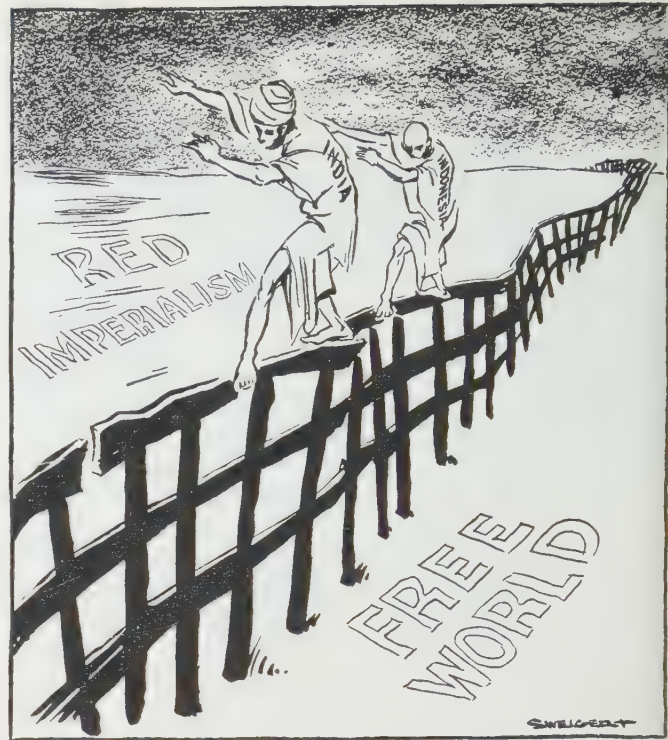
Indonesia. An Asian republic (former Dutch East Indies, except Dutch New Guinea), Indonesia consists of two groups of islands: (1) Java and Madura; (2) Sumatra, Borneo, Riouw-Lingga archipelago, Banka, Billiton, Celebes, Molucca archipelago and Lesser Sunda Islands. Area (excluding Dutch New Guinea): 583,479 sq.mi. Pop. (mid-1951 est.): 76,500,000; two-thirds live on Java. Language: Bahasa Indonesia, an adaption of Malay, was being propagated as the official language; 25 major languages and c. 250 dialects were spoken. Religion: Moslem c. 90%, Christian 3.4%, Hindu 1.4%. Chief towns (pop., 1951 est.): Jakarta (cap., 2,800,000); Jokjakarta (1,848,886); Surabaya (714,898); Bandung (659,213); Semarang (310,942); Surakarta or Solo (266,365). President in 1952: Achmed Sukarno; prime ministers in 1952: Sukiman Wirjosandjojo and (from April 1) Wilopo.

History.—The general situation in 1952 was marked by impending crises, financial and economic in the first place, but spreading to other sectors of public life as well. In his address on Independence day (Aug. 17) President Sukarno himself mentioned a loss of faith in democracy and in the government, a crisis of internal security and a crisis of morality in the public service.

The first acute difficulties, however, arose over a matter of international policy. In January the minister for foreign affairs and the U.S. ambassador had reached agreement on U.S. assistance to Indonesia on the basis of the Mutual Security act. The news soon set in motion a strong opposition in parliament and in the press, preoccupied by vague fears that such assistance might detract from Indonesia's policy of neutrality between the western democracies and the soviet bloc. On Feb. 23 this opposition forced the Sukiman cabinet to resign.

At that time negotiations between Indonesian and Dutch delegations had been going on for several months at The Hague for a general revision of the 1949 agreements and about the status of Dutch New Guinea, which territory the Indonesian government still desired to annex. The resignation of the cabinet caused an indefinite suspension of these talks. The program of the new Dutch cabinet that took office in September, as reflected in the queen's speech at the opening of the parliamentary sessions, indicated that the Netherlands was no longer prepared to consider Indonesian claims to New Guinea, and this made the success of further negotiations on an amiable settlement of the other questions between the two countries doubtful.

A new Indonesian cabinet formed by Wilopo took office on April 1, based like those before on a coalition of the Moslem



"DIFFICULT FENCE TO WALK," a 1952 cartoon by Sweigert of the *San Francisco Chronicle*

(Masjumi) party and the Nationalists, with a sprinkling of members from smaller groups, including this time the Socialist party. Though the Mutual Security agency deal was replaced by an arrangement for aid via the U.S. Technical Cooperation administration based on the Point Four program, the new minister for foreign affairs inherited from his predecessor another irksome problem, viz., the ratification of the San Francisco peace treaty with Japan, which Indonesia had signed, though other Asian nations indulging in neutrality, like India, had abstained. After a period of many months during which the matter was left dormant, the political mood appeared to change and eventual ratification looked more likely. The news which broke in September that Indonesia had applied for participation in the Colombo plan for southeast Asia sponsored by the British Commonwealth countries was another indication of a more co-operative trend toward the western nations.

It appeared that both the sanguine expectations about a higher standard of life and the suspicions against western influence which accompanied the revolution slowly began to make place for a more realistic outlook in this third year of Indonesian independence. Various unfavourable prospects made such a reorientation urgent. The internal security situation deteriorated in some areas, such as west Java, where armed gangs sometimes operated in strengths of several hundreds, and south Celebes. In other parts the opposite was true, and there martial law was partially withdrawn. Labour unrest in the agricultural and urban industries reappeared, and strikes flared up in spite of the compulsory mediation prescribed by law. Such conflicts were partly promoted by the Communist-led federation of labour unions, though the general tactics of the Communist party for the time being followed a nationalist rather than a revolutionary trend.

The general financial and economic difficulties of the state overshadowed these anxieties. While the "Korea boom" lasted, some reserves in the form of gold and foreign exchange had been laid up and government indebtedness to the central bank had been redeemed to a considerable extent; these reserves proved useful when the recession set in. The foresight thus displayed

by the government had been extended neither to restraint in the purchasing policies abroad of the service departments nor to timely scaling-down of the huge bureaucracy. The bills for these omissions weighed heavily on the financial scales of 1952 and a budgetary deficit of about 4,000,000,000 rupiah was expected on a total expenditure of 12,800,000,000 rupiah.

About 35% of the Indonesian revenue consisted of customs receipts, and customs duties and excise accounted for 65% of tax revenue. These figures indicate the close relation of Indonesia's finances, as of an exporting country of raw materials, to the price levels in world markets. The reduction in values of its main exports (rubber, tin and copra) which began in 1951 consequently upset the balance. Faced with these developments, the government embarked in August on a determined "austerity" policy, by penalizing all but the bare necessities of life through levies of varied severity on imports of luxury goods. Simultaneously a campaign for increased production was launched. The fact that Indonesia was no longer able, as it had been before World War II, to export rice or even to feed its own increasing population led some experts to advocate concentration of the main effort on agriculture. Others, however, put the emphasis on planned industrialization. In between these divergencies, the vital part of western private enterprise in the country's economy inevitably drew more sympathetic attention than hitherto. The necessity of attracting additional foreign investments led the government to consider a firm and liberal investment policy. It remained to be seen to what extent the government could succeed in this program. The willingness of successive Indonesian cabinets to yield in these matters to parliamentary moods and press opinions bordered on weakness; the more so because no elections had ever been held and the parliament consisted of groups of which none was sure of its measure of political support among the people. The growing realization that things were not yet going well in this respect caused the lingering political crisis to which the president alluded, and it looked as if only the general elections, to take place in 1953, could bring about the necessary change.

(W. G. P.)

Education.—Schools (1950): primary 23,700, pupils 4,174,031, teachers 72,891; secondary 1,250, pupils 165,399, teachers 7,500; Chinese 681, pupils 162,315, teachers 3,421. Teachers' training colleges 397, students 21,023. University education: faculties 14, students 3,238.

Finance and Banking.—Budget: (1950 est.) ordinary revenue 6,414,000,000 rupiah, ordinary expenditure 7,798,000,000 rupiah; (1951 est.) ordinary revenue 7,530,000,000 rupiah, ordinary expenditure 7,806,000,000 rupiah. Short-term national debt (Aug. 1952) 2,100,000,000 rupiah. Total national debt (Dec. 1950) 6,086,000,000 rupiah. Currency circulation (March 1952) 3,434,000,000 rupiah. Gold reserves (Aug. 1952) U.S. \$280,000,000. Bank deposits (March 1952) 1,948,000,000 rupiah. Monetary unit: rupiah with a basic selling exchange rate (Oct. 1952) of 10.64 rupiah to the pound sterling and 3.81 to the U.S. dollar.

Foreign Trade.—(1951) Imports 3,064,000,000 rupiah, exports 4,664,000,000 rupiah. Main sources of imports (1951): U.S. 20%; Japan 19%; the Netherlands 12%. Main destinations of exports: Malaya and Singapore 34%; the Netherlands 21%; U.S. 17%; U.K. 6%. Main imports: textiles 34%; rice 9%; machinery 13%; metals and manufactures 8%. Main exports: rubber 42%; petroleum and products 20%; copra 8%; tin 7%. Volume of exports, 1951 (1948=100): rubber 184; tin 95; copra 217.

Transport and Communications.—Main roads (1948): 2,400 mi. Licensed motor vehicles (Dec. 1950): cars 20,000; commercial vehicles 19,000. Railways (1950): 3,960 mi.; passengers 105,000,000; goods carried 5,316,000 metric tons. Shipping regularly serving Indonesia (1947): merchant vessels 154; gross tonnage 757,000. Air transport (1950): passenger-miles 92,000,000; cargo ton-miles 4,000,000. Telephones (1951): 43,000. Radio receiving sets (1951): 150,000.

Agriculture.—Main crops (metric tons, 1951, except as noted): rice, paddy (Java and Madura only) 5,470,000; maize (Java and Madura, 1950) 1,850,000; sweet potatoes (Java and Madura) 1,365,000; cassava (1950) 7,465,000; sugar, raw value (Java and Madura) 427,000; peanuts (1950) 416,000; palm kernels (exports, 1950) 32,400; soya beans 286,000; copra (exports) 303,000; palm oil (exports) 58,100; tobacco (Java and Madura, 1949) 10,000; tea (1950) 35,300; coffee (estates only, 1950) 10,000. Index of agricultural production, 1949 (1934-38=100): 83. Livestock (1950): sheep 2,334,000; cattle 3,618,000; pigs 1,254,000; horses 616,000; buffaloes 2,773,000; goats 7,474,000. Fisheries: total landings (1948) 472,000 metric tons; men employed 258,000; boats 25,000.

Industry.—Fuel and power (metric tons, 1951): coal 861,000; crude petroleum 7,440,000. Raw materials (metric tons, 1951): tin concentrates 31,200; natural rubber 817,000; bauxite (1950) 678,000.

Industrial Health. Small plant health, safety and medical programs attracted unusual attention during 1952. The U.S. department of labour amended and strengthened its manual of health and safety practices with which manufacturers must comply in carrying out the terms of federal contracts. A publication issued by the public health service described successful small plant health programs and was intended to encourage the adoption of similar activity elsewhere. In anticipation of increased demand, medical organizations refined existing methods of short-term training for service as part-time industrial physicians.

The president's Commission on Health Needs of the Nation cited industrial health as defective in certain important aspects, and in panel discussions called for corrective action. Deficiencies were noted in the administration of workmen's compensation, in safety and health legislation, in in-plant preventive medical programs, in the extent of coverage by existing medical care prepayment plans, and in research, and recommendations were made as to how these obstacles could be overcome. The Brookings institution issued a comprehensive report on health resources, sections of which were based on a survey recently completed by the National Association of Manufacturers. Compared with previous findings by this same organization, the record of improvement made by member establishments was regarded as a remarkable example of private initiative in the industrial health field.

Union health and welfare programs continued to develop among hotel, building-maintenance, teamster and laundry workers, following the example previously set by the garment workers and miners. The soft coal miners' health and welfare fund made plans for three memorial hospital associations in Kentucky, West Virginia and Virginia, to comprise ultimately a total capacity of 1,000 beds.

Home and community conditions such as shelter, nutrition, family life and recreation are factors of great importance to the health and well-being of wage earners. Diminution in the number and severity of accidents away from work received accelerated attention by health and safety organizations. Because of the importance of the homemaker to industrial production, utility companies, manufacturers of household appliances and medical authorities joined to consider methods of spreading authentic information to the public, to industry and to professional groups concerning work simplification and energy-saving devices for housewives with cardiac, tuberculous and other disabling diseases. Based on these discussions, it was thought that a jointly sponsored Health Home council could best carry out this type of activity.

The number of mines and mills engaged in the production and processing of uranium ore had doubled in the past several years. A detailed field study was made by several related federal and state governmental units in the western plateau region. Findings indicated that health control measures were essential, and steps were taken to convince operators respecting necessary protective installations and devices. Chromate manufacture was similarly studied because of reputed excessive occurrence of lung cancer in workers in this field, and in order to identify the responsible agent. The Seventh Saranac symposium on diseases of the lungs resulting from dust was held at Saranac lake, N.Y., under the auspices of the Trudeau foundation. Special interest centred about the identification of forms of pneumoconiosis attributable to nonsiliceous material. Calcined diatomaceous earth became the subject of much interest since convincing evidence showed that this agent is responsible for chronic disabling pulmonary fibrosis.

Ethylene diamine tetra acetate was regarded as a most promising advance in the treatment of lead poisoning. Further studies

were being made regarding the dosage and the exact nature of its depressive action on blood forming tissue.

Methods were devised for the satisfactory measurement of environmental noise. A method for the determination of the degree of impaired hearing was proposed which could be employed for medico-legal purposes. (C. M. Pn.)

Canada.—The industrial health division of the federal department of health and welfare conducted many studies during 1952, including researches into industrial dermatitis, lead poisoning and safety measures in the use of radioactive luminous compounds. It also waged an aggressive campaign for more complete and effective first-aid provisions in industry. The first civil defense industrial plant protection course was offered by the civil defense co-ordinator, in co-operation with the industrial health division. The Nova Scotia department of public health conducted an industrial hygiene survey of the printing industry in Halifax. The Quebec division of industrial hygiene issued a report that noted fewer cases of industrial diseases each year and the elimination of silicosis in granite-cutting. The Quebec division also continued its intensive investigation into working conditions within the province's 300 foundries. In Ontario, the Toronto general hospital's scheme of modernization and expansion envisaged a wing that would specialize in industrial medicine (a department of rehabilitation and physical medicine). The University of Manitoba organized an institute in industrial nursing to point up new developments and methods dealing directly with the practical problems of the nurse in industry; in Alberta the provincial health survey recommended creation of an industrial hygiene division. The Canadian dental association, to meet the requests of 843 industries, published *Industrial Dental Services*, giving in detail the information needed by any industry desiring to set up a dental program for its employees. (C. Cy.)

Great Britain.—In the 1950 annual report of the chief inspector of factories (Cmd. 8445, H.M.S.O., London, 1952) details were given of the incidence of industrial diseases reported during the year 1950. While in general the incidence of industrial diseases showed a steady decline, comment was made on the increase in the number of cases of epitheliomatous ulceration reported since 1920. In 1950 there were 195 cases, with 13 deaths, compared with 45 cases and only 1 death in 1920. The substances responsible were pitch, tar and oil, and the largest number of deaths was attributable to oil. Considerable research was being carried out into the carcinogenic properties of the various oils used in industry by the department of experimental pathology in the University of Birmingham.

The most serious, incapacitating and fatal of all industrial diseases was pneumoconiosis occurring among coal miners. In the past few years the number of deaths had been in the region of 1,000 a year. The history of lung diseases of coal miners in Great Britain, perhaps one of the most monumental of the medical histories of disease ever written, had been prepared by A. Meiklejohn (see *Brit. J. Indust. Med.*, 1951, 8, 127; 1952, 9, 93; 1952, 9, 208). It was published in three parts and brought into prominence the significance of the economic and social background of the industry, illustrating the awakening of the national conscience on behalf of those who were responsible for the nation's main primary product. Meiklejohn outlined in the third of these studies the important researches which were being carried out, both by the Medical Research council and the National Coal board.

Apart from those diseases which were prescribed under special regulations, there were, in 1952, 38 prescribed (compensatable) industrial diseases. The last of these to be prescribed as an industrial disease, and one of considerable significance, was tuberculosis in certain occupations involving close and frequent

contact with sources of tubercular infection (see *National Insurance [Industrial Injuries] [Prescribed Diseases]*, H.M.S.O., no. 305, London, 1951). This prescribing specially applied to persons engaged in medical treatment or nursing, to research workers engaged on research in connection with tuberculosis and to laboratory workers, pathologists and post-mortem workers handling tubercular material. While much progress had previously been made in the treatment of tuberculosis and its recognition as a social disease of great importance, this prescribing of the disease represented a step forward of considerable human and economic importance. (See also ACCIDENT PREVENTION; PUBLIC HEALTH ENGINEERING.) (A. J. Ar.)

Industrial Production: see BUSINESS REVIEW.

Infantile Paralysis. Data from the World Health organization, covering the first seven to nine months of 1952, indicated relatively high incidence of poliomyelitis in Belgium, Canada, Ceylon, the German Federal Republic and the Netherlands. In the United States 49,780 cases were reported from Jan. 1 through Oct. 25, with peak incidence during the week ending Sept. 20. The highest total recorded for any entire year previously was 42,033 in 1949, when the epidemic began to subside a month earlier.*

A field trial of gamma globulin as a prophylactic against poliomyelitis, begun in 1951, was completed. Subjects were 54,772 children, of whom half received gamma globulin intramuscularly in an average dosage of 0.14 ml. per pound body weight. The others received an inert, innocuous substitute and served as controls. Preliminary data, covering eight weeks or more from the time of injection, showed 90 cases of poliomyelitis in the entire group and demonstrated a protective action of gamma globulin. The effect on attack rate was most positive through the second to fifth week (6 cases in the gamma globulin group, 38 controls). The severity of the disease appeared to be reduced by gamma globulin in cases that developed during the first week. A final analysis was to be published early in 1953 after follow-up studies had been completed.

The gamma globulin used was prepared from large pools of adult human blood plasma. Donors to such pools always include some who have acquired immunity to poliomyelitis by natural exposure, and antibody in their plasma becomes concentrated in the gamma globulin fraction. In gamma globulin prepared from blood of single donors or small groups, antibody against any one or all three of the virus types might not be present.

This human trial showed that minimal levels of serum antibody, as detectable by the available tests, give significant protection against paralytic poliomyelitis in natural infection of man. Other experiments showed a similar protection by human gamma globulin against paralytic illness in *Cynomolgus* monkeys inoculated with the virus by mouth.

The first experimental inoculation of human subjects by mouth with live poliomyelitis virus was reported. Of 20 to whom the virus (type 2) was fed, 14 became intestinal carriers of virus for a few days or weeks (evidence of subclinical infection) and most developed serum antibody against the type of virus administered. Tests on eight subjects showed no antibody development against type 1, and tests against type 3 were not reported. The virus used had been propagated through numerous passages in cotton rats, leading apparently to a marked reduction of pathogenicity for monkeys. None of the inoculated human subjects suffered any illness in consequence. A reduced virulence of this strain of virus for man could hardly be inferred from this experience, however, since the ratio of inapparent to clinically recognizable type 2 infections, naturally acquired, is quite high.

Chimpanzees and *Cynomolgus* monkeys, infected by mouth with various strains of poliomyelitis virus, become intestinal carriers and develop serum antibody as did the human subjects in the experiment described. Clinical signs of poliomyelitis may or may not supervene. It was found that in these animals appearance of virus in the stool may be followed by a transitory appearance of it in the blood (viremia). In instances where paralytic illness developed, a period of viremia preceded paralysis. Disappearance of virus from the blood is followed immediately by appearance of serum antibody. Viremia preceding paralysis had not yet been demonstrated in man, and it was not clear whether viremia in animals is a prerequisite to paralytic disease or not.

Vaccination of six human subjects, with composite vaccine representing the three known types of virus, was reported. The virus was inactivated by treatment with formalin. Gamma globulin was administered before the vaccine, both as a measure of safety and to observe any interference of it with antibody response to the vaccine. The subjects developed a small though indefinite antibody response to type 2, a better response to type 3 and little or none to type 1. The vaccine was prepared from infected spinal cord tissue of monkeys. It was recognized that vaccines from this source would be unsuitable for general use because of possible allergic reactions. This risk should be avoided by using virus grown in living tissue cultures of non-nervous cells.

Application of tissue cultures to laboratory work with the poliomyelitis viruses continued. Use of such cultures expedited and simplified the identification of virus in suspected materials and determination of its immunologic type. Antigens for complement fixation tests had been prepared from the fluid of infected cultures. Use of a synthetic nutrient medium prolonged the life of infected cultures and markedly increased the total yield of virus.

One strain of poliomyelitis virus was successfully propagated in chick embryos. This was accomplished after a long series of passages in immature hamsters, more direct approaches by numerous investigators having failed. It was believed that this might facilitate laboratory work with the virus, and possibly the development of a live-virus vaccine. Only one of the three types of poliomyelitis virus had as yet been adapted to the embryonated egg. (See also EPIDEMICS AND PUBLIC HEALTH SERVICES; MEDICINE.)

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SPECIAL BATHTUB used in hydrotherapy for polio victims being demonstrated to nurses of several nations who were at the Henri Poincaré hospital near Paris to study new treatment methods in 1952

births, just 1% under the rate for the same period of 1951. However, the 1952 infant mortality rate was below that for 1951 only in the first four months of the year, the next three months showing a setback. It was estimated that there were altogether 107,300 deaths under one year of age during the whole of 1951, with a rate of 28.8 per 1,000 live births. This was practically one-half of the rate for 1936, namely 57.1 per 1,000 live births and about one-third of the 1920 rate, which was 85.8 per 1,000. Provisional data covering urban places in England and Wales during the first eight months of 1952 showed an 11% reduction in the rate from the same period of 1951. For the whole of 1951, England and Wales recorded 20,103 deaths under one year of age, and an infant mortality rate of only 29.6 per 1,000 live births. This may be compared with an average annual rate of 50 per 1,000 in the period 1941-45 and 36 per 1,000 in 1946-50. The recent infant mortality rates per 1,000 live births for other English-speaking countries were: Europeans in New Zealand, 23 (1951); Australia, 24 (1950); Europeans in the Union of South Africa, 34 (1951); Northern Ireland, 39 (1950); Scotland, 39 (1950) and Canada 41 (1950).

The infant mortality rates per 1,000 live births for European countries with data for 1951 were: Sweden, 21; the Netherlands, 27; Finland, 35; France, 46; German Federal Republic, 53; Belgium, 58; Austria, 62; Italy, 67; and Spain, 68. In 1951 Jews in Israel had an infant mortality rate of 39 per 1,000.

Results based upon a 10% sample of the vital records for the United States in 1951 showed that deaths under 28 days of life occurred at a rate of 20.2 per 1,000 live births, while deaths from 28 days to 11 months were at a rate of only 8.6 per 1,000 live births. Deaths within the first year of life per 1,000 live births occurred at the following rates for the leading causes: immaturity, 6.7; congenital malformations, 3.8; postnatal asphyxia and atelectasis, 3.8; birth injuries, 3.2; influenza and pneumonia (except pneumonia of newborn), 2.3; gastritis, duodenitis, enteritis and colitis, 1.1; pneumonia of newborn, 0.8; diarrhoea of newborn, 0.1; and all other causes, 7.0. The only causes for which improvements were noted according to provi-

Infant Mortality. The infant mortality rate (deaths under one year of age per 1,000 live births) in the United States continued to move to a new low level in 1952, the rate for the first seven months being 28.9 per 1,000 live

sional records which covered the first six months of 1951 and 1952 were birth injuries and immaturity. Improvement was also recorded in the rate for deaths under 28 days of life, as well as for deaths in the rest of the first year of life.

Infant mortality rates per 1,000 live births according to race and sex for the United States in 1949, the latest year for which complete data were available, were: white males, 32.5; white females, 25.0; nonwhite males, 52.5; nonwhite females, 42.0. Compared with white infants, the nonwhites had a particularly high infant mortality rate from the infective and parasitic diseases, influenza and pneumonia, diseases of the digestive system, and accidents. Among all infant deaths, homicide accounted for about 0.1% for both the whites and the nonwhites. Deaths within the first 28 days of life per 1,000 live births for the leading causes were: immaturity—whites 6.3, nonwhites 9.6; postnatal asphyxia and atelectasis—whites 3.6, nonwhites 4.1; birth injuries—whites 3.4; nonwhites 3.5; congenital malformations—whites 2.8, nonwhites 1.6. For all causes, the rates within the first 28 days were: white males 23.3; white females 17.2; nonwhite males 32.1; nonwhite females 25.0. Of the total deaths within the first year of life, 10% occurred within the first hour of life, 33% within the first day, and 68% within the first 28 days.

Altogether, 81,489 foetal deaths (stillbirths) were reported in the United States during 1949. Of this total 70,584 were at a gestational age of 20 or more weeks, the rate being 19.8 per 1,000 live births. These figures were commonly regarded as gross understatements of the actual situation. A crude estimate was that there were about 500,000 foetal deaths of all gestational ages in the United States annually. The ratios per 1,000 live births for registered foetal deaths where gestation was 20 weeks or more were: whites, 17.5; nonwhites, 34.6. The foetal death ratios were under 15 per 1,000 in Connecticut, South Dakota, Utah and Oregon.

A study of deaths under one month of age, according to birth weight, in New York state for 1945-49 (exclusive of New York city), as reported in the *Statistical Bulletin* of the Metropolitan Life Insurance company for Feb. 1952 showed the following deaths per 1,000 live births: birth weight 1,000 g. or less, 951; 1,001 to 1,500 g., 656; 1,501 to 2,000 g., 238; 2,001 to 2,500 g., 59. Birth weights under 2,500 g. are considered premature. For babies weighing more than 2,500 g. the corresponding rate was only 9 per 1,000. (See also BIRTH STATISTICS; DEATH STATISTICS.) (M. Sp.)

Inflation: see BUSINESS REVIEW; CONSUMER CREDIT; PRICES. See also under various countries.

Influenza: see RESPIRATORY DISEASES.

Inland Waterways: see CANALS AND INLAND WATERWAYS.

Insanity: see PSYCHIATRY.

Insects and Insecticides: see AGRICULTURAL RESEARCH ADMINISTRATION; HORTICULTURE; PUBLIC HEALTH ENGINEERING.

Instalment Buying and Selling: see CONSUMER CREDIT.

Insulin: see DIABETES.

Insurance. **Life Insurance.**—In early 1952, approximately 86,000,000 persons in the United States owned \$253,000,000,000 of life insurance in legal reserve companies, an increase of 8.1% in one year and more than 100% in ten years. This insurance was composed of \$160,000,000,000 ordinary, \$58,000,000,000 group and \$35,000,000,000 industrial. By the middle of 1952 the above total amount of life insurance had increased to \$265,000,000,000. In Canada, at the beginning of 1952, more than 5,000,000 policyholders owned about \$17,200,000,000 of life insurance, made up of \$12,500,000,000 ordinary, \$3,100,000,000 group and \$1,600,000,000 industrial.

In both the United States and Canada the premiums paid for life insurance in 1951 were equal to about 2.5% of the people's income.

Although the amount of legal reserve life insurance owned by policyholders in the United States and Canada was very large, the total was equal to only a little more than one year's personal income of the residents of these countries. Nevertheless, the United States and Canada ranked high above other countries in the ratio of life insurance in force to national income.

During 1951, legal reserve life insurance companies made benefit payments to United States families of almost \$4,000,000,000, which was nearly 60% more than in 1941. Beneficiaries received \$1,700,000,000 of this in the form of death benefits, while living policyholders received \$2,300,000,000 as matured endowments, annuity payments, surrender values, policy dividends and the like. Benefit payments to Canadian families in 1951 amounted to \$249,000,000, of which \$91,000,000 represented payments to beneficiaries and \$158,000,000 payments to living policyholders.

In the United States early in 1952, veterans and servicemen held more than \$50,000,000,000 of National Service and United States government life insurance and, in addition, each man in service had available a gratuitous indemnity of \$10,000 (inclusive of any National Service and United States government life insurance he may have) for death during active military service.

There was also more than \$10,000,000,000 of life insurance in force in fraternal societies, assessment associations, etc. The survivor benefits provided by the Social Security act afforded death benefits to certain members of the families of persons covered by the law and were the equivalent of a substantial amount of life insurance. Liberalizations in these benefits became effective in Sept. 1952.

Life insurance companies in the United States continued to make large investments in corporate securities, mainly industrial bonds and notes. In the first seven months of 1952, holdings of such securities increased by more than \$2,000,000,000. Mortgage holdings increased during this period by more than \$1,000,000,000, while United States government security holdings decreased by \$600,000,000. Stocks represented a small part of corporate security holdings and were mainly in the preferred category, even though life insurance companies were permitted to invest in common stocks in five out of every six states.

As of July 31, 1952, assets of United States and Canadian legal reserve life insurance companies reached \$76,000,000,000, made up of about 40% corporate securities, 30% mortgages, 15% government bonds and 15% other assets.

For 1951 the net interest rate earned on assets of United States companies was 2.98% after federal income taxes. This was virtually unchanged from 1950. (See also SOCIAL SECURITY.)

(L. A. L.)

Property Insurance.—Premiums and losses climbed to astronomical heights in 1951. Net earned premium income of some 746 major companies in the fire insurance industry totalled \$3,390,259,709. This figure was an approximate increase of 8% over the previous year. Losses and expenses kept pace with the premium increase so that the actual gain from the underwriting of fire insurance risks was \$16,561,156 in 1951, compared with \$196,075,919 for 1950.

The volume of fire insurance coverage continued to increase in 1952, but it was believed that net premiums might not be greater. This anomaly was explained by the growth in popularity of the instalment premium plan as opposed to the old single premium payment even for so-called term insurance (policies for more than one year). Profits were expected to be the same or slightly less in 1952 for fire insurance underwriting.

The extended coverage endorsement, which is attached to

many fire insurance policies and which broadens the coverage to include such risks as windstorm, hail, riot, explosion and smoke, produced heavy losses in 1951. A marked improvement was experienced in 1952 under this form. Two influences contributed to this result: Promulgation of higher rates because of the storm losses and a sharp upsurge in the purchase of this coverage, probably flowing from the storm experience.

During 1951 this important coverage was revised and broadened. This was the first important change since this endorsement first appeared in 1938.

Inland marine insurance continued to be a fast-growing segment of the property insurance field. It is an extension inland of the ocean marine coverages. It insures all types of property in transit or related to transportation. Premiums in this area of insurance protection were increasing and the loss experience was satisfactory. The largest line written was the personal property floater with about \$43,000,000 in premiums written in 1951. This coverage with appropriate schedules attached took the place of all insurance on household goods and personal property of an entire family, both within the home and while away from the home.

Casualty insurance premiums increased materially in 1951. There was an approximate 20% growth in earned casualty premiums over 1950. Premium volume was in excess of \$6,000,000,000. Despite the premium increase, loss ratios in accident and sickness, automobile and workmen's compensation insurance made 1951 a dark year in the history of casualty insurance. Substantial investment income, coupled with the enlarged premium income, helped the companies to survive the year without serious surplus impairment.

Rates in most of the casualty insurance lines were revised upward in the majority of states in 1951. But, at least in automobile insurance, further upward rate adjustments loomed on the horizon. Some over-all casualty loss ratios for 1951 were: accident and health, 69.4%; automobile, 67.7%; workmen's compensation, 77.9%; burglary, 44.2%; fidelity, 46.2%; surety, 35.3%; boiler and machinery, 30.3%.

Automobile insurance plagued the companies with severe losses in 1951. Premiums in this field amounted to \$2,882,924,000 in 1951. This was a gain over 1950 of \$364,126,745. The year 1952 with its rate increases and with additional financial responsibility statutes in two or three states portended a premium volume in excess of \$3,000,000,000.

Despite the heavy premium increase in 1951, losses and expenses in automobile insurance exceeded income by more than \$100,000,000. A slight improvement in the situation was noted in the first half of 1952. But the impact of inflation on claim costs, judgments, hospital and medical fees and repair costs, continued to exact a heavy toll on the automobile insurance field. The problem evoked considerable debate and discussion. Many solutions were offered. A few of the curative procedures mentioned were: a system of merit and demerit rating to reward the good driver and penalize the poor one; reduced agents' commissions; yearly revision of rates. Meanwhile, the state legislatures tightened the laws on financial security for the person injured by the negligent motorist. These laws had the net effect of increasing automobile insurance coverage at a time when the market for such insurance was contracting under the pressure of the adverse loss ratio.

Both general liability and workmen's compensation insurance proved troublesome in 1951. The upward rate revisions of 1951 began to reflect themselves, and it did not appear that 1952 would be profitable for these lines.

Accident and sickness insurance continued its speedy growth. Hospital expense coverage experienced a 12% increase in 1951 over 1950; surgical expense, a 20% increase; medical expense,

a 28% increase; cash sickness benefits, a 6% increase (oldest form of accident and sickness insurance). Loss ratios also increased, primarily in the group coverages where competition forced rates below the break-even point. This situation was in the process of revision.

The other casualty lines, such as burglary, glass, boiler and machinery, fidelity and surety produced moderate profits.

During 1951 a program was initiated to standardize the policies known as professional liability coverages. These forms protect against errors and omissions by doctors, dentists, druggists, hospitals, etc. A new druggist liability policy was issued in 1951.

The boiler and machinery policy was also revised and clarified in 1951.

The years 1951 and 1952 were years of turbulence, growth and development in the private property insurance industry.

(L. J. A.)

Hospital, Medical and Surgical.—Voluntary health insurance coverage continued to expand rapidly during 1952, and as more commercial carriers entered the field the problem of duplicate coverage made it increasingly difficult to estimate actual amounts of total coverage held by individuals. However, it appeared that by the end of the year about 90,000,000 persons would hold about 100,000,000 contracts providing some kind of hospital coverage. Nonprofit Blue Cross hospital service plan enrollment amounted to 44,000,000, while 4,000,000 held membership in independent industrial, co-operative or clinic programs; the balance were covered by commercial group and individual contracts.

After allowing for duplication, surgical coverage amounted to about 75,000,000, of whom 31,000,000 held membership in nonprofit Blue Shield or other medically sponsored programs, 3,000,000 in independent programs, and the balance held some type of commercial insurance protection. Medical insurance continued to lag behind, with about 32,000,000 members, 16,000,000 in Blue Shield or medically sponsored coverage, 3,000,000 in independent programs and the remainder covered commercially.

One development that seemed significant in this field was the tremendous interest aroused by scattered offerings of so-called "catastrophic coverage" contracts. With virtually no experience in this field, and few available statistics, nonprofit plans and commercial companies did enrol a number of groups for coverages ranging from specific disease insurance to comprehensive hospital-surgical-medical benefits superimposed on existing benefits and providing as much as \$10,000 added coverage per person. Such contracts normally required both a deductible and coinsurance factor. Toward the end of the year, some commercial insurance companies ceased to offer these policies while studying experience, but there was little doubt that the scope of protection afforded was tremendously popular with many large firms.

(A. G. S.)

Great Britain.—An analysis of British insurance companies' accounts published in 1952 showed further substantial income expansion. The combined fire and accident premium income of 24 representative British offices rose in 1951 by £44,884,000 to £366,115,000. The consolidated underwriting profit was £17,421,000, or 4.7% of the premiums, compared with £23,132,000, or 7.2% in 1950. Marine premiums were £48,493,000, an increase of £8,245,000 over the figure for 1950, and provided a trading surplus higher by £711,000 at £4,565,000. Marine funds at the end of 1951 totalled £69,218,000, an increase in the year of £5,784,000. The increased premium income was in part the result of inflationary pressure, but company chairmen reported much genuine business increase, particularly among overseas connections. The upward surge in premiums required corresponding increases in trading reserves and, with claims enhanced

by the depreciating value of money, a considerable strain was thrown upon the trading accounts.

Including group life and pension business, the total new ordinary life sums assured written in 1951 exceeded £700,000,000, compared with £600,000,000 in the preceding year. New sums assured under industrial life policies, as represented by eight leading industrial life offices, expanded by £15,632,000 to £187,836,000, the average sum assured per policy being £45.2 against £43.8 and £39.5 in the two preceding years. The total industrial premium income was £102,500,000, an increase in the year of £4,205,000, and industrial life funds advanced by £20,220,000 to £699,591,000.

There was a sustained demand during 1952 for life assurances subject to the provisions of the Married Women's Property acts, and for policies based on an income benefit for dependents. New group life and pension schemes were less evident than in 1951, but endowment assurances written for "executive and noncontrolling directors" were again sought. As a result of higher interest yields, many offices announced a reduction in nonparticipating rates.

Losses on the fire account were noticeably heavier than in 1951. In the United Kingdom a heavy toll was exacted in the cotton industry by costly fires in mills and warehouses. Underwriters were presented with the problem of unsold stock accumulation, and in places the values at risk exceeded the international market capacity. In many countries floods and landfalls caused important disasters, recoveries under insurance bearing little relation to the damage sustained. The insurance cost of bush fires and floods in New South Wales was placed at £1,900,000. Australia also suffered several severe fires in industrial and storage risks. Rioting, incendiarism and pillage threw claims stated at £3,000,000 onto the British market.

Increased premium rates for motor business in the United Kingdom became effective in the year, but were generally considered to be based on inadequate data. Following unfavourable underwriting results in 1951, efforts were directed toward the consolidation of existing business. Common law liability of employers proved heavier than expected in the premiums charged, and adjustments to higher levels were made for certain trades and occupations. Property owners and general third-party liability, personal liability cover, fidelity guarantees, personal accident protection and plate glass and burglary insurance remained in good demand and produced satisfactory results.

The British marine market accepted £6,160,000 out of a total insurance of £11,000,000 on the new U.S. liner "United States." Theft, pilferage, nondelivery of cargo and losses under goods in transit cover caused concern to underwriters, as did also the rising cost of hull repairs. Progress in aviation produced new insurance problems and increased demand for hull, cargo and liability cover. (See also CO-OPERATIVES; FIRES AND FIRE LOSSES; LAW; VETERANS ADMINISTRATION, U.S.) (P. Ss.)

Insurance, Old Age: see SOCIAL SECURITY.

Inter-American Highway: see ROADS AND HIGHWAYS.

Interior, U.S. Department of: see GOVERNMENT DEPARTMENTS AND BUREAUS, U.S.

Interior Decoration. The year 1952 saw contemporary design established as the style leader in the home furnishing field in the United States, and there was evidence of a strong trend toward correlation.

The architectural influence dominated the contemporary collections with its "floating" or "off-the-floor" effect, especially in case goods pieces such as chests of drawers, dressers, serving boards, etc. Significant, too, was the sculptured, uncluttered look which gave a clean-cut architectural feeling. In upholstered

pieces, the lighter, open look and the wide use of foam rubber upholstery gave the pieces a smooth, clean appearance.

Following the trend to informal, open-type architecture, there were more multiple-purpose pieces flexible enough to be used in various rooms. Outstanding among these were the room dividers, which included chests, bookcases and desk-chests. These, being finished on all sides, could be placed anywhere in the room to create areas for living-dining, recreation, study, etc.

Adding a great deal of decorative interest to the new designs was the combination of wood with such materials as black metal or wrought iron, woven cane and sisal, leather, glass and decorative tiles. Legs of metal in brass, chrome and black were noted on many of the upholstered pieces, while black was used extensively for the bases of dining, occasional and cocktail tables.

There was a return to the natural wood finishes, more mellow than the bleached finishes but not as dark as the stains generally used for traditional furniture. Dark woods such as cherry and walnut, sometimes combined with light woods, gained in popularity.

Although the 20th-Century designs led the home fashion field, French Provincial, Early American, 18th-Century English, Empire and Directoire were still in demand. Many of these styles were simplified by the omission of elaborate carvings and were made smaller to fit in with the trend toward smaller room dimensions, and drawers and storage compartments were added.

In upholstery and drapery fabrics, nylon made great inroads in the popular-priced brackets with nylon jacquard friezes much in demand by the commercial furniture manufacturers. In the upper price range, wool tweeds and metallics were popular, with imported linens in Modern and Provincial patterns highly favoured. New developments in sheer curtains appeared with many of the sheers made of Orlon, nylon, rayon, cotton and linen in interesting textured weaves and handsome printed motifs. Many of these fabrics were designed to provide some degree of privacy while allowing light to enter the room.

In colours, dark green, red-beige and gray led the moderate-priced lines, while persimmon, lime, toast, kelly green, pumpkin, gold and cinnamon were the leaders in the higher-priced lines. Raspberry, black and white continued to be in demand, particularly in tweeds and dramatic prints.

With a 30% to 35% decrease in the price of wool carpeting during the year, 1952 saw a shift from the cottons and synthetics to the all-wools or wools combined with synthetic fibres. The newest offerings were characterized by fresh, clear colours and simplicity of design which depended upon the weave or the combinations of fibres for decorative interest, rather than on the floral or geometric patterns of the past. Wool twists appeared in smart, decorative colours to harmonize with the colour trends in upholstery and drapery fabrics. These colours included avocado and moss greens, turquoise and aqua blues, plum, beige, gray and the earth tones.

Most important in the all-synthetic carpetings was the three-dimensional effect achieved by the shading of self-colours. Novelty textures, casual designs and tweedy designs were introduced for the first time in the all-rayon or synthetic-fibre floor coverings. For the first time in almost a decade, the consumer was offered floor coverings of quality that were style-right and price-right.

The year disclosed the gradual return to the use of wallpapers in place of painted walls. Hand-screened papers in small-scale abstract patterns (often correlated with matching drapery and upholstery fabrics) and scenic designs were brought down to the price level of the average homeowner. Modern techniques also improved the machine prints with the result that drawings and tones of colour retained their original sharpness. Many papers were improved with plastic finishes so that they were

washable and longer wearing.

Simultaneously with the trend back to wallpapers, paint manufacturers announced several improvements in interior paints. The most important characteristics of these new paints was the easy application by the layman with brush, roller or sprayer, and the ability of the painted surface to withstand repeated scrubbing. Lipstick, nail polish and grease stains were easily removed from these painted surfaces with soap and water.

Radical design changes appeared in the lamp lines during 1952. Bases of black metal or polished brass in low, slender, tripod variations were combined with shades of woven reed, natural-colour linen, perforated copper and brass. There was a noticeable trend toward pin-up lamps which could be raised or lowered by means of a counterweight pulley, and which extended from the wall by a telescoping stem. A revival of ceiling lighting was also noted in the growing popularity of simple, contemporary fixtures made of brass or copper and operated on a pulley.

Serving accessories reflected the trend to easy, casual entertaining with folding, individual snack tables, sectionalized serving plates, lazy-susan trays and tables and stainless-steel flatware.

The basic principles of contemporary house design were setting the standard for all the important furniture designs—open floor plans, low ceilings, combination rooms, easy-to-maintain areas, extensive use of glass walls; the relationship between indoor and outdoor areas; simplicity; beauty through use of natural materials rather than surface ornamentation. These were the factors which dictated the significant changes in furnishings, bringing about the so-called modern effect and influencing even the traditional lines. (See also FURNITURE INDUSTRY.)

(G. M. J.)

International Bank for Reconstruction and Development.

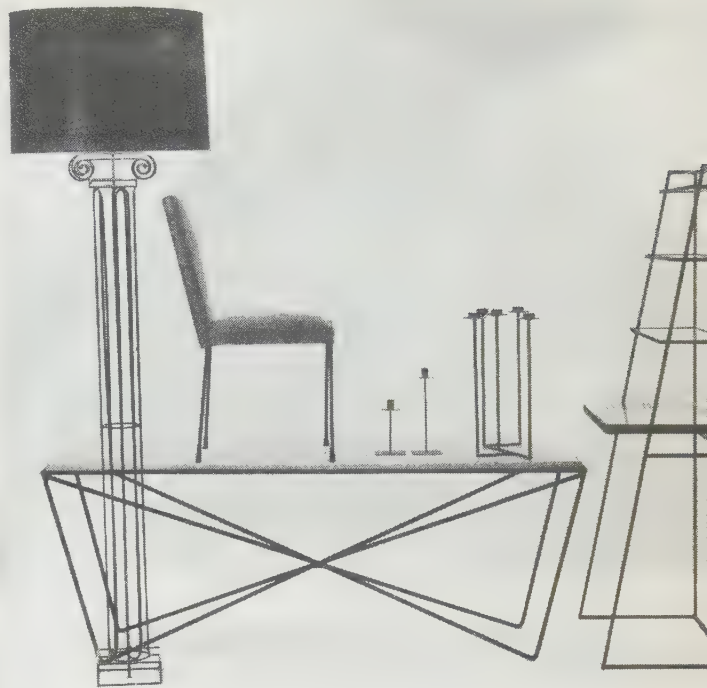
During 1952 the International Bank for Reconstruction and Development continued to bend its energies to the acceleration of economic development in its member countries. Loans totalling more than \$257,000,000 were made during the first ten months of 1952, compared with a total of about \$208,500,000 for the entire year 1951. By Oct. 15, 1952, bank lending had reached \$1,489,287,000, with a total of 72 loans in 27 countries. The bank also increased its activities in giving technical assistance to its members.

Lending Operations.—From Jan. 1, 1952, to Oct. 15, 1952, the bank made 14 loans totalling \$257,504,000 in 11 countries.

Mexico received a loan of \$29,700,000 for power development during the year. The loan was made to the Federal Electricity commission and Nacional Financiera. When the projects financed by this loan would be completed in 1955, bank funds would have made possible an increase of 700,000 kw. in Mexico's generating capacity or nearly doubled the capacity at the time of the bank's first power loan in 1949.

Two loans were made to Peru: \$2,500,000 to provide modern facilities at the port of Callao for the handling of general cargo and for the unloading and storage of bulk grain, and \$1,300,000 to import agricultural equipment. More efficient handling of cargo moving through Callao, Peru's main port, was expected to reduce the turn-around time of ships, eliminate losses of grain from spillage and effect savings of foreign exchange. The bank-financed agricultural equipment was intended to improve methods of agricultural production, reclaim old and open new lands to cultivation.

A loan of \$28,000,000 was made to Southern Rhodesia to aid in carrying out the government's four-year program for economic development. The loan would help finance imported equipment and materials needed for power expansion. The ex-



ASSORTED OBJECTS featuring the wrought black metal popular in 1952, including lamp, chair, candleholders, long work table and slanting buffet server with four graduated glass shelves

pansion consisted of the installation of about 230,000 kw. of new thermal generating capacity, the erection of about 2,000 mi. of transmission lines and the installation of distributing equipment.

A loan of \$7,000,000 was made to Royal Dutch Airlines (K.L.M.) to help finance a program to replace part of its air fleet. The Chase National Bank of the City of New York was participating in the loan to the extent of \$3,500,000. The loan would finance about 20% of the total cost of K.L.M.'s replacement program for 1952-53.

Two loans to Pakistan were made during the year: \$27,200,000 for railway rehabilitation and \$3,250,000 for agricultural machinery. The railway loan would help finance a program for the rehabilitation, improvement and modernization of the government-owned railways in both east and west Pakistan. The agricultural loan would be used to help reclaim 660,000 ac. of the Thal desert in west Pakistan.

A loan of \$20,000,000 was made to the Bank of Finland for the further development of the wood-products industries, for the expansion of electric power facilities and for agricultural improvement. The loan would help the wood-products industries buy modern equipment to increase their capacity for making the more highly processed products; it would provide equipment for four hydroelectric plants and one steam-generating plant, increasing Finland's existing capacity by nearly a third by 1957; and it would pay for imported equipment to be used for clearing land and building forest roads.

A loan of \$25,200,000 was made to Turkey to pay the foreign exchange costs of a multipurpose dam on the Seyhan river, a power-generating plant, and power transmission lines to industrial centres. The dam would help control floods and provide water for irrigation and electric power in the Adana plain, a productive agricultural and industrial area. Increased power would make possible the growth of existing industries, the establishment of new ones and additional public use of electricity.

Loans totalling \$37,500,000 were made in Brazil: \$25,000,000 to help finance an electrification program being undertaken

in the state of Rio Grande do Sul to relieve critical power shortages and to provide power for future industrial development, and \$12,500,000 to buy rolling stock and equipment and rehabilitate track on the Central do Brasil railroad. The Central is Brazil's largest railway and serves the most highly industrialized centres.

A loan of \$50,000,000 was made to help Australia finance development in the following fields: agriculture and land settlement, coal mining, iron and steel production, electric power, railways, road transport, the production of nonferrous metals and industrial minerals, and manufacturing industries. Commonwealth and state authorities, business enterprises and individual farmers would benefit from the loan.

Colombia received a loan of \$25,000,000 to help build a railroad in the Magdalena river valley and to build and equip railroad repair shops in Bogotá. The new line would connect the country's eastern and western rail networks, linking the Pacific coast to the interior and providing a dependable rail-river route to Caribbean ports. The projects were part of an extensive program for railroad improvement.

Iceland received a loan equivalent to \$854,000 to help build a nitrogen fertilizer plant. The plant would save foreign exchange, as Iceland had to import all its fertilizer. This, like two previous loans to Iceland, was to be entirely in European currencies.

Other Activities.—In the course of its loan operations, the bank advises on a wide range of technical, financial and administrative matters related to the projects it finances. At the request of member governments, it also organizes groups of experts to visit member countries to assess their total economic resources and to make recommendations for development programs. In 1952 the reports of three missions of this type, to Iraq, Ceylon and Surinam, were completed and presented to the governments concerned. The report of a mission which visited Jamaica in 1952 was in preparation. A variation of the survey mission technique was used in Nicaragua. Instead of sending a large group for a few months, the bank sent one of its economists and an engineer for a ten-month period to help the Nicaraguan government draw up a development program. Experts were called in, as needed, for shorter periods. Before the report was presented in Sept. 1952, the Nicaraguan government had already taken action along lines recommended by the mission. A number of specialized missions to study specific development problems were sent to various member countries during the year. The report of a joint bank-F.A.O. (Food and Agriculture organization) agricultural mission to Chile was to be presented to the government in Nov. 1952.

Four countries—Burma, the Federal Republic of Germany, Japan and Jordan—joined the bank during the year, bringing total membership to 54 and increasing the capital subscription to \$9,036,500,000. The bank increased its funds for loans by the sale of two bond issues totalling \$110,000,000 in the United States, and one issue of (Canadian) \$15,000,000 in Canada. The bank's direct obligations outstanding on Oct. 15, 1952, totalled the equivalent of \$555,902,798. Sales from the bank's loan portfolio had increased to \$61,228,135 by Oct. 15. Net earnings for the fiscal year ended June 30, 1952, amounted to \$15,872,883, all of which was credited to a general reserve. In addition the bank added \$7,558,906 to its special reserve. Total reserves at the end of June aggregated \$85,712,754.

In March 1951 the United States International Development Advisory board, a representative group of private citizens appointed by the president of the United States in accordance with the Act for International Development, published a report entitled *Partners in Progress*. This report, prepared after consultation with the management of the bank, proposed, among

other things, that an international finance corporation be created as an affiliate of the bank, to help finance private enterprise by equity investment or by loans made without governmental guarantee. A report was prepared by the staff as a basis for continuing to explore the proposal with member governments and interested business groups. In June 1952, after discussing the report, the United Nations Economic and Social Council approved a resolution requesting that explorations continue, and that the bank inform the council in 1953 of the results of its study and of any action it might take on the proposal. (See also BANKING; INTERNATIONAL MONETARY FUND.) (E. R. BL.)

International Children's Emergency Fund: see CHILD WELFARE.

International College of Surgeons: see SOCIETIES AND ASSOCIATIONS, U.S.

International Confederation of Free Trade Unions: see LABOUR UNIONS.

International Court of Justice: see INTERNATIONAL LAW; UNITED NATIONS.

International Labour Organization. The 35th session of the International Labour conference, held June 4–28, 1952, at Geneva, Switz., was attended by 654 delegates and advisers from 60 member states—the largest attendance in its history—and official observers from the United Nations, the World Health organization and many other groups. Libya was admitted to membership as the 66th member. Six international agreements were added to the world labour code: three conventions concerning (1) minimum standards of social security, (2) holidays with pay for agricultural workers and (3) a revised maternity convention, adopted originally in 1919; and three recommendations to supplement the conventions on maternity protection and holidays with pay, and to promote consultation between employers and workers at the level of the undertaking, in industrial disputes. The report of the director-general dealt chiefly with international technical assistance—the operational work of the I.L.O. Fifteen out of 25 sessions of the conference were devoted largely to the discussion of this report, with the result that much helpful criticism was received and practically unanimous support of the program assured. A total of 103 conventions and 95 recommendations had been adopted by the conference.

At the fifth conference of American States Members of the I.L.O., held April 17–29 at Petropolis, Braz., 14 countries were represented and 3 others sent observers. The director-general's report dealt chiefly with the incidence of inflation, trade unionism and freedom of association in Latin America. Land reform and the welfare of rural workers were the main subjects discussed.

The fourth Inter-American Conference on Social Security, held at Mexico City, Mex., March 24–April 8, 1952, was a larger body with 126 delegates from 22 American countries. Representatives from the United Nations, Food and Agriculture organization, World Health organization, the Organization of American States and the International Social Security association, as well as observers from France and Spain, attended the conference. The agenda included the report of the director-general, the extension of social security to agricultural workers, general family benefits, medical and pharmaceutical problems of social security, and a preliminary discussion of social security terminology. At the fifth session of the Permanent Inter-American committee, Caracas, Venez., was selected for the next conference.

At the 17th meeting of the Joint Maritime commission, Ge-

neva, Switz., May 13-15, it was voted to recommend that the governing body call a regional maritime conference in Asia early in 1953, with an agenda providing for a director-general's report and the discussion of methods of recruitment of Asian seafarers and the welfare of the same in Asian ports. The agenda also would provide for taking necessary steps to increase the number of regular members of the commission from 12 to 15 to make room for important maritime countries that had become I.L.O. members since 1946, when the last election of members was held.

The operational activities in connection with manpower, migration, underdeveloped areas and technical assistance had become so important as to threaten the earlier emphasis on the international labour code and labour legislation, but the temper of the conference showed clearly that this was not the case. The budget voted by the conference for 1953 was \$6,469,085, or about \$1,550 less than that voted for 1952, and the assessments voted were: U.S. 25%, U.K. 12.79%, France 7.49%, Germany 4.87%, India 4.13%, Canada 3.98% and all other members less than 4%.

Ratification of conventions totalled 1,315 in September. Reports of action taken, required for both conventions and recommendations, reached a higher level than usual, though many governments seemed negligent in their obligation to bring them to the attention of the constitutional authority within the prescribed time. (See also CHILD WELFARE.)

BIBLIOGRAPHY.—*The International Labour Code 1951*, new edition, 2 vols., 1:155-1181, 2:39-1220 (Geneva, 1952); *Sixth Report of the International Labour Organization to the United Nations*; "Studies and Reports," new series: no. 29, *Labour Policies in the West Indies*; no. 30, *Conditions of Work in the Fishing Industry*; no. 31, *Textile Wages—An International Study*; and a new periodical called *Migration*, published every other month since Jan. 1952. (S. McC. L.)

International Law. **The Rights of States.**—The deadlock on admitting new members to the United Nations continued during 1952. The United States especially urged the admission of Japan and Italy. In addition 19 states (Austria, Ireland, Portugal, Finland, Jordan, Libya, Ceylon, Nepal, Republic of Korea, Vietnam, Cambodia and Laos, supported by the democratic states, and Albania, Bulgaria, Hungary, Rumania, Mongolian People's Republic, Korean People's Republic, and Viet Minh, supported by the Soviet states) had applied for membership. The Soviet government proposed bloc admission of 14 of these states not including Japan. The United States took the position that states should be admitted individually each on its own merits. The Federal Republic of Germany, generally recognized by the western states, had not applied for admission but had been admitted to some of the specialized agencies. Spain had not applied for admission to the United Nations but had applied for admission to U.N.E.S.C.O. Switzerland, insistent on retaining its neutral status, had not applied for admission to the United Nations, but had become a party to the World Court statute. The issue of what government should represent China in the United Nations continued controversial. The national government, controlling Formosa, continued to be recognized, but the Soviet states continued to demand that it be replaced by the Communist government controlling the remainder of China.

There was a tendency for states to claim certain rights seaward from the coast beyond the traditional three-mile limit. On the basis of the sector theory, accepted by Canada but not by the United States, the Soviet Union claimed title to all land north of its territory. Soviet jurists also argued for title to the sea and the ice floes in this sector on the grounds that navigation was possible only when assisted by shore services, that the Soviet Union maintained navigation in the area as an internal route, that much of the sea was included in gulfs between Soviet territory, and that some of it, particularly the Kara sea, had

been claimed since the 16th century with general acquiescence. (S. A. Vysanepolsky, *Current Digest of Soviet Press*, Oct. 18, 1952, p. 3 ff.) The Soviet Union also claimed a maritime belt 12 mi. wide on its Baltic coast, but this claim was protested by Sweden.

Juristic discussion tended to support the right of a state to the sea bed as far out from its coast as resources can be exploited, but with insistence that this does not imply claims to fishery or navigation control (Lauterpacht, *British Yearbook of International Law*, 1950, p. 376 ff.). The United States claim of this type, asserted in 1945, had been generally acquiesced in by other sovereign states many of whom had made similar claims for themselves. It had resulted, however, in a controversy between the federal government and the states of the union as to the title of oil and other resources of the sea bed within this extended area. In a case involving California, the supreme court supported the claims of the federal government because of its exclusive international responsibility. Earlier decisions recognizing state title to the bed of internal waters were not, therefore, applicable. "The state is not equipped in our constitutional system with the powers or the facilities for exercising the responsibilities which would be concomitant with the dominion which it seeks. . . . Consequently we are not persuaded to transplant the Pollard (3 How 212) rule of ownership as an incident of state sovereignty in relation to internal waters out into the soil beneath the ocean, so much more a matter of national concern" (*U.S. v. California*, 332 U.S. 19, 1947). The same rule was subsequently applied in cases involving Texas (339 U.S. 707, 1950), and Louisiana (339 U.S. 699, 1950). The states sought to have these decisions reversed by congress and the issue was debated extensively in the presidential campaign of 1952.

A number of cases dealt with privileges and immunities of states and their agents. The Soviet Union, and the United States in retaliation, restricted movements of diplomatic officials of the other in their respective territories. A United States senate resolution called for the registration of foreign diplomatic and consular officers in the United States under the foreign agents registration act. China was permitted by a United States federal court to sue certain Chinese officials alleged to have defaulted with Chinese funds. The court held that the Formosan government, recognized by the United States as the government of China, was capable of representing China and that the matter was within the court's jurisdiction even though it concerned Chinese internal relations. (*Republic of China v. Pang-Tsu Mow et al.*, 101 Fed. Supp. 646, 1951.)

Rights of International Organizations.—The juristic status of international organizations had been generally acknowledged by both jurists and courts, and their privileges and immunities had been defined by numerous treaties, as well as by analogy to the privileges and immunities of states and diplomatic officers (Hans Aufricht, *Proceedings American Society of International Law*, 1952, p. 85 ff.). The secretary-general of the United Nations dismissed certain United States citizens from the secretariat who had refused to testify before a United States senate committee as to whether they were Communists. Other members of the secretariat were suspended. The secretary-general thus refused to recognize the immunity of secretariat members in respect to proceedings before official agencies of their own country on matters outside their official functions in the United Nations.

The United Nations and the specialized agencies had manifested their jural personality by concluding more than 300 agreements with states. Many of these agencies had been accepted as jural persons before the courts of member states. In a recent case the International Relief organization was permitted to

sue in a United States court (*I.R.O. v. Republic S.S. Corporation*, 189 Fed. [2nd] 858, 1951).

The role of law in the proceedings of the United Nations continued to be debated. A resolution introduced by Great Britain in the general assembly called for greater attention to international law in the drafting of requests for advisory opinions. The International Court of Justice dealt with an unusual number of cases during the year in one of which, that dealing with Morocco, the United States participated for the first time as a party in a litigated case. The court on Aug. 27, 1952, sustained the United States claim to equality of commercial treatment and limited consular jurisdiction in Morocco. The International Law commission in its report to the general assembly in Oct. 1952, presented a draft code of arbitral procedure and indicated progress in the codification of the law of nationality and statelessness, of the regimes of the territorial sea and the high seas, and of treaties.

Rights of Individuals.—Juristic writing manifested a tendency to acknowledge that individuals are subjects of international law (George Manner, *American Journal of International Law*, July 1952, p. 428 ff.; Willard B. Cowles, *Proceedings American Society of International Law 1952*, p. 71). The important issue, as suggested by U.S. Secretary of State Dean Acheson, concerns less legal principle than practical measures for affording protection. Debate on the proposed Covenant of Human Rights and the proposed Convention on Freedom of Information continued in United Nations organs but marked little progress. Some attention was given to the right of peoples and nations to self-determination in connection with the Covenant of Human Rights, with the regime of nonself-governing territories, and with the request for a hearing in the general assembly by Tunis and Morocco sponsored by a number of Arab and Asiatic states.

The supreme court of California sustained the opinion of the court of appeals nullifying the California Alien Land law which discriminated against land ownership by Japanese. It did so, however, on the ground that the law denied "equal protection of the laws" required by the 14th amendment of the United States constitution, and explicitly overruled the opinion of the court of appeals that it violated the pledge of the United States in the United Nations charter to respect human rights. The court said that the self-executing character of a treaty provision depended upon the intention of the parties and found, "although the member nations obligated themselves to co-operate with the international organization in promoting respect for, and observance of, human rights, it is plain that it was contemplated that future legislative action by the several nations would be required to accomplish the declared objectives, and there is nothing to indicate that these provisions were intended to become rules of law for the courts of this country upon the ratification of the Charter." (*Sei Fujii v. California*, 242 Pac. [2nd] 617, 1952.)

Major issues of individual rights were raised in the Anglo-Iranian Oil company dispute and in the Korean truce negotiations. In the former the International Court of Justice held on July 22, 1952, that it lacked jurisdiction because the United Kingdom was not a party to the agreement of 1933 between the Anglo-Iranian Oil company and Iran so this agreement was not a treaty, and Iran's acceptance of the court's compulsory jurisdiction in 1932 was limited to treaties subsequent to that acceptance so the relevance of earlier treaties could not be considered. The president of the court, Sir Arnold McNair of British nationality, concurred in the decision. Judges of United States, Canadian, French, Brazilian and Chilean nationality dissented. While the case was pending in the court, Great Britain requested the Security council to take measures to com-

pel Iran to observe the interim order which the court had earlier given. The Security council, however, postponed action pending the court's decision on the merits. This decision resulted in terminating the interim order. The debate in the Security council indicated that its standard for determining whether the issue was domestic, might differ from the standard applicable by the court because the Security council had competence over any dispute which threatened international peace and security. The Anglo-Iranian dispute precipitated much juristic discussion of the rights of private concessionaires in foreign territory. It was pointed out that new concepts of nationalization of private enterprise had considerably reduced the effectiveness of the protection which international law formerly gave to private rights of this type. (J. Frankel, *Year Book of World Affairs*, London Institute, 1952, p. 56 ff.; G. Schwarzenberger, *Current Legal Problems*, 1952, p. 295 ff.)

The Korean truce negotiations had been halted during the year because of the insistence by the North Koreans and Chinese that all prisoners of war in the hands of United Nations forces must be repatriated. This demand rested in part on article 118 of the Geneva convention of 1949 concerning prisoners of war which declares "prisoners of war shall be repatriated without delay after the cessation of hostility." Article 7 of this convention states "prisoners of war may in no circumstances renounce in part or in entirety the rights secured to them by the present Convention." The United Nations negotiators considered that the right secured to the prisoners is an individual right to be repatriated if they desire and not a right of their government to demand their repatriation. Since the prisoners in question deserted, as a result in some cases of inducement by the United Nations, it would be a gross breach of faith to return them by force to probable execution by the Communist authorities.

International Crimes.—No progress was made on the proposed International Criminal court and the text as drafted was widely criticized by jurists. Nor had progress been made on the definition of international crimes by the International Law commission. Justice Robert H. Jackson expressed the opinion at the annual meeting of the American Society of International Law, that codification of international criminal law might be premature. The jurisprudence of the actual trials of war criminals, he thought, provided a basis for important juristic developments in this field. (*Proceedings*, 1952, p. 196 ff.)

Opinion in Germany and Japan had demanded clemency for convicted war criminals. The issue was raised in connection with the Japanese peace treaty by which Japan accepted the convictions by Allied courts and agreed that clemency in any case must depend upon consent of the government or governments which imposed the sentence. In the case of persons sentenced by the international military tribunal, consent by a majority of the governments represented on the tribunal was required (article 11). Before the treaty went into effect Gen. Douglas MacArthur had paroled 300 Japanese war criminals who had completed more than one-third of their sentence. On April 15 it was announced that the Japanese government had cleared the name of Gen. Masaharu Homma, the former commander of the Philippines, executed in 1946 for responsibility for atrocities, including the Bataan "death march." On April 28 when the peace treaty went into effect, the Japanese government granted amnesty, including pardons, reduction of sentences, and restoration of civil rights, to 1,300,000 persons, none of them, however, war criminals convicted by Allied courts. On July 29, it asked the Allies to consent to clemency for 230 war criminals serving sentence, but eligible to clemency on the basis of a Japanese law identical with that established on the subject by General MacArthur. The United States set up a board of clem-

ency and parole for war criminals on Sept. 4 to consider these requests.

On Sept. 17, German Chancellor Adenauer appealed to world public opinion for aid in the solution of the problem of war criminals and prisoners of war. There were 1,017 Germans still in the custody of the western countries though 75% of those condemned by Allied courts had been released. The number of prisoners of war and war criminals still in the U.S.S.R. was unknown but was certainly more than 100,000. On Oct. 8, Gen. Vassily Chuikov of the Soviet Union and the three western commissioners agreed to relax the conditions of war criminals in Spandau prison.

Treaties.—Discussion continued on the different opinions expressed by the International Court of Justice and the International Law commission concerning the effect of reservations to multilateral treaties, and some constructive suggestions were made. (See W. W. Cox, *Proceedings American Society of International Law*, 1952, p. 26 ff.) The situation left the secretariat of the United Nations in a quandary as to who were the parties to some such treaties and when they came into force. The inconclusive action of the general assembly, "leaving to the appreciation of each of the states which may be concerned the legal consequences of reservations to future conventions" was, in the opinion of Manly O. Hudson, "far from an encouragement to orderliness in the process of international legislation" (*Proceedings American Society of International Law*, p. 15). The international law commission was to study the matter further in its effort to codify the law of treaties. The process of international legislation continued, mainly through the agency of the United Nations and the specialized agency. About 20 general treaties had been negotiated under United Nations auspices.

During the year there was much discussion in the United States, both juristic and popular, on the proposal to amend the United States constitution in order to restrict the treaty-making power. A proposal by Sen. John W. Bricker of Ohio, supported by more than 50 senators, sought to reduce the use of executive agreements and to eliminate the self-executing character of treaties. A proposal by the American Bar association would have gone further by making it impossible for a treaty to become effective as internal law if its provisions went beyond the congressional powers of domestic legislation. International lawyers were generally adverse to these proposals which they thought would severely impair the United States' capacity to protect its citizens abroad and to increase the general protection of human rights by international legislation, and would jeopardize the good faith of the United States in numerous instances by subjecting treaties to impairment by inaction or inaction of any of the states of the union. The proposed restrictions on the making of executive agreements would, in the opinion of the defense department, render co-operation with other governments in North Atlantic or other international defense activities practically impossible, and would also impair programs of technical assistance, international exchange of persons and reciprocal commercial agreements. This movement arose from opposition to executive political commitments such as those of the Yalta conference and to limitations on states rights and American domestic jurisdiction which might be consequent upon ratification of treaties like those on genocide and human rights. Most jurists felt that the fears expressed in this agitation were exaggerated.

War and Aggression.—The Korean operations of the United Nations continued during the year. The armistice negotiation became stalemated on the issue of compulsory repatriation of war prisoners. The subject was discussed in the United States election campaign and in the general assembly meeting in the

autumn of 1952.

A number of cases concerning individual rights in time of war were dealt with by national courts during the year. A United States court held that a person of dual United States and Japanese nationality retained his United States allegiance while in Japan during the war and was guilty of treason when he engaged in brutal treatment of United States prisoners of war (*Tomoya Kawakita v. United States* 190 Fed. [2nd] 506, 1951). A United States court held that a United States citizen did not have good title to property originally owned by Dutch citizens, confiscated by the nazis during their occupation of the Netherlands and acquired by the United States citizen after several transfers. The Netherlands also failed to acquire title on the basis of a decree of the government-in-exile during the occupation. The court questioned whether German rights as a military occupant were nullified by the aggressive character of the nazi occupation. (*State of Netherlands v. Federal Reserve Bank of New York*, 99 Fed. Supp. 655, 1951.)

A British prize court held that vessels in process of construction in a dry dock in a German port occupied by British forces before the surrender of Germany in 1945 but not formally captured until 1947 were good prize subject to condemnation as enemy property. It held that these hulls were not property on land and were captured during hostilities. (*The Hermes*, 1 Lloyd's Prize Cases, [2nd] 289, 1951.)

It cannot be said that international law advanced during the year, in either precision of content or regularity of observance. Great differences of ideology, great changes in the distribution of power, great inconsistency between the material conditions of a shrinking world and the human beliefs evolved from national cultures, and great uncertainty of the future inherent in a rapidly changing world, had shattered traditional standards and hampered the development of a consensus about principles or practices which might combine stability with progress toward the realization of human aspirations. Yet it was hoped that the intense, and on the whole disinterested, thought given to the problem by international and national political and juridical agencies, by national and international associations, and by individual jurists and scientists might in time develop an international law adapted to the new situation of the world. (See also UNITED NATIONS.) (Q. W.)

International Monetary Fund. During 1952 the International Monetary fund continued its activities in the field of international consultation and co-operation on the various monetary and exchange problems of its member countries. The fund continued to emphasize to its members the importance of reducing or removing existing restrictions and pressed for the simplification of multiple currency practices. During the period under review, increasing attention was given to the adoption of policies which could make more effective the use of the fund's resources. The fund continued to extend technical assistance to member countries on a variety of specialized problems. It also continued its collection and interpretation of balance of payments and other statistical data and carried forward its general and specialized training programs for officials of member governments. The fund co-operated actively with other international and regional organizations.

During 1952 membership of the fund was increased to 54 by the admission of Burma on Jan. 3, Japan on Aug. 13, Germany on Aug. 14 and the kingdom of Jordan on Aug. 29. The aggregate of fund quotas was thus increased to \$8,736,500,000. Major asset items consisted of approximately \$1,680,800,000 in gold, \$5,692,300,000 in members' currencies and \$1,356,200,000 in capital receivable from members whose par values had not yet been

established. Indonesia and Haiti were admitted to membership in the fund at the seventh annual meeting (Sept. 1952) with formalities to be completed later.

The establishment with the fund of an initial par value for the Ceylonese rupee was effected Jan. 16, 1952. As of Sept. 30, 1952, the par values expressed in gold and U.S. dollars had been established for the currencies of 41 of the fund's members. The executive board agreed to a change in the par value of the Yugoslav dinar (effective Jan. 1, 1952). This change not only represented a drastic devaluation but also signified a far-reaching reform of the economic system of Yugoslavia. During 1952 the fund also consulted with several members on changes in their foreign exchange systems, which did not involve changes in their agreed par values.

In 1952 the fund entered a new period of activity in the field of restrictions. Its articles of agreement provided that five years after the date on which the fund began operations—and each year thereafter—member countries still maintaining restrictions inconsistent with the fund's articles should consult with the fund on the underlying factors affecting the further retention of such restrictions. The majority of the fund's members still maintained the restrictive measures permitted during the post-war transitional period, although they varied widely in form and intensity. The consultations, beginning in March 1952 and continuing late in the year, afforded an opportunity for discussion with member countries of possible measures by which restrictions might be eliminated or modified. The procedure being followed in these consultations was set forth in the *Third Annual Report on Exchange Restrictions* published by the fund in May 1952.

During the period under review, the fund board carried on extended discussions with respect to the appropriate use of its resources. Measures were adopted which were designed to safeguard the revolving character of its resources and at the same time facilitate their use by members willing to pursue financial and payments policies and practices that would enable them to make more rapid and significant progress toward the establishment of the stable system of nondiscriminatory multilateral trade, which is one of the fund's objectives. The principle underlying a decision of the executive board on Feb. 13, 1952 (published in the *Annual Report*) was that exchange purchased from the fund should not remain outstanding beyond a period reasonably related to the payments problem in respect of which it had been purchased from the fund. This period would fall within an outside range of three to five years. A further decision relating to the use of the fund's resources was taken on June 19, 1952, in response to the first request received from a member (Belgium) for a stand-by arrangement rather than an actual drawing, and in Oct. 1952, general principles and procedures relating to stand-by arrangements were agreed on.

Between March 1, 1947, when the fund commenced operations, and Sept. 30, 1952, 21 member countries had obtained short-term financial assistance by purchasing foreign exchange from the fund with corresponding amounts of their own currencies. During 1952 purchases by Brazil of \$37,500,000, by Paraguay of \$875,000, by Turkey of \$10,000,000 and by Australia of \$30,000,000 brought these transactions to a total of \$892,408,380 (as of Sept. 30, 1952). The fund also made a stand-by arrangement which would permit the government of Belgium to purchase on a revolving basis up to \$50,000,000 in currencies held by the fund. The following countries repurchased amounts of their own currencies from the fund during 1952 with payments of gold or dollars or both: the Netherlands, \$27,351,500.02; Brazil, \$65,500,000; Chile, \$3,679,308.28; Peru, \$3,097,298.72; Syria, \$418,000; and Turkey, \$4,997,729.07. With these payments, repurchases totalled \$184,693,538.87.

In 1952 the fund continued to maintain active and close relations with its members in the general field of technical assistance. On March 21 the fund informed its members that it was prepared to provide them with a regular technical service in connection with their gold transactions. Fund representatives visited 37 countries to consider problems relating to their national economies and financial systems. Through such consultations the fund was able to obtain a clearer understanding of the situation in each country and to assist in the formulation of practical programs of action.

The fund's board of governors held its seventh annual meeting in Mexico City, Sept. 3–12, 1952. At that time the executive board presented its *Annual Report* on the fund's activities. In reviewing the world economic situation, the report stated that during the seven years since World War II and more than five years since the fund began operations, exchange restrictions of many types had continued in existence and international payments were still far from having attained a state of balance. It re-emphasized the close and inseparable connection between internal fiscal, monetary and economic policies and external equilibrium and balance in international payments. It noted that recent measures taken by the fund to facilitate the utilization of its resources were important steps toward making the fund a more effective instrument in assisting members to meet temporary imbalance in their international accounts and to pursue sound exchange policies, but remedial action must be taken by members to eliminate balance-of-payments deficits which might be the result of unsatisfactory domestic fiscal and monetary policies. It also expressed the earnest conviction that all countries in a strong balance-of-payments position should take all practicable means of reducing barriers to international trade as their most effective contribution to the restoration of a balanced world economy. (See also INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT; TRUST TERRITORIES.)

(F. A. Sd.)

International Red Cross: see RED CROSS.

International Refugee Organization: see REFUGEES.

International Trade. World exports in 1952 were tending to decline from the record levels of a year earlier. The boom in trade, caused by the war in Korea and the subsequent programs for rebuilding defense strength in the free countries of the world, was tapering off. At an annual rate, exports for the first quarter were approximately \$77,000,000,000 compared with about the same level for the year 1951. After allowing for price changes, however, the volume of trade in the first half year probably declined by at least 5% from the high levels of 1951.

In 1952 there was again an improvement in the balance of payments of the world with the United States, after a serious deterioration in 1951. This change was made possible in part by a resumption of heavy purchasing abroad by United States traders following the sudden and sharp slump in the middle of 1951, but even more importantly by declines in purchases from the United States by the rest of the world. When large deficits with the dollar area reappeared, particularly for European countries late in 1951, a number of those countries tightened their exchange and import restrictions. There was an inevitable time lag before these restrictions came into effect, but by the third quarter of 1952 it was evident that reductions in imports from the United States were sizable. This reduction in United States exports and increase of imports operated by the third quarter to reduce the U.S. export surplus, exclusive of military-aid shipments, to considerably less than \$1,500,000,000 at an annual rate, compared with \$3,500,000,000 in the second quarter.



INTERNATIONAL ECONOMIC conference which opened in Moscow in April 1952, with the U.S. represented by 13 people, including businessmen and trade unionists. Delegates listened to the speeches through headphones

After the declines in raw-material prices in early 1952, many countries in the far east and some in Latin America imposed or tightened restrictions against United States goods. Some countries in all parts of the world had increased their purchases so rapidly in 1951 that they were in serious over-all balance-of-payments difficulties and felt compelled to extend controls over all imports, whether paid for in dollars, sterling or other currencies. Restrictions were also continued and, in some cases, extended against trade with the soviet bloc countries, particularly China. The first half of 1952 saw further reductions in the volume of free world trade with the bloc below the already declining levels of 1951.

United States.—United States trade in the first six months of 1952 continued at high levels, but was characterized by a moderate reduction in the large export surplus of late 1951. Total exports for January-June 1952 were \$7,976,000,000 compared with \$7,366,000,000 in January-June 1951 and \$7,664,000,000 in July-December 1951. Only military-aid shipments kept export values for the first half of 1952 above 1951 levels. In fact, in terms of volume, there was a slight decline in non-military exports in the first half of 1952 compared with the half year ending Dec. 1951.

Imports of the United States amounted to \$5,405,000,000 in the first half of the year, a figure 10% in value below the corresponding period of 1951 but 9% above the second half of 1951. Since average prices of goods imported by the United States dropped considerably from the mid-1951 high, the volume of imports in the first six months of 1952 was within 4% of the record level of the corresponding period a year earlier and 12% greater than the volume of the second half of 1951.

Geographically, the distribution of United States foreign trade followed the pattern of recent years in the first half of 1952. The Latin-American area was still, by a wide margin, the leading supplier of United States imports, providing about

one-third of the total. Canada, which furnished a little more than one-fifth, was the second ranking source, followed by the far east and Europe, each with slightly less than one-fifth. In striking contrast to prewar years was the sharply increased proportion of imports coming from Africa and the near east. In 1952 this proportion was around 8%, more than twice as high as the corresponding 1936-38 figure.

In United States export trade during the first half of 1952 Europe was as usual the principal destination, taking about one-third of the total. The next largest share—one-fourth—went to Latin America. Canada, with somewhat less than one-fifth, out-ranked the far east by a fairly narrow margin. Africa and the near east accounted for a much smaller proportion of the trade than any of the other regions.

Table II.—Selected Principal Commodities Traded by the United States

	(In quantity)	Jan.-June 1951	July-Dec. 1951	Jan.-June 1952
Commodity	Unit of quantity			
Principal imports				
Copper	million lb.	537	542	506
Tin, ore and bars	million lb.	41	23	84
Lead	million lb.	221	237	676
Zinc	million lb.	368	300	1,051
Coffee	million lb.	1,448	1,246	1,367
Newsprint	million lb.	4,888	5,037	4,979
Crude rubber	million lb.	829	813	1,017
Crude petroleum and fuel oil	million lb.	160	142	165
Cane sugar	million lb.	4,119	3,164	4,478
Unmanufactured wool	million lb.	237	131	174
Iron and steel mill products	1,000 short tons	2,026	1,343	755
Principal exports				
Wheat and wheat flour	million bu.	256	220	258
Cars and trucks	thousands	228	187	176
Unmanufactured cotton	thousand bales	2,163	3,081	2,745
Iron and steel mill products	thousand short tons	1,767	1,977	2,627
Cotton cloth	thousand sq.yd.	415	388	385
Coal	thousand short tons	25	37	30
Unmanufactured tobacco	million lb.	167	356	162

Canada.—Preliminary figures for the trade of Canada during the first eight months of 1952 showed an export surplus of approximately \$240,000,000 compared with a net deficit of \$336,000,000 at the end of Aug. 1951 (figures in terms of Canadian dollars used throughout this section). This important reversal was accounted for by a spectacular increase in exports to countries other than the United States, accompanied by a decline in imports.

Canada's exports, which totalled \$2,100,000,000 in the first six months, represented an

Table I.—United States Trade Balance, by Geographic Areas

Area	Exports*			Imports			Excess of exports(+) or imports(-)		
	Jan.-June 1951	July-Dec. 1951	Jan.-June 1952	Jan.-June 1951	July-Dec. 1951	Jan.-June 1952	Jan.-June 1951	July-Dec. 1951	Jan.-June 1952
Total, including "special category" items	7,366	7,664	7,976	6,018	4,949	5,405	+1,348	+2,715	+2,571
Canada	1,417	1,277	1,480	1,115	1,161	1,156	+302	+116	+325
Latin America	1,883	2,023	2,001	1,979	1,569	1,784	-97	+453	+217
O.E.E.C. and other western Europe	2,534	2,583	2,622	1,114	941	964	+1,420	+1,642	+1,658
Excluding "special category" items:									
Soviet Europe	3	†	†	36	28	20	-33	-28	-19
Far east	960	1,172	1,198	1,301	965	1,053	-341	+207	+146
Near east	146	145	156	102	65	62	+44	+80	+94
Africa	276	305	329	370	219	367	-94	+86	-38

*Data by areas do not add exactly to grand totals because trade in special category commodities with the far east, near east, Africa and European dependencies in the western hemisphere are excluded. Special category exports to these areas, not reported separately, amounted to \$149,000,000 in January-June 1951; \$159,000,000 in July-December 1951; and \$189,000,000 in January-June 1952.
†Less than the unit indicated.

Table III.—Canada: Trade by Main Groups

(In millions of Canadian dollars)

Commodity groups	All countries		United States		United Kingdom	
	Jan.-June 1951	Jan.-June 1952	Jan.-June 1951	Jan.-June 1952	Jan.-June 1951	Jan.-June 1952
Exports:						
Agricultural and vegetable products	355.9	489.9	110.0	119.5	97.8	138.9
Animals and animal products	174.9	111.5	140.2	74.4	8.9	13.0
Wood, wood products and paper	643.1	694.2	535.9	524.4	55.1	97.8
Iron and products	143.4	228.3	83.7	96.4	5.9	14.6
Nonferrous metals and products	252.9	357.8	137.5	167.4	74.5	114.6
Nonmetallic minerals and products	62.2	71.9	44.8	48.9	5.2	7.3
Chemicals and allied products	60.4	64.6	34.3	37.3	4.2	5.6
Miscellaneous commodities	47.4	71.4	23.4	45.0	1.9	2.1
Total	1,740.2	2,089.6	1,109.8	1,113.3	253.5	393.9
Imports:						
Agricultural and vegetable products	288.9	235.8	112.1	109.4	9.2	9.3
Animals and animal products	68.6	44.5	46.4	26.9	7.4	4.2
Fibers, textiles and textile products	285.9	175.5	139.6	96.9	81.6	39.8
Wood, wood products and paper	69.3	62.6	63.9	58.0	1.9	2.1
Iron and products	687.0	731.6	594.9	644.9	70.5	55.7
Nonferrous metals and products	148.3	134.9	105.0	88.1	19.9	19.9
Nonmetallic minerals and products	313.8	285.3	204.9	188.5	15.3	12.2
Chemicals and allied products	101.7	91.1	88.7	81.6	7.6	5.5
Miscellaneous commodities	138.9	189.0	115.6	163.5	11.2	12.7
Total	2,102.4	1,950.3	1,471.1	1,457.8	224.6	161.4

increase in terms of value of 20% over the similar period of 1951. Adjusting for price changes, this was a 17% increase. Imports, on the other hand, totalled \$1,950,000,000, a decline of about 8% compared with the imports in the first half of 1951. The falling off was almost entirely in consumer goods. Imports of capital goods expanded somewhat.

Trade with the United States continued to show a merchandise deficit. Imports fell slightly during the first six months, but exports remained about the same as in the first half of 1951. The United States, which had taken 64% of Canada's exports in January-June 1951, reduced its share in the same period of 1952 to 53%, although in terms of money value the amount was nearly the same.

The paramount factor in the heavy 1952 exports was the large overseas business in Canadian grain, lumber and metals. Canada's exports, for example, to the United Kingdom, in the January-June 1952 period were 55% higher than in the same period of 1951; exports to the other commonwealth countries were 40% higher and to western Europe about 67% higher. Canada's imports in the first six months, far from compensating for increased exports, showed declines with most major trading partners. The commonwealth countries' exports to Canada, including those of the United Kingdom, declined from \$371,000,000 in January-June 1951 to only \$253,000,000 in the same six months of 1952. Continental western Europe's exports were 7% less, leaving a large deficit in their trade balance with Canada.

The Canadian dollar continued to sell at premium prices in the United States, rising to a 19-year premium of 104½ in July. This reflected the country's extremely favourable export position in 1952 and the continued large influx of capital, largely from the United States.

Latin America.—The foreign trade of the 20 Latin-American republics in 1951 rose to high levels on both the export and import side. Only incomplete data were available for the first

Table IV.—Latin-American Trade

(In millions of dollars)

Country	Exports (f.o.b.)			Imports (c.i.f.)		
	1949	1950	1951	1949	1950	1951
Total Latin America	5,647	6,529	7,844	5,331	5,234	7,513
Argentina	1,000	1,100	1,190	1,040	930	1,360
Bolivia	103	99	150	78	51	101
Brazil	1,089	1,346	1,757	1,116	1,098	2,012
Chile	297	282	370	305	248	329
Colombia	321	396	487	265	364	365
Costa Rica	31	35	39	43	46	56
Cuba	593	657	786	487	556	691
Dominican Republic	74	87	109	51	47	53
Ecuador	33	63	52	53	48	64
Guatemala	52	68	76	68	71	81
Haiti	31	38	50	31	36	45
Honduras	52	57	78	37	37	43
Mexico	433	466	572	493	556	823
Nicaragua	16	27	37	24	28	34
Panamá	14	13	14	71	71	74
Paraguay	33	33	*	31	21	*
Peru	151	190	251	167	175	260
El Salvador	54	70	86	41	50	*
Uruguay	192	254	236	181	200	316
Venezuela	1,078	1,248	1,471	749	601	722

*Not available; estimated in total.

half of 1952, but these showed a tendency for imports to increase further in value and for exports to fall off to some extent for most countries with a few exceptions, of which the most important were Venezuela and Cuba.

Data from United States sources indicated that imports by the 20 Latin republics from the United States amounted to \$1,902,000,000 in the first half of 1952, about 2% less than in the last part of 1951 but well above any prior semiannual

totals except those of 1947. Exports from those countries advanced 13%, to \$1,661,000,000, a total exceeded only in the first six months of 1951 when a peak of \$1,872,000,000 had been reached. The \$241,000,000 excess of imports over exports, although contrasting sharply with an export surplus of \$65,000,000 a year earlier, was only about half as large as in the second half of 1951. The five principal trading partners of the United States in Latin America—Brazil, Mexico, Cuba, Venezuela and Colombia—took about 75% of United States total exports to that area, a slightly greater percentage than a year earlier.

Some of the republics, including Brazil, Argentina, Uruguay and Chile, found it necessary toward the end of 1951 to strengthen their controls over purchases from the United States. The surplus of imports over exports in merchandise trade continued in 1952 to be a drain on Latin-American dollar assets and an important factor in the rise in short-term commercial debts of some of the countries, especially Brazil. The Latin-American republics continued to enjoy substantially more favourable terms of trade in their transactions with the United States than prior to the Korean invasion in June 1950, despite some decline in those terms since the second quarter of 1951.

The advance in Latin-American exports to the United States in 1951 over 1950 was about 15%, compared with a 31% increase in their exports to the countries of the Organization for European Economic Cooperation (O.E.E.C.). For the first six months of 1952 there were indications that Latin-American exports to the United States almost equalled the half-yearly average for 1951, while shipments to the O.E.E.C. countries dropped. Substantial reductions in exports to the United Kingdom, Italy and Belgium greatly outweighed increases to Germany and Sweden. On the import side, it appeared that the United States continued in 1952 to supply about one-half of all Latin-American imports, or the same proportion as in 1951. In the first six months of 1952 there was a marked drop in imports from France, Italy and Sweden, although important increases from the United Kingdom, Germany and Belgium.

Western Europe.—Compared with the last half of 1951, the combined trade of the 17 European countries comprising the O.E.E.C. stagnated or fell during the first six months, and particularly the second quarter, of 1952. Exports of the group, which totalled \$14,293,000,000 in the second half of 1951, declined to \$13,878,000,000 in January-June 1952. Only the United Kingdom, the Netherlands, Greece and Turkey showed increases, and all of these were small. The O.E.E.C. member countries also showed a small import decline from \$17,201,000,000 in the second half of 1951 to \$17,102,000,000 in the first six months of 1952.

In terms of value, exports showed a decline to the level of the second quarter of 1951, about 60% above the 1948 level, but in terms of volume, the second quarter 1952 index of 163

(1948=100) was the lowest since the third quarter of 1950. The same situation obtained in regard to imports. The volume index of 124 in the second quarter of 1952 touched the lowest level since the third quarter of 1950 when the index was 116.

Table V.—Trade of O.E.E.C. Countries Combined, by Areas of Origin and Destination*

Country	Imports (i.o.b.) (In millions of dollars)			Exports (f.o.b.)		
	Jan.-June			Jan.-June		
	1951	1951	1952	1951	1951	1952
Total trade	16,474	17,201	17,102	12,855	14,293	13,878
Trade with:						
Metropolitan member countries	6,301	6,711	6,614	6,281	6,736	6,478
Overseas territories	2,260	2,285	2,459	1,599	1,924	2,002
Nonmember countries	7,913	8,205	8,029	4,975	5,633	5,398
U.S.A.	2,051	2,367	2,431	936	874	891
Canada	396	707	685	264	268	217
Central and South America	1,202	1,306	1,074	903	1,068	944
Nonmember sterling area	2,135	1,687	1,824	1,478	1,875	1,666
Eastern Europe	670	932	801	555	720	752
Other	1,459	1,206	1,214	839	828	928

*The O.E.E.C. countries are: Austria, Belgium-Luxembourg, Denmark, France, Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Netherlands, Norway, Portugal, Sweden, Switzerland, Trieste, Turkey and United Kingdom.

The year 1952 saw a setback in the liberalization of intra-European trade. Large strides forward had been taken in western Europe, under the impetus of the Marshall plan, toward abolishing the restrictions on trade among the member nations of the O.E.E.C., but in early 1952 Europe's largest traders, the United Kingdom and France, reimposed quantitative restrictions on their imports. It should be noted, however, that Italy completely liberalized its trade with O.E.E.C. countries and that Germany also further liberalized its imports. Although the volume of intra-European trade varied widely in the postwar period, the general trend was a steady increase.

The first two quarters of 1952, however, showed a pronounced downward trend from the average of 1951. Despite this, the member countries remained each others' best customers, with approximately 47% of their exports being shipped to each other. Another 15% moved to the overseas territories of the member countries and the remainder went to nonmember countries.

The O.E.E.C. countries as a group in the first six months of 1952 showed a considerable increase in their gold and dollar payments deficit over the previous year. This could be accounted for in large part by their substantially increased imports from North America, which in the first quarter of 1951 amounted to 14% of their total imports and in the first half of 1952 amounted to 22%. At the same time the European nations were selling less to the United States and Canada. Western Europe sold only 8% of its exports during the first half of 1952 to North America.

The situation in the various O.E.E.C. member countries varied considerably. French foreign trade showed a serious deterioration during the first six months of 1952, compared with the corresponding period for 1951. In 1952 imports increased substantially and exports declined; so that the trade deficit rose from \$88,000,000 in January-June 1951 to \$474,000,000 in the same period of 1952, an increase of more than five times. French trade with the United States also showed a marked deterioration—exports declined by 17% between January-June 1951 and the same months of 1952 and imports increased by 20%, leaving a trade deficit of \$217,000,000 for the first six months of 1952 compared with \$105,000,000 for a like period of 1951. Italy, too, was running a large foreign trade deficit of about \$1,000,000,000 at an annual rate. Other countries showing increased trade deficits in the first six months included Austria, Portugal and Sweden.

On the other hand, several European nations made substantial improvements in their trade positions in the first six months. Notable among these were Germany, the Netherlands, Switzerland and Denmark. Germany emerged in the second quarter of



ITALIAN-MADE Vespa motor-scooters wheeling past an arch in Rome. These low-cost vehicles averaged about 125 mi. to the gallon of gas and were popular with families unable to afford automobiles. They reached the U.S. market in 1952 through a large mail-order house

1952 with a substantial trade surplus.

Belgium continued its surplus of the year before at a somewhat increased rate. Belgium's continuing extreme creditor position made necessary a new agreement within the European Payments union, as its export surplus continually outran agreed quotas. A solution was found at least temporarily under which Belgium received an additional payment from the E.P.U., extended further credit to members, increased its imports by placing defense orders in France and the United Kingdom and received a credit of \$50,000,000 from the International Monetary fund.

Table VI.—United Kingdom Trade

	(In millions of pounds sterling)			
	Monthly averages or calendar months		1952	
	1951	1951	1952	1952
Exports of U.K. goods	193.4	220.0	239.5	209.5
Re-exports	11.2	10.3	18.3	9.9
Total exports	204.6	230.2	257.8	219.5
Total imports	282.7	336.1	328.1	305.9
Balance	-78.1	-105.9	-70.3	-86.4
With dollar area				
Total exports	26.3	32.4	29.7	29.8
Total imports	42.9	65.4	70.0	70.4
Balance	-16.6	-33.0	-40.3	-40.6
With nonsterling O.E.E.C.				
Total exports	57.9	59.4	59.8	54.4
Total imports	72.5	89.2	84.1	71.6
Balance	-14.6	-29.8	-24.3	-17.2
With the sterling area				
Total exports	93.2	106.7	131.4	101.4
Total imports	118.0	122.5	119.5	119.9
Balance	-24.8	-15.8	+11.9	-18.5
With rest of world				
Total exports	27.2	31.7	36.8	34.2
Total imports	49.3	59.0	54.7	44.0
Balance	-22.1	-27.3	-17.9	-9.8

Totals do not necessarily add because of rounding.

United Kingdom.—The first half of 1952 brought a substantial improvement over the preceding year in Britain's trading position. That country's adverse trade balance for this period totalled \$1,316,000,000, or \$518,000,000 less than that in the second half of 1951 and \$227,000,000 less than the figure for

the first half of 1951. The chief factor accounting for this improvement was an 8% decrease in imports, from \$5,762,000,000 in July–December 1951 to \$5,325,000,000 in January–June 1952. This decline in imports included a significant reduction, of approximately 14%, in purchases from nonsterling countries. The increase in the value of imports in the first half of 1952 over the same period of 1951 was accounted for by the fact that prices of goods purchased by the United Kingdom in the early months of 1952 were higher on the average than in 1951.

The value of United Kingdom exports in the first half of 1952 was \$3,772,000,000, which was almost identical with the latter half of 1951 but well above the first half, when exports totalled \$3,472,000,000. The significant change in the export picture was a drop of 13% between the value in the first and second quarters of 1952. This was accounted for in part by the new restrictions placed on imports by several commonwealth countries, but also to some extent by declines in the general demand for British exports.

Attempts to decrease the dollar trade deficit continued to be frustrated. While in the first half of 1951 this deficit with the dollar area totalled about \$417,000,000, the first six months of 1952 showed a deficit of \$679,000,000, an increase of 63%. Defense support aid from the United States, totalling \$300,000,000 for the period ending June 30, 1952, enabled Britain to maintain imports for supporting defense production on an otherwise impossible scale.

Table VII.—Value of United Kingdom Imports
(In millions of pounds sterling)

Commodity	1951 first half	1951 second half	1952 first half
Total	1,856	2,058	1,902
Food	524	487	547
Grain and flour	120	127	153
Meat	104	109	105
Dairy produce	86	80	77
Sugar, unrefined	49	55	54
Beverages and cocoa	97	72	96
Fresh fruit and vegetables	68	44	62
Beverages and tobacco	114	137	119
Materials and manufactures	902	1,073	942
Timber	71	149	82
Woodpulp	48	77	69
Paper and board	34	51	28
Raw cotton	116	127	78
Sheep's and lamb's wool	168	70	88
Oils, oilseeds and nuts	70	103	88
Rubber, raw	74	84	61
Crude petroleum	61	100	120
Refined petroleum	74	67	52
Nonferrous metals and manufactures	72	96	106
Iron and steel manufactures	15	28	61
Machinery	24	31	53
Textile yarns and manufactures (including clothing)	75	90	56
Other imports	316	361	294

Britain's terms of trade in 1952 were decidedly more favourable than in the preceding year. Although import prices did not show a decline below the average for 1951 until June 1952 (and then only a one point reduction), the prices of exports increased slowly but steadily. The over-all export index (1951=100) was 106 for the first half of 1952, compared with 105 in the second half of 1951 and 95 in the first half.

Near East.—Egypt's favourable balance of trade of January–June 1951 of \$10,400,000 was turned into a deficit of \$130,000,000 in the corresponding period of 1952. This abrupt shift put a drain on the country's dollar and sterling balances and caused the government in July to intensify its exchange restrictions on luxury and semiluxury goods.

Israel's trade deficit remained almost unchanged from 1951 at an annual rate of about \$290,000,000. This deficit was met by Export-Import and other bank loans, new investment in Israel, United States grants and gifts from world Jewry.

Turkey's exports rose in the first six months by about 12% over the 1951 average. Imports, however, stepped up by Turkey's capital development program, rose by nearly 30% in the same period.

Following the withdrawal of the British from Iran with the

nationalizing of the oil industry there and the loss of gold from oil sales, Iranian exports dropped from a high of \$818,000,000 in 1950 to an annual rate of \$126,000,000 during the first half of 1952. Imports also fell, though far less drastically, as Iran drew on reserves for necessary supplies. These totalled \$169,000,000 at an annual rate during January–June 1952, compared with \$229,000,000 in 1951.

Union of South Africa.—The South African balance of payments on current account, in balance in 1950, showed a deficit of \$305,000,000 in 1951 which continued into 1952. The primary cause of this imbalance, in addition to declines in the values of exported goods, was an increase in imports, resulting from a relaxation of import controls in 1951. The government established quotas to curtail imports in 1952, allowing imports of industrial raw materials and maintenance parts at 75% of the 1951 level and of consumer goods at 66% of 1951 imports. These, together with the larger than anticipated inflow of foreign capital, were expected to secure a satisfactory balance of payments account for the year.

Far East.—India's foreign trade in the first six months of 1952 continued the adverse trend of the second half of 1951, with a deficit of \$730,000,000 at an annual rate compared with \$490,000,000 for the year 1951. As a result, India's sterling balances were drawn down by nearly 1,000,000,000 rupees.

The heavy decline in the first half of 1952 in the market prices of rubber and tin caused Malaya to have an adverse trade balance of \$13,600,000 compared with a favourable balance of \$320,400,000 during the same period of 1951. The United Kingdom continued to be Malaya's best customer, and Malaya obtained the major portion of its essential requirements from sterling sources. Shipments to the dollar area declined in value terms because of the sharp fall in rubber prices (tin shipments more than doubled in value), but new restrictions on imports from the dollar area enabled Malaya to maintain a favourable balance with the United States, although at a much lower level than in the corresponding period of the previous year.

The foreign trade of Hong Kong in January–June 1952 was much smaller than in the first six months of 1951. Exports declined by more than 50% and imports by more than 25%. The major cause of this change was the drastic reduction in trade with China, following the severe import and export controls introduced in Hong Kong in June 1951. The value of exports to China in the first six months was reduced to 15% of the level in the corresponding period of 1951. Imports from China declined to about 75% of their former level. Hong Kong's exports to the United States continued a steady decline as a result of the wider application of United States restrictions prohibiting importation of goods of China origin.

Japan's exports, which had increased rapidly between 1950 and 1951, as Japanese production climbed back to pre-World War II levels and well above, began to level off in the early months of 1952, and showed a slight downward movement in the second quarter. Imports showed declines from a year earlier of about 6%.

Among the remaining far eastern countries there was a fairly consistent trade pattern. Burma, Ceylon, Indonesia and the Philippines all reached record export levels in 1951, largely because of high prices for their leading export commodities, but, following severe declines in the prices of rubber, tin, copra and tea, their exports began to decline in the first quarter of 1952 and, particularly in Ceylon and Indonesia, dropped still further in the second quarter. In early 1952 imports were maintained at about the high level of 1951; then they tapered off in Ceylon and the Philippines but continued to climb in Indonesia and Burma.

Pakistan's exports in the first quarter of 1952 rose to their

highest level since the establishment of that country, and then fell abruptly in the second quarter. The reduction was primarily the result of a decline in world demand for cotton and jute. In order to stimulate exports of jute, it reduced export duties and prices substantially at the middle of the year. Imports, which had also risen to a record peak early in 1952, were put under restrictions in August after Pakistan's balance of payments deficit more than doubled between the first and second quarters.

Oceania.—New Zealand's trade showed a gain in exports, rising from \$693,000,000 in 1951 to an annual rate during the first quarter of 1952 of \$749,000,000. This was accomplished despite sharply decreased earnings on wool, since large shipments of meat to Great Britain at high prices tended to offset that loss. The increase in exports, however, did not begin to be large enough to pay for the 50% rise in imports—from \$596,000,000 in 1951 to an annual rate in January–March 1952 of \$908,000,000. Following agreements at the commonwealth conference in late 1951 to achieve a surplus of £25,000,000 with nonsterling countries, New Zealand reimposed exchange restrictions and other import control measures.

With the drastic decline in wool prices, the value of Australia's exports in the first six months of 1952 dropped to a level nearly 30% below the 1951 peak. Exports in 1951 totalled \$2,204,000,000; in January–June 1952, on an annual-rate basis, they were \$1,576,000,000. This latter figure represented a volume of exports about 12% above 1948.

Imports, many of which had been ordered under contract earlier, reached an all-time peak of \$3,144,000,000 at an annual rate during the first quarter of 1952. Severe restrictions on imports were imposed in March to halt the drain on reserves, and imports declined in the second quarter of 1952 to an annual rate of \$2,182,000,000, still nearly 15% above the 1951 level of \$1,911,000,000. The commonwealth treasurer, in presenting the new budget on Aug. 6, said that Australia's international reserves had fallen to £A362,000,000 on June 30, 1952, compared with £A843,000,000 a year earlier. He also stated that the import restrictions announced on March 8 had become fully effective and had brought Australia's immediate balance of payments problem under control. (See also BUSINESS REVIEW; EXCHANGE CONTROL AND EXCHANGE RATES; INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT; INTERNATIONAL MONETARY FUND.) (F. L. H.)

International Wheat Agreement: see AGRICULTURE; WHEAT.

Interstate Commerce Commission. The duties and powers of the Interstate Commerce commission are set forth in the Interstate Commerce act, passed in 1887 and later amended in many important particulars, and in related acts. The act is divided into four parts and deals with the regulation of railroads, oil pipe lines, motor and water carriers and freight forwarders. The commission's regulatory powers extend, among other things, to carrier charges; to questions involving the valuation and financial reorganization of railroads; to the issuance of securities; to acquisitions of control of carriers by other carriers or persons; to accounting practices and the filing of reports; and to matters involving proposed institutions of new services by motor and water carriers or freight forwarders or the construction, abandonment and operation of lines of railway.

Only minor amendments were made in the act in 1952, but various proposals, some involving important changes, received public discussion. Chairman John L. Rogers resigned as of April 30 for reasons of health and was succeeded as chairman by Com-

missioner J. Haden Alldredge. Commissioner Clyde B. Aitchison, longest in service of any commissioner, retired on July 10. Commissioners Anthony F. Arpaia and Martin Kelso Elliott succeeded to these vacancies. Commissioners Charles D. Mahaffie and J. Haden Alldredge were reappointed for seven-year terms.

Increased costs and an unsatisfactory credit situation led to the granting of a further advance in railroad freight rates, effective generally on May 2 and until Feb. 28, 1954. The authorized increases since mid-1946 aggregated 78.9%. Competition and other factors had caused, however, a lesser actual overall increase. Generally, the rates of other carriers advanced in the year.

Notable progress was achieved on May 30, when, after long investigation, uniform rail class rate scales became effective east of the mountain-Pacific territory and a uniform classification became applicable country-wide.

Diesel power and other technological improvements made further contributions to transportation. The extensive car shortage which followed the beginning of hostilities in Korea had declined, but lack of materials and other factors had caused inadequate additions to car supplies. Other carriers felt the effects of shortages of materials.

Aside from increased costs, regulated carriers faced such problems as passenger-train deficits, high costs of handling small shipments, extensive competition of private and exempt carriers, insufficient control of leased motor vehicles, work stoppages and shifts in industry locations, air transport competition, highway and street congestion and uncertain international conditions. The transportation milieu was one of severe interagency and other competition, with marked complication of the problems of the commission. Its staff had become seriously inadequate in size. (See also RAILROADS.) (J. H. A.)

Intestinal Disorders: see STOMACH AND INTESTINES, DISEASES OF THE.

Intoxication, Alcoholic. Advances during 1952 in the fields of medicine, psychiatry and social work, together with expanding programs of community action, made more evident the effectiveness of dealing with alcoholism as a public health problem.

The medical profession continued its active interest in alcoholism. In March at the fourth annual Assembly of General Practitioners in Atlantic City, N.J., a seminar in diagnosis, management and rehabilitation of alcoholics was conducted with representatives of many other organizations participating.

A survey showed that 38 states had passed bills for the control and prevention of alcoholism, and that these state programs varied from those which were in their beginning stages to some which were carrying out broad, well-planned programs of active rehabilitation.

As a result of another survey, it was shown that there were 43 alcoholic clinics in the country; some functioned as parts of state tax-supported programs, and some under the auspices of municipal health departments, while still others were operated by voluntary social agencies.

Another survey indicated that more than 1,300 hospitals were accepting intoxicated persons for in-patient hospital care during the acute phase of this condition, compared with 97 hospitals which did so in 1944.

On the voluntary level, there were 60 local committees conducting active programs which were stimulated and guided through the efforts of the National Committee on Alcoholism. There were also 36 information centres for the guidance of alcoholics and their families which had been established by local committees.

As a result of the efforts of local committees and state sponsored programs, more schools were revising their curricula and introducing more scientific concepts in their texts than in preceding years. The Yale summer school of alcohol studies was attended by 165 persons, representing many different fields of scientific and social activity.

An outstanding development in the field of education was the evening course in problems of alcoholism in industry and business, given for the first time in the fall of 1952. This course was offered to meet the needs of businessmen and industrial workers, and was co-sponsored by the Boston Committee on Alcoholism and the Personnel Managers Club of the Boston chamber of commerce.

World-wide interest in the problem, and the growing participation of national and international health agencies in the study of this illness, had brought about a most important development whereby complete sets of the subject-classified archive of the alcohol literature of the Yale Center of Alcohol Studies could be placed in depository libraries in many parts of the world. This project was made possible by the interest of the World Health organization.

Tetraethylthiuram disulphide (Antabuse) had been established as a useful tool, although its indications and limitations were quite clear. Vitamins were considered definitely important in treatment. The use of ACTH and cortisone remained in the experimental stage. The standard (sedative) and analgesic drugs were being widely used, especially for symptomatic relief and for the "hangover."

There was evidence that joint treatment methods, combining ministrations of medical adjuncts with psychotherapy and group work of the Alcoholics Anonymous, were being successful where single methods had previously failed. (See also LIQUORS, ALCOHOLIC; PSYCHIATRY.) (M. Mo.)

Inventions: see CERAMIC PRODUCTS; ELECTRONICS; MUNITIONS OF WAR; PATENTS; PRINTING; STANDARDS, NATIONAL BUREAU OF.

Investment Banking: see BANKING.

Investments, Foreign, in the U.S.: see FOREIGN INVESTMENTS.

Iowa. Iowa, popularly known as the "Hawkeye state," was admitted to the union in 1846. Located in the north central region, it comprises 56,290 sq.mi., of which 245 sq.mi. are inland water surface. The census figures for 1950 showed a population of 2,621,073, an increase of 3.3% over the 1940 figure; 52.3% were rural, a decrease of 4% since 1940. The capital and largest city is Des Moines, with a 1950 population of 177,965. Other chief cities are Sioux City, 83,991; Davenport, 74,549; Cedar Rapids, 72,296; Waterloo, 65,198; Dubuque, 49,671; and Council Bluffs, 45,429.

History.—The general assembly of the state meets biennially in the odd-numbered years. The next assembly was to convene in Jan. 1953. Iowa's state officers in 1952, all Republicans and elected in 1950, were: governor, William S. Beardsley; lieutenant governor, W. H. Nicholas; secretary of state, Melvin D. Synhorst; auditor, Chet B. Akers; treasurer, M. L. Abrahamson; secretary of agriculture, Clyde Spry; attorney general, Robert L. Larson. Iowa's United States senators were Bourke B. Hickenlooper (Republican, re-elected 1950) and Guy M. Gillette (Democrat, elected 1948). Iowa's eight representatives in congress were Republicans.

Education.—During the 1950-51 school year Iowa had 3,813 public elementary school districts; 836 public high school districts; and 16 junior colleges. The elementary schools in the 1950-51 school year had 370,614 students; the high schools, 114,935. The junior colleges, in 1951-52, had 1,642 students. The number of teachers and superintendents in the public schools in 1950-51 was 23,045.

There were 26 colleges and universities in the state, with a total 1952 enrolment of 29,315. The state supports three institutions: the State University of Iowa, Iowa City; the Iowa State College of Agriculture and Mechanic Arts, Ames; and the Iowa State Teachers college, Cedar Falls. The enrolment at these three schools for the fall semester of 1952 was 17,094, an increase over 1951 of 133; of this number, 1,384 were veterans, a decrease of 1,390 from 1951.

The state superintendent of public instruction is Jessie M. Parker. The state appropriated for school aid in the legislative session of 1951 a total of \$45,872,500 annually for the 1951-53 biennium.

Social Insurance and Assistance, Public Welfare and Related Programs.—The 1952-53 state appropriation for old-age assistance was \$14,500,000; for aid to dependent children, \$2,175,000; for child welfare, \$220,000; for emergency relief, \$40,000; and for aid to the blind, \$275,000. Contributions to the state unemployment fund, as of June 30, 1952, were \$4,316,563.81; during the fiscal year 1951-52, \$4,015,959.89 was paid out of this fund in benefit payments. The reserve fund, as of June 30, 1952, totalled \$105,792,009.06.

Iowa's three penal and two correctional institutions had 2,445 inmates as of Aug. 31, 1952. The hospitals for the insane numbered four, with 5,663 patients; there were also two homes for the feeble-minded, with 3,443 patients. Other state institutions are the orphanage at Davenport and the State Juvenile home at Toledo.

Communications.—Iowa has a total of about 5,800 mi. of paved highway and 62,000 mi. of gravelled roads. The state is served by 12 major railroads. Class I roads have a total of 8,584 mi. of track. In 1951 these roads carried 4,979,273 passengers and 104,810,855 tons of freight. There are 356 mi. of electric interurban roads in the state; during 1951 they carried 422,476 passengers and 4,419,079 tons of freight. The number of passengers carried by motorbus during 1950 was 19,170,286. There were, in 1951, 110 mi. of oil pipe line, 1,679 mi. of gasoline pipe line and 2,215 mi. of natural gas pipe line in Iowa. In 1952 there were about 893,000 automobiles and 190,000 trucks in Iowa. The state is served by three national air lines. There are ten major airports in the state.

There were in 1952 about 836,000 telephones in Iowa, 53 radio stations and 2 television stations. There were about 70,000 mi. of electric transmission lines in the state and 86.2% of all farms were electrified.

Banking and Finance.—There were, as of June 30, 1952, 558 state banks in Iowa. In addition, there were 164 bank offices, 229 small loan licensees and 222 credit unions under the supervision of the state banking department. Total assets of the 558 state banks on June 30, 1952, were \$1,684,776,491 (an increase of \$28,733,554 over the 1951 figure); total deposits were \$1,555,087,192 (an increase of \$18,472,210 over the 1951 figure). As of March 31, 1952, there were 97 national banks in Iowa, with total deposits of \$817,826,000 and total resources of \$834,768,000.

The revenue received from all special taxes in Iowa for the fiscal year ending June 30, 1952, was \$177,958,478.86, compared with \$172,915,486 in 1951. The largest single item was the state 2% sales tax, which brought in \$52,507,742.34; the gasoline tax amounted to \$39,734,736.34; the motor vehicle tax, \$32,474,556.10; the income tax, \$22,990,612.48. From these tax receipts, \$95,323,490.17 went in the general fund of the state; the balance to the road use fund, Iowa has no state debt. Real estate taxes, assessed locally, totalled \$210,665,469 in 1952.

Agriculture.—Agriculture is the leading industry in Iowa. The state has 25% of all the grade A farmland in the nation and produces more than 10% of the nation's food. There were 199,427 farms in Iowa in 1951, compared with 200,401 in 1950. These farms had a total acreage of 34,714,546 ac.; the average size was 174.1 ac. Of the total Iowa farms, 49.9% were owner-operated and 50.1% were tenant-operated.

The total cash income of Iowa farmers for 1951 was \$2,372,705,000; of this total, \$2,070,725,000 was from livestock; \$290,270,000 from crops; and \$11,710,000 from government payments. The total farm income was \$257,836,000 more than in 1950. On Jan. 1, 1952, there were 49,262 auto trucks on Iowa farms; 252,392 tractors, 65,865 grain combines and 98,700 mechanical corn pickers; all figures showing an increase over the 1951 figures.

Table I.—Principal Crops of Iowa

Crop	Indicated 1952	1951	Average 1941-50
Corn, bu.	680,337,000	471,780,000	532,801,000
Oats, bu.	215,320,000	182,886,000	205,288,000
Wheat, bu.	3,530,000	2,212,000	4,160,000
Barley, bu.	728,000	693,000	1,712,000
Rye, bu.	135,000	140,000	210,000
Potatoes, bu.	1,250,000	1,040,000	2,889,000
Hay, tons	6,754,000	6,961,000	5,497,000
Timothy seed, lb.	12,800,000	10,200,000	27,450,000
Soybeans, bu.	34,525,000	32,508,000	33,537,000

Source: U.S. Department of Agriculture

Table II.—Livestock of Iowa, Jan. 1

	1952	1951
Hogs	12,882,000	13,321,000
Cattle	5,507,000	5,208,000
Sheep	1,280,000	1,021,000
Horses	177,000	205,000
Mules	6,000	5,000

Manufacturing and Industry.—There were 3,856 manufacturing plants in Iowa in 1951, employing approximately 167,000 persons. The average weekly wage in 1951 was \$66.39. The estimated value of all manufactured products during 1951 was \$2,700,000,000. (M. Tr.)

Mineral Production.—Table III shows the tonnage and value of those mineral commodities produced in Iowa in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Iowa ranks 33rd among the states in value of its mineral output, with 0.35% of the U.S. total.

Table III.—Mineral Production of Iowa

(Short tons, except as noted)

Mineral	1950		1949	
	Quantity	Value	Quantity	Value
Cement (bbl.)	7,232,000	\$16,158,000	6,655,000	\$14,602,000
Clays	579,000	645,000	572,000	629,000
Coal	1,891,000	6,977,000	1,724,000	6,912,000
Gypsum	982,000	2,508,000	858,000	2,188,000
Sand and gravel	8,425,000	10,668,000	6,831,000	8,663,000
Stone	8,995,000	4,796,000	7,978,000	4,447,000
Other minerals . . . . .	...	21,000	...	17,000
Total		41,773,000		37,458,000

Iran (PERSIA). An independent kingdom of western Asia, Iran is bounded east by Pakistan and Afghanistan, north by the U.S.S.R., west by Turkey and Iraq and south by the Persian gulf and Arabian sea. Area: c. 634,413 sq.mi. Pop. (1951 est.; no census ever taken): 20,000,000. Language: mainly Persian, but Turki and Armenian in the northwest, Kurd in the west, Arabic in the south and Pashtu in the east. Religion: Moslem, mainly Shia but Kurds (750,000) are Sunni; Christian c. 50,000 Gregorian Armenians, a few thousand Catholic Armenians and 40,000 Nestorians; Jewish 80,000; and c. 10,000 Zoroastrian Parsees. Chief towns (1948 est.): Tehran (cap. 850,000); Meshed (250,000); Tabriz (214,000); Isfahan (205,000); Abadan (150,000); Shiraz (129,000); Resht (122,000); Hamadan (104,000). Ruler: Shahanshah Mohammed Riza Pahlavi; prime ministers in 1952: Mohammed Mossadegh (q.v.), Ahmed Ghavam es-Saltaneh (July 17-21) and again Mohammed Mossadegh.

History.—The year 1952 opened with the long-delayed elections to the 17th *majlis* (lower house of parliament) still in progress and the dispute between Great Britain and Iran over the ownership of the oil industry still unsettled. In Tehran the elections were completed during January, and all 12 seats were won by candidates of the National Front, Mohammed Mossadegh's government coalition. In the provinces, disorders and irregularities led to the suspension of the elections during February, when only some of the northern provinces had chosen their representatives; and even in some of these there was more than one claimant to some of the seats. When the *majlis* assembled in April, only 80 members were certified as legally elected, out of a full complement of 136, so that parliamentary sittings regularly took place with a bare quorum of members.

An attempt initiated in Dec. 1951 by representatives of the International Bank for Reconstruction and Development to negotiate a settlement of the Anglo-Iranian oil dispute ended in failure during March 1952. Mossadegh ordered the closure of all British consulates in Iran (except the administrative consulate at Tehran) by Jan. 21, on the grounds that the consuls were habitually interfering in Iranian affairs. Later in January, Mossadegh's government publicly refused its approval of the appointment of the new British ambassador, nominated in succession to Sir Francis Shepherd. Iranian relations with the United States also became more uneasy, and it was only after a period of uncertainty that the contract for the U.S. military and policy missions was renewed.

On the other hand, the Iranian government pursued friendly relations with most of the "iron curtain" countries. Trade agreements (including provision for the sale of oil) were concluded during the year with Hungary and Czechoslovakia, and were under negotiation with the U.S.S.R. and Poland. Frontier disputes with the U.S.S.R. were tacitly suspended, and the contractual date of termination of the soviet-Iranian fishery concession on the Caspian sea was allowed to pass without any attempt to enforce it. Because of the shortage of oil tankers, however, the National Iranian Oil company had no more success in selling oil to these countries than to private firms in other parts of the world. Despite many inquiries and negotiations (including offers from the United States, Italy, Japan,



LEGAL COUNSEL for the Anglo-Iranian Oil Co. conferring with an Aden official (in shorts) over seizure of a tanker carrying oil sold by Iran to Italy. The vessel pulled into Aden for repair in June 1952 and was held by injunction of the oil company which claimed the cargo was illegal while the nationalization of Iranian oil was still in dispute

India and South American countries), the only successful sale of oil made during the early part of the year was to an Italian company which was able to send a small tanker, the "Rose Mary," to take delivery. This ship was impounded at Aden during its return journey, pending a legal decision on the ownership of the oil.

As a result of the loss of oil revenues, the financial and economic position of the country became increasingly precarious, and the Communist-controlled Tudeh party became increasingly active and successful. Revenue only kept pace with expenditure by means of repeated loans from the National bank, and eventually by a surreptitious increase of the note issue. A national loan, launched by the government, was only moderately successful. In the industrial centres unemployment increased and disorders spread. At the end of May, Mossadegh dramatically flew to The Hague to conduct Iran's case at the International Court of Justice, which met in June to determine whether or not it was competent to adjudicate in the dispute between the British and Iranian governments.

On June 24, when the International court had completed its hearings, but before it had announced its decision, Mossadegh returned to Tehran. There followed an acute political crisis, arising from the growth of opposition to Mossadegh in the *majlis* and especially in the senate. He was constitutionally bound to present his formal resignation to the newly assembled *majlis*, which he did early in July. The *majlis* and the senate then voted that he should be reappointed prime minister, but did so in such a halfhearted manner that he refused to resume office unless he was granted full powers for six months to carry out a program of reforms. Part of his price was that he should himself be appointed minister of war; but the shah refused his

consent, on the ground that such an appointment would infringe his own control over the army. Mossadegh thereupon resigned again and on July 17 the *majlis* voted for Ahmed Ghavam es-Saltaneh in his place.

Ghavam was prime minister for barely four days. On July 21 riots broke out in Tehran at the instigation of Ayatollah Kashani (*q.v.*) and with the skilled co-operation of the Tudeh party. The Tudeh party, although officially outlawed since Feb. 1949, emerged unopposed and took control of the rioting mobs of Tehran. The shah personally ordered his troops, which had been called out to control the riots, to return to their barracks; and Ghavam, who was thus deprived of effective power, resigned in despair and went into hiding. On July 22 Mossadegh became prime minister again and the riots ended; on the same day The Hague court announced that, as Mossadegh had contended, it was not competent to adjudicate in the oil dispute.

The *majlis* then voted to Mossadegh the full powers which he had demanded, but he made little use of them. His efforts were again concentrated against the British. On Aug. 7, in a new note, he made a new but ambiguous offer to negotiate on the oil dispute. The reply, on Aug. 30, was a joint Anglo-American offer of terms, but these were at first indignantly refused. Encouraged perhaps by the arrival in Iran of Hjalmar Schacht, the German financial expert, and Alton Jones, president of a large U.S. oil company, Mossadegh was surer than ever that he could do without the British. On Sept. 24 he made written counterproposals, which included a demand for £49,000,000 (payable in dollars) as a precondition of any negotiation, this sum being allegedly owed to Iran by the Anglo-Iranian Oil company under the supplemental agreement of 1950 which the Iran government had refused to ratify. This "last offer" by Mossadegh was accompanied by public (but unofficial) threats to sever diplomatic relations if it were not accepted within ten days. (See also AGRICULTURE; SYRIA.)

Education.—Schools (1948): elementary 3,229, pupils, 386,266, teachers 14,781; secondary 284, pupils 36,353, teachers 2,350. Universities 2 (Tehran and Tabriz); university colleges 3.

Finance and Banking.—Budget (1950–51 est.) revenue 8,950,000,000 rials, expenditure 11,470,000,000 rials; (1951–52 est.) revenue 9,553,000,000 rials, expenditure 9,550,000,000 rials. Internal national debt (Dec. 1951): 7,360,000,000 rials. Currency circulation (March 1952) 6,810,000,000 rials. Gold and foreign exchange (Aug. 1952) U.S. \$181,000,000. Monetary unit: rial with an exchange rate of 91 rials to the pound sterling and 32.50 rials to the U.S. dollar.

Foreign Trade.—(1951): Imports 7,370,000,000 rials; exports 11,270,000,000 rials. Main sources of imports (1950): U.S. 26%; U.K. 29%; India 10%; Germany 6%; U.S.S.R. 5%; main destinations of exports: U.K. 26%; India 8%; France 5%; South Africa 5%. Principal imports (1950): cotton piece goods 13%; machinery and tools 12%; sugar 12%; tea 7%. Principal exports: petroleum 86%; rugs and carpets 2%.

Transport and Communications.—Roads (1948): 17,000 mi. (8,000 mi. suitable for vehicles). Licensed motor vehicles (1950): cars 12,000, commercial vehicles 12,000. Railways (1949): 1,750 mi.; passengers carried (1947) c. 1,600,000; freight carried (1948) c. 1,000,000 metric tons. Iranian airways: unduplicated route miles (1950) 5,077. Radio receiving sets (1950): 184,000.

Agriculture and Fisheries.—Main crops (metric tons, 1951): wheat 1,800,000; barley 740,000; cottonseed 41,000; jute (1950) 4,000; sesame seed (1950) 9,500; rice 360,000; sugar (raw value) 78,000; tea (1950) 7,600; tobacco (1950) 17,000; oranges and tangerines 46,000; olives (1950) 12,000; olive oil (1950) 1,000. Livestock (1950–51): cattle (1951) 3,900,000; sheep (1951) 8,520,000; horses 365,000; mules (1948–49) 42,000; buffaloes 10,000; camels 600,000; goats 7,000,000; chickens 13,000,000. Livestock products (metric tons, 1950): wool (clean basis) 9,000; butter 40,000. Fisheries (production of Société Mahie): sturgeon catch c. 5,000 tons, giving c. 30 tons of caviar.

Industry.—Fuel and power: coal (1948) 150,000 metric tons; crude petroleum (1951) 16,848,000 metric tons; electricity (1948) 200,000,000 kw.hr. Raw materials (metric tons, 1950 est.): copper ore 1,000; sulphur 600; red oxide 10,000; arsenic ore 500. Manufactures: cotton yarn (1949) 12,000 metric tons; cotton piece goods (1949) 30,000,000 m.; cigarettes (1950) 4,192,000,000; tobacco (1950) 3,848,000 metric tons; cement (1948) 58,000 metric tons.

Iraq. An independent Arab kingdom of Mesopotamia, Iraq is bounded by Syria, Turkey, Iran, the Persian gulf, Saudi Arabia and Jordan, and watered by the Tigris and Euphrates rivers. Area: 168,040 sq.mi. Pop.: (1950 est.) 5,100,000. Language: Arabic 67%, Kurdish 25%, others 8%. Religion: Mos-

lem 93.5%, Christian 5%, others 1.5%. Chief towns (pop., 1947 est.): Baghdad (cap., 552,000); Mosul (279,400); Basra (206,000); Kirkuk (148,300). Ruler, King Feisal II; prime ministers in 1952: Nuri Pasha es-Said and (from July 12) Mustafa el-Umari.

History.—In Jan. 1952, Averell Harriman, the director of the Mutual Security agency, announced that Iraq would be debarred from U.S. technical and economic aid because of its failure to comply with the provision of the Mutual Security act requiring recipients to contribute fully to the defense of the free world and to develop their capacity for self-defense to the best of their ability. In February the commander in chief of the British forces in the middle east visited Baghdad to discuss with the Iraqi government questions of collective security and the supply of war material and equipment. On March 16 the Iraqi parliament ratified the Arab security and economic aid pact which eventually came into force on Aug. 23 after it had also been ratified by Egypt, Syria, Jordan and Saudi Arabia.

In July, on the termination of the existing five-year financial agreement between the British and the Iraqi governments, a further agreement was signed by both countries by which Iraq's remaining blocked sterling balance (about £23,000,000) was released by the British government. The Iraqi government had expressed its intention of continuing to hold part of this money as part of the cover for Iraq's currency. It had also been agreed to set up machinery for regular exchanges of information on financial and economic matters and that Iraq's financial relationship with Great Britain would continue on the basis of common membership of the sterling area.

In May the Amir Abdul-Ilah, the regent of Iraq, accompanied by Nuri Pasha es-Said, the prime minister, paid a state visit to Spain. In August King Feisal II of Iraq visited the United States where he was the guest of Pres. Harry S. Truman. On his return he visited Great Britain and, with the regent, was the guest of Queen Elizabeth II at Balmoral.

Earlier, in June, the regent visited Amman at the time of the breakdown of the health of King Talal of Jordan. He advanced the view that as the question of the Jordan throne concerned the Hashemite family, a senior representative of that house should preside over the proposed council of regency in Jordan. But the Jordan cabinet rejected his contention.

In January the Iraqi prime minister, Nuri Pasha es-Said, when opening the new Zubair oil field near Basra, stressed the reliance of Iraq's economic development on the development of the Iraqi oil industry. On Feb. 7 the Iraqi government signed an agreement with the Iraq Petroleum company under which profits would be shared equally between the two parties. It was ratified a week later by the Iraqi chamber of deputies and by the senate. On April 23 the construction of the Iraq Petroleum company's transdesert pipe line from Kirkuk to Baniyas on the Syrian sea coast was completed. It was 556 mi. long.

On July 9 Nuri Pasha es-Said resigned and was succeeded as prime minister by Mustafa el-Umari. The new cabinet, announced on July 12, was a nonpolitical administration.

Throughout the year the program of the Iraq Development board made progress. In January the contract for the digging of the 40-mi. escape canal from Samarra on the upper Tigris to the Wadi Tartar depression was awarded to a British firm. The work would take four years to complete, and was designed to avert the flooding of the low-lying country along the river from Baghdad to its mouth. A further sum of 40,000,000 Iraqi dinars was being devoted to local flood control and land reclamation along the southern reaches of the river. In the north a large scheme for the boring of artesian wells had already made much progress. The resulting supplies of water were intended for crop irrigation to encourage the nomadic tribes to settle permanently

on the land. Finally, in June a contract for the building of a barrage across the Euphrates at Ramadi was awarded to a French company.

A trade agreement was signed in May between the Iraqi and the west German governments. (O. M. T.)

Education.—Schools (1949–50): primary 1,194, pupils 196,336, teachers 6,740; intermediate 133, pupils 22,899, teachers 492; secondary 71, pupils 7,222, teachers 983; vocational 10, students 1,275, teachers 64. Institutions of higher education 10, students 5,200, lecturers 124.

Finance and Banking.—Budget (1949–50): revenue 27,000,000 Iraqi dinars, expenditure 32,000,000 Iraqi dinars; (1950–51 est.) revenue 27,000,000 Iraqi dinars, expenditure 28,000,000 Iraqi dinars. Currency circulation (July 1952) 30,000,000 Iraqi dinars. Bank deposits (April 1952) 17,300,000 Iraqi dinars. Monetary unit: Iraqi dinar at par with the pound sterling and with an exchange rate of 0.357 Iraqi dinars to the U.S. dollar.

Foreign Trade.—(1951) Imports 51,000,000 Iraqi dinars; total exports 159,300,000 Iraqi dinars, oil exports 30,100,000 Iraqi dinars. Main sources of imports (1951): U.K. 34%; U.S. 14%; Italy 7%; Ceylon 5%. Main destinations of exports: U.K. 36%; the Netherlands 14%; India 10%; Japan 7%. Main imports (1949): textiles 18%; tea and sugar 12.6%; iron and steel 12.1%; boilers 11.1%. Main exports (1951): oil 51%; barley 21%; dates 9%.

Transport and Communications.—Roads (1949): 4,500 mi. Licensed motor vehicles (Dec. 1950): cars 8,789; commercial 10,292. Railways (July 1949): 1,027 mi. Traffic (1947–48): passenger-miles 329,000,000; cargo-miles 367,000,000. Air transport (1949): passenger-miles 5,861,000; cargo net ton-miles 118,600. Telephones (1951): 17,630. Radio receiving sets (1950): 30,000.

Agriculture.—Main crops (metric tons, 1950): barley 900,000; wheat (1951) 650,000; rice (1951) 180,000; dates (1949) 170,000; tobacco 60,000; cotton, ginned 8,000; cottonseed (1951) 17,000; wool, clean 20,000; livestock (1949): sheep 7,055,000; goats 1,849,000; cattle 1,322,000; buffaloes 130,000; camels 291,000; horses (1950) 184,000; donkeys 52,000; donkeys 413,000.

Industry.—Industrial establishments (1948): 1,762; persons employed 127,248. Fuel and power: crude oil production (1951) 7,980,000 metric tons; electricity (1949, public utilities only) 38,000,000 kw.hr.

Ireland, Northern. The six counties of Antrim, Armagh, Down, Fermanagh, Londonderry and Tyrone together form a part of the United Kingdom of Great Britain and Northern Ireland. Northern Ireland has its own parliament and executive (with limited powers for local purposes) and is represented in the United Kingdom parliament by 12 members. Area: 5,451 sq.mi. Pop.: (1937 census) 1,279,745; (1951 census) 1,370,709. Language: English. Religion (1951 census): Roman Catholic 471,329 (34.39%), Presbyterian 410,259 (29.93%), Anglican 353,025 (25.75%), Methodist 66,544 (4.86%), other (or not stated) denominations 69,552 (5.07%). Chief towns (pop.: first figure, 1937 census; second figure, 1951 census): Belfast (cap., 438,086; 443,670); Londonderry (47,813; 50,099); Bangor (16,284; 20,615). Governors in 1952, the Earl Granville and (from Dec. 1) Lord Wakehurst; prime minister, Viscount Brookeborough of Colebrooke (formerly Sir Basil Brooke).

History.—The death of George VI in Feb. 1952 was mourned throughout the province and the accession of Elizabeth II was proclaimed. The Earl Granville resigned from the office of governor of Northern Ireland in September and Lord Wakehurst was appointed as of Dec. 1, 1952. The year was politically uneventful, local government elections in May showing a light poll and little change, but the economic situation attracted much attention.

Recession in the textile industries caused rising unemployment, reaching 53,154 workless in February, the highest figure since the end of World War II, and the ministry of supply placed shirt orders worth £1,200,000 with 23 Northern Ireland firms in an attempt to reduce it. In March four Northern Ireland cabinet ministers and six United Kingdom ministers discussed in London problems of production, raw materials and employment affecting Northern Ireland, and as a result further government textile contracts were placed. Peak unemployment was 60,353 in July, falling to 43,434 in September. In August an improvement was reported in the linen industry: estimated 1951 linen exports were 51,492,000 yd., the greatest since 1939.

Insufficiency of steel allocation was the subject of official

talks in January. The Belfast shipbuilding industry had produced in 1951 a total tonnage of 118,534 tons and total engine output of 85,595 hp., taking second place in the world for tonnage output of a single shipbuilding yard. Several big vessels were launched in 1952, including the 28,500-ton tanker "British Skill," the 17,000-ton Union Castle liner "Braemar Castle" and 18,500-ton oil tanker "Janova." Several smaller ships were launched and work was begun on a 32,000-ton tanker and other vessels. On a decision of the admiralty, work began on making three additional shipbuilding slips in Belfast for the construction of minesweepers and other naval craft. Work on the production of Comet jet bombers in Belfast made much progress and plans were put in operation for production of Comet jet air liners.

Agricultural production fell during 1951. The number of cattle, sheep and poultry fell, but pigs increased. The area under tillage decreased. Total visible exports for 1951 were £217,071,000 and imports were £261,467,000. The chief exports were linen and rayon goods valued at £47,000,000, cotton goods £15,816,000, livestock £15,412,000 and machinery £12,590,000. The 1952 budget provided for an increased "imperial contribution" of £20,500,000 to the United Kingdom exchequer. Legislation was passed providing for the same new allowances, benefits and charges in health and social services as in Great Britain. There was acute controversy over the government's proposal to restrict press reporting of preliminary court hearings of cases which might later come before a jury.

An inquiry into the operation of the Ulster Transport authority opened in March. A new system of one-way streets was applied to congested traffic areas in Belfast. Extensive new buildings were begun for Queen's university, Belfast. Heavy rain in August helped to prevent serious water shortage in some towns but flooded 2,000 houses in Belfast. Increased Belfast water supply from Silent valley was opened. (Hu. S.)

Education.—Schools (1951): nursery 23, pupils 709; primary 1,629, pupils 192,736; special (including hospital special schools) 13, pupils 776; secondary intermediate 12, pupils 6,785; secondary grammar 80, pupils 29,536; technical intermediate 29, pupils 4,901; institutions of further education 120, pupils 27,024. Queen's university of Belfast, students 2,686.

Finance and Banking.—Budget: (1951–52 actual) revenue £46,568,698 including £36,700,000 from U.K. exchequer, expenditure £46,454,419 excluding contribution of £19,000,000 to U.K. exchequer; (1952–53) revenue £75,715,000 including £42,000,000 from U.K. exchequer, expenditure £75,651,000 including contribution of £20,500,000 to U.K. exchequer. National debt (March 1952) £29,000,000.

Foreign Trade.—(1951) Imports £261,000,000 of which £205,000,000 from and through Great Britain; exports £217,000,000 of which £206,000,000 to and through Great Britain. Main direct sources of imports, excluding Great Britain (1951): Irish republic 24.3%; Belgium 15.7%; Canada 8.7%; U.S.S.R. 8.4%. Main direct destinations of exports, excluding Great Britain: Irish republic 35.5%; Norway 26.6%; U.S. 4.3%; Italy 2.9%. Main imports (1951): cotton goods, including goods sent for finishing, etc., 9%; machinery 5.7%; coal 5.6%; tobacco 3.2%. Main exports: linen and rayon piece goods 21.7%; apparel 7.1%; cotton goods, including goods sent for finishing, etc., 7.3%; livestock 7.1%.

Transport and Communications.—Roads (1951): 13,255 mi. Licensed motor vehicles (Sept. 1950): cars and cycles 59,268, commercial including tractors and hackneys 43,135. Railways (1951): 743 mi.; passengers carried (1950–51): 18,787,441; livestock transported (1950–51): 678,772 head; merchandise carried (1950–51): 1,740,752 tons. Telephone stations (Sept. 1952) 80,016.

Agriculture.—Main crops (metric tons, 1951): oats 299,000; potatoes 1,216,000; wheat 1,400; barley 3,300; dredge corn 4,400; hay 758,000; turnips 180,000; mangels 14,900; flax fibre 4,000. Livestock (mid-1952): cattle 941,000; sheep 795,000; pigs 676,000; goats and kids 8,000; horses 35,000; asses 5,000; poultry 16,456,000. Food sales (1951–52): milk 86,000,000 gal.; eggs 55,000,000 doz.; pork 970,000 cwt. Number of animals sold to the ministry for slaughter: cattle (including calves) 345,000; sheep and lambs 352,000. Shipment of food to Great Britain (1952): milk 4,000,000 gal.; eggs 39,000,000 doz.; poultry 6,037 tons; bacon and ham 25,000 tons.

Industry.—Electricity sales (1951) 684,000,000 kw.hr. Merchant vessels launched (1951) 10, gross tonnage 118,174. Exports of yarns (1951): linen 10,469,000 lb.; woollen 2,464,000 lb.; cotton 881,600 lb.; hemp 1,680,000 lb.

Ireland, Republic of. An independent republic on an island west of Great Britain, Ireland has an area of 26,602 sq.mi. Pop.: (1946 census) 2,955,107; (1951 census) 2,958,878. Language: English c. 76%, Erse

(Gaelic) c. 24%. Religion (1936 census): Roman Catholic 93.4%, Episcopalian 4.9%, Presbyterian 1%, Methodist 0.3%, Jewish 0.1%. Chief towns (pop. 1951 census): Dublin (cap., 521,332), Cork (74,577), Dun Laoghaire (47,963), Limerick (50,823), Waterford (28,689). President in 1952, Sean T. O'Kelly (O'Ceallaigh); prime minister, Eamon de Valera.

History.—Economic rather than political issues dominated the parliamentary scene in 1952. The government of Eamon de Valera, risking the possible defection of its independent supporters in the *dail eireann*, and thereby endangering its precarious working majority, took a strong line in finance. For the same kinds of reasons that operated elsewhere in the sterling bloc, the budget imposed, for the hitherto fortunately situated Irish citizen, what amounted to drastic increases in taxation. The opposition immediately tried to make political capital out of the increases; the public, however, seemed to accept them with varying degrees of resignation, and the government went on its way, if not rejoicing, at any rate with a firmness that might appear incompatible with the slenderness of its majority in the *dail*.

While economics continued to mould politics, the mystery as to what fundamental principle still separated the two main parties, continued to deepen. Three by-elections in June did nothing to illuminate it, the relative strengths of government and opposition remaining exactly as before. In the national rather than the party political sphere, it was announced that the republic would hold firmly to the policy of remaining outside NATO (the North Atlantic Treaty organization) while partition lasted; and there was colourful pageantry in Dublin in June when Sean T. O'Kelly was formally inaugurated president. Nationalist members of parliament and senators from the six counties attended the ceremony. His nomination for another seven-year term as president was unopposed.

July saw the ending of all food rationing in the republic. The items that came off the ration were bread, flour, sugar, tea and butter. At the same time subsidies on sugar, tea and butter were withdrawn altogether; those on flour and bread reduced. Starting July 11, Dublin printers began a strike that left both the capital and a wide area throughout the country without newspapers for seven weeks.

The rapid expansion of the Irish trade in meat continued. Many new meat-processing factories were registered. It was claimed that one in Dublin would be the largest of its kind in Europe. Its first products were chilled beef for Great Britain and the United States. The U.S. department of agriculture reported that Ireland was shipping more refrigerated meat to the United States than was any other country. One reason for this phenomenal development was Ireland's freedom from foot-and-mouth disease. Although the Irish refrigerated meat trade was only two years old, it earned during 1952 twice as many dollars as all other 26 county exports combined.

The adverse trade balance for the first nine months of 1952 was £57,396,000, or £39,819,000 below that for the same period in 1951. Imports for the nine months were valued at £129,628,000 compared with £149,890,000 for the corresponding period of the previous year. An interesting trend developed in August, when, for the first time, exports to Britain exceeded imports from Britain, mainly due to increased food exports. There was also a favourable balance of £975,000 with Northern Ireland. There was, however, a heavy adverse balance with the dollar area for August, amounting to £1,491,000. In spite of encouraging trade statistics and financial returns, the printing strike, a hold-up in the port of Dublin, and a threatened strike of building operatives were all symptoms of uneasiness in the industrial system. The cause was not difficult to locate—as witness a rise in the interim cost-of-living index figure of 18% since Feb. 1951.

At the same time there was a growing threat of redundancy in leading national undertakings, particularly in transport, and an increase in unemployment.

The republic's main industry, agriculture, had a prosperous year. The harvest was one of the best for half a century. Enough barley and oats were grown to meet all demands for feeding stuffs and yet left a margin to induce an increase in the number of livestock carried on farms during the winter.

Arrangements were begun for *An Tostal*, Ireland's national festival, which was planned for April 1953 and was preparing to rival the glories of Edinburgh. Appropriately, at the same time as festival plans began to take shape, Aer Lingus, the Irish national air line, reported a record profit of more than £92,000 for the year ended March 31, 1952. Passenger traffic provided the bulk of the earnings, but cargo traffic also increased by 33%. The first considerable ship launching for 15 years (a steel-hulled vessel of 1,100 tons) took place in a Dublin shipyard.

A special postage stamp was issued to commemorate the 100th anniversary of the death of the Irish poet and musician Thomas Moore.

(D. L. I.)

Education.—Schools (1949–50): elementary 4,896, pupils 445,183, teachers 12,821; secondary 416, pupils 47,065. Universities 2 (the National university has 3 constituent colleges), students 7,448, professors and lecturers 499.

Finance and Banking.—Budget: (1951–52 est.) revenue £80,500,000, expenditure £81,600,000; (1952–53 est.) revenue £86,600,000, expenditure £101,700,000. National debt (March 1950) £130,600,000. Currency circulation (July 1952) £62,100,000. Bank deposits (quarterly average, July–Sept. 1952) £257,700,000. Gold and foreign exchange (Sept. 1952) U.S. \$200,000,000. Monetary unit: Irish pound at par with the pound sterling.

Foreign Trade.—(1951) Imports £204,500,000, exports £81,400,000. Main sources of imports (1951): Great Britain 47%; U.S. 13%. Main destinations of exports: Great Britain 84%; U.S. 4%. Main imports (1951): machinery and vehicles 14%; textiles and manufactures 13%; wheat and corn 7%; coal 6%. Main exports: live animals 36%; meat, fish and dairy products 23%. Index of volume of trade (on basis of 1948=100, 1951), imports 117; exports 135.

Transport and Communications.—Roads (1950): 49,170 mi. Licensed motor vehicles (Dec. 1950): cars 85,140, commercial 40,748. Railways, two principal railways including cross-border operations (1950): 2,460 mi.; passengers carried 21,000,000; freight carried 4,476,000 metric tons; freight, ton-miles 327,000,000. Air transport (1950): passenger-miles 50,000,000; cargo, ton-miles 495,000. Inland waterways: 566 mi. Telephones (1951): 82,031. Radio receiving sets (1950): 296,388.

Agriculture and Fisheries.—Main crops (metric tons, 1951): wheat 252,000; oats 580,000; barley 170,000; rye 3,000; potatoes 2,810,000; sugar, raw value 99,000; flax fibre (1950) 1,400. Livestock (1951): cattle 4,381,000; sheep 2,702,000; pigs 548,000; goats 50,000; horses (1949) 402,000; mules (1949) 5,000; poultry 18,570,000. Wool production (clean basis, 1951) 4,000 metric tons. Food production (metric tons, 1951): meat 153,000, of which beef and veal 81,000, pork 58,000; butter from co-operative creameries 33,100; cheese 2,500. Fisheries (wet fish, 1951): 13,981 metric tons.

Industry.—Persons employed in industrial establishments (1948) 197,550. Fuel and power (1951): coal 184,800 metric tons; electricity 1,008,000,000 kw.hr.; manufactured gas 166,800,000 cu.m. New houses constructed under state aid (1951) 12,132. Index of industrial production (1951, 1948=100): 132.

Iron and Steel. For convenience in coverage, this subject is divided into its three major parts: iron ore, pig iron and steel. Production statistics are those from the major producing countries available in Nov. 1952, as reported by the U.S. bureau of mines.

Iron Ore.—World production, as shown in Table I, had been increasing to meet growing demands. A material share of the larger outputs of Canada, Brazil, Chile and Sweden was used to supplement the United States output. The outputs of new developments in Labrador and Venezuela were also expected to add to the United States supply.

The salient statistics of iron ore in the United States are shown in Table II. The sharp upward trend in imports is particularly significant, the proportion having grown from 2% of consumption in 1946 to more than 11% in 1951.

Production during 1951 was reduced by the shutdown during the steel strike; through May, however, the total was practically the same as in the corresponding period of 1951.

Table I.—World Production of Iron Ore

	(In thousands of short tons)					
	1946	1947	1948	1949	1950	1951
United States	79,344	104,263	113,124	95,130	109,810	130,402
Canada	1,581	1,919	1,337			
Newfoundland	1,393	1,617	1,644	3,675	3,606	4,737
Brazil	1,102	1,022	1,589	1,641	2,094	2,816
Chile	1,491	1,772	2,806	2,863	3,280	3,585
Austria	520	976	1,320	1,640	2,049	2,612
Czechoslovakia	1,230	1,502	1,575	1,550?	1,765?	
France	17,893	20,634	25,363	34,639	33,293	38,872
Germany	4,674	5,232	8,296	10,320	12,356	21,961
Great Britain	13,634	12,422	14,660	15,005	14,490	16,404
Luxembourg	2,477	2,196	3,749	4,560	4,238	6,200
Spain	1,760	1,669	1,798	2,068	2,292	2,553
Sweden	7,570	9,805	14,647	15,155	15,352	17,759
U.S.S.R.	23,000?	26,000?				
Yugoslavia	439	814	969	921	880?	640
India	2,697	2,798	2,559	3,146	3,300?	4,094
Japan	624	550	618	859	1,003	1,211
Philippines			18	408	660	995
Nigeria	1,842	1,715	2,065	2,798	2,836	3,103
Morocco, French	138	172	335	393	350	588
Morocco, Spanish	868	958	997	1,040	948	1,045
Portugal Leone	817	941	1,067	1,075	1,306	
South Africa	1,044	1,281	1,283	1,375	1,311	1,566
Australia	2,046	2,414	2,290	1,636	2,649	2,720
Total	170,000	206,000	239,000	242,000	270,000	323,000

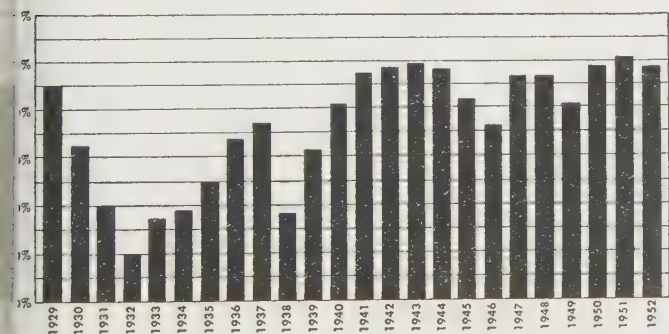
Table II.—Production of Iron Ore in the United States

	(In thousands of short tons)					
	1945	1946	1947	1948	1949	1950
Crude ore	119,070	94,298	127,649	141,372	117,433	140,828
Open-pit	88,407	71,522	95,900	110,876	87,542	108,492
Underground	30,663	22,776	32,870	30,496	29,891	32,337
Shipments	119,324	94,064	127,589	141,259	117,015	141,010
To consumers	76,153	60,377	79,813	85,846	71,138	78,865
To concentrators	43,170	33,686	47,775	55,415	45,877	62,125
Usable ore						
Production	98,982	79,344	104,263	113,124	95,130	109,810
Shipped direct	75,901	60,496	79,657	86,108	71,646	78,746
Concentrated	18,831	15,455	19,105	21,342	18,382	25,548
Sintered	3,670	2,825	4,893	5,136	4,501	4,872
Sintered	91,050	73,616	94,680	101,569	85,414	97,617
Sintered	1,056	769	1,346	2,437	1,731	2,929
Sintered	6,295	4,391	7,629	8,581	7,384	8,621
Shipments	98,713	78,501	104,513	112,921	94,849	109,496
Imports	1,337	3,159	5,491	6,842	7,663	9,220
Exports	2,311	1,687	3,144	3,451	2,716	2,845
Consumption	96,498	80,836	107,650	112,559	99,924	119,404

Table III.—World Production of Pig Iron and Ferroalloys

	(In thousands of short tons)					
	1946	1947	1948	1949	1950	1951
Australia	979	1,268	1,384	1,170	1,214	1,496
Austria	64	307	676	924	973	1,159
Belgium	2,382	3,105	4,331	4,133	4,071	5,343
Canada	1,521	2,120	2,372	2,366	2,491	2,803
Czechoslovakia	1,058	1,569	1,822	2,067	2,076	2,200
France	3,852	5,393	7,230	9,210	8,647	9,743
Germany	272	720	1,250	1,744	1,854	2,606
Italy	2,711	2,922	5,340	8,146	10,767	12,379
Great Britain	8,692	8,457	10,389	10,641	10,786	10,868
India	1,632	1,728	1,647	1,842	1,862	2,043
Japan	233	405	922	1,791	2,520	3,558
Luxembourg	1,504	2,004	2,896	2,615	2,755	3,480
Poland	800	956	1,249		1,378	1,630
U.S.S.R.	11,000?	12,500?	15,500?	18,400?	21,500?	24,800?
United States	46,323	60,141	61,966	54,868	66,378	72,537
Total	87,000	111,000	124,300	128,000	147,000	165,000

Pig Iron.—Table III includes the pig iron and ferroalloy outputs of countries having annual outputs of 1,000,000 tons or more. In the United States, the 1951 output advanced about 19% over 1950, but was cut back sharply by the steel strike to a total of 42,494,940 tons through Sept. 1952, or 19% less than the same period of 1951.



STEEL PRODUCTION in the United States, 1929-52 (11 mo. for 1952); monthly average percentage of capacity (figures compiled by American Iron and Steel Institute)



STRIKING STEEL WORKERS setting up a makeshift headquarters at the Youngstown, O., plant of U.S. Steel in June 1952, immediately after the supreme court ruled against President Truman's seizure of the steel industry

Steel.—Table V lists the countries with steel outputs in excess of 1,000,000 tons a year.

After a record output in 1951—the first year in which U.S. steel production exceeded 100,000,000 tons—and after an advance of 9% over 1951, the 1952 output was sharply reduced by a strike in the industry which cut the normal June and July figures by more than 80% and gave a total of 64,192,392 tons in the first three quarters, a decline of 18% from the same period of 1951.

It was estimated that the strike caused a loss of almost 20,000,000 tons in the 1952 production, only a fraction of which

Table IV.—Data on Pig Iron and Ferroalloys in the U.S.

	(In thousands of short tons)						
	1945	1946	1947	1948	1949	1950	1951
Pig Iron							
Production	53,224	44,842	58,327	60,073	53,323	64,587	70,274
Shipments	53,265	45,076	58,368	60,051	52,219	64,626	
Imports	21	14	33	222	100	796	
Exports	91	96	40	7	81	7	
Consumption	53,187	45,072	58,291	60,026	53,447		
Castings	6,567	6,611	8,096	7,849	6,944		
Open-hearth	41,683	34,608	45,338	47,267	41,783		
Bessemer	4,751	3,723	4,712	4,778	4,612		
Electric	163	113	127	132	108		
Ferroalloys							
Production	1,732	1,481	1,814	1,893	1,544	1,871	2,263
Shipments	1,662	1,551	1,842	1,952	1,425	1,952	
Ferromanganese	610	492	615	659	560	731	
Spiegeleisen	158	112	124	109	54	65	
Ferrosilicon	616	614	766	819	590	795	
Others	278	333	336	365	221	391	

Table V.—World Production of Steel

	(In thousands of short tons)					
	1946	1947	1948	1949	1950	1951
Australia	1,220	1,502	1,545	1,304	1,543	1,593
Austria	206	394	714	921	1,044	1,133
Belgium	2,532	3,177	4,321	4,243	4,176	5,612
Canada	2,327	2,946	3,200	3,190	3,384	3,508
Czechoslovakia	1,839	2,520	2,921	2,767	3,016	3,651
France	4,859	6,319	8,009	10,040	9,537	10,838
Germany	321	780	1,354	1,937	2,090	2,869
Italy	3,351	4,428	7,844	10,864	14,634	14,888
Japan	389	658	818	936	1,127	1,360
India	1,448	1,407	1,407	1,515	1,584	1,662
Poland	1,271	1,864	2,342	2,265	2,604	3,360
U.S.S.R.	621	1,037	1,889	3,429	5,344	7,013
Luxembourg	1,428	1,890	2,704	2,504	2,700	3,392
Sweden	1,344	1,741	2,154	2,541	2,767	3,078
U.S.S.R.	1,325	1,313	1,386	1,510	1,585	1,681
U.S.S.R.	14,500?	15,400?	20,300?	25,400?	29,800?	31,300?
United Kingdom	14,218	14,251	16,662	17,420	18,249	17,515
United States	66,603	84,894	88,640	77,978	96,836	105,200
Total	122,300	149,900	172,000	175,300	205,000	223,000



REC-MANNING

"WHICH TWIN LEADS?" a cartoon by Manning of the McNaught Syndicate, Inc., published in 1952

Table VI.—Steel Industry in the U.S.

(In thousands of short tons)

	1946	1947	1948	1949	1950	1951
Capacity	91,891	91,241	94,233	96,121	104,230	108,588
Production	66,603	84,894	88,640	77,978	96,836	105,200
Basic open-hearth	60,112	76,209	78,715	69,742	85,662	92,387
Acid open-hearth	600	665	625	507	601	779
Bessemer	3,328	4,233	4,248	3,947	4,535	4,891
Electric	2,563	3,788	5,057	3,783	6,039	7,142
Shipments	48,776	63,057	65,973	58,104	72,232	78,929
Domestic	45,749	58,850	62,728	54,586		
Exports	3,027	4,207	3,245	3,518		

could be made up by pushing the operation rate during the last quarter of the year. (G. A. Ro.)

Iron and Steel Institute, American: see SOCIETIES AND ASSOCIATIONS, U.S.

Irrigation. United States.—Winter snowfall of record-breaking proportions relieved the water shortages in the southwest early in 1952. The Arizona drought was broken, irrigation supplies being plentiful except in Gila valley where some late crops lacked sufficient water. Reservoir storage was built up for the Salt and Verde river systems, but San Carlos project storage was only 3% of reservoir capacity at the end of the summer rainy season. With this principal exception, year-end prospects for carry-overs were favourable throughout the mountain and Pacific states. Even Elephant Butte reservoir, New Mexico, which belatedly showed the effects of mountain snow-melt, promised to hold almost 500,000 ac.-ft. more than at the beginning of the 1952 withdrawal season. Shasta reservoir, California, filled for the first time; water behind Hoover dam on the Colorado river increased by about 3,500,000 ac.-ft., and that behind Grand Coulee dam, Washington, by about 1,000,000 ac.-ft. All 129 bureau of reclamation reservoirs held a record supply of more than 51,000,000 ac.-ft. on Aug. 1. However, in southern Texas a protracted summer drought caused heavy crop damage.

Skilful manipulation of storages preceding and during heavy runoffs averted floods except, notably, in Utah, the San Joaquin valley of California, and the Milk river valley in Montana. Ideal snow-melt weather helped this control, permitting regulation of streams despite the saturated soil of tributary areas. Flood damage was severe on about 1,700 Utah farms containing approximately 33,500 cropland acres, and rehabilitation of these lands and their irrigation facilities was expected to cost more than \$1,000,000. About 65,000 ac. in Tulare lake basin, California, were inundated and crops on about 10,000 ac. elsewhere in San Joaquin valley were damaged, but the damage to irrigation systems was not extreme. Ground storage was benefitted in all important pumping sections, both by postponement of pumping and by direct replenishment, but full replenishment were not looked for immediately.

Firmed water supplies and good prices for crops led to a general increase of the irrigated acreage. The federal bureau of reclamation was the principal large-scale construction agency expanding the area wholly and partly served by its systems to about 6,593,000 ac. A further increase to 6,750,000 ac. was planned for 1953, together with facilities for production of 352,500 kw. of new hydroelectric power. Ten new projects were involved in this program: Sly Park unit, Central Valley project, California; Solano project, California; North Side pumping division, Minidoka project, Idaho; Savage Rapids dam, Oregon; Weber Basin project, Utah; Kennewick division, Yakima project, Washington; and the Rapid Valley unit, Lower Marias unit, Missouri Diversion unit and Webster unit in the Missouri River Basin project.

The bureau celebrated delivery of water from Lake Franklin D. Roosevelt to arid lands of the Columbia Basin project, Washington. Portions of 920 farm units averaging 90 ac. received this service. Construction features of this project, begun in 1935, were brought to three-fifths completion. Also celebrated was the initial operation of generators with hydroelectric capacity of 142,500 kw. at the Hungry Horse water and power project in Montana, as well as 230,000 kw. of capacity at Hoover (Arizona-Nevada) and Boysen (Wyoming) dams.

Irrigated acreages reported by the bureau were greatly more than those shown for it in revised tabulations of the 1950 federal census of irrigation, the census figures not crediting the bureau with projects taken over for operation by the water users. A breakdown of the totals for the 17 western states, by type of operating enterprise, follows: single-farm, 11,817,059 ac.; unincorporated mutuals, 2,113,642; incorporated mutuals, 5,635,630; commercials (mostly public utilities), 705,087; irrigation districts, 4,962,413; bureau of reclamation, 682,413; U.S. bureau of Indian affairs, 506,076; states, 51,782; cities, 56,845.

Other census figures showed marked advances of irrigation in eastern states. Previously unannounced 1949 irrigated acreages for Arkansas, Florida and Louisiana were 422,107, 365,421 and 576,775. Other unexpectedly large totals were: New Jersey, 28,117; New York, 19,248; Wisconsin, 9,781; Connecticut, 8,088; Pennsylvania, 7,251; South Carolina, 6,408; Ohio, 5,706; Indiana, 5,339; Mississippi, 5,086; Minnesota, 4,235. In continental United States 305,061 farms reported 25,787,455 ac. as irrigated.

California took the first steps in its state-sponsored Feather River project by letting contracts for surveys of canal routes and dam sites. The state legislature appropriated \$10,000,000 for a token payment to the bureau of reclamation in a proposed purchase of the Central Valley project, on which, however, no agreement was reached.

Egypt.—Two programs were being considered in Egypt. A short-term plan contemplated reclamation, by new canals, of 40-

Turkey.—A third loan was made by the International Bank involving \$25,200,000 for the development of Adana plain in south-central Turkey by helping finance a multipurpose dam and power facilities as a key part of the government plan for full utilization of the Seyhan river. The full cost would be about \$35,800,000. The loan would finance purchase of machinery; other parts of the plan would be financed by the Turkish government. Irrigation would be provided for about 356,000 ac. The completion of the dam was scheduled for the summer of 1956, and the completion of the irrigation system would be in 1961. The cost of the entire program would be \$67,000,000. Irrigation would increase production of cotton, oil seeds and citrus fruits. (*See also* AQUEDUCTS; DAMS; FLOODS AND FLOOD CONTROL; SOIL EROSION AND SOIL CONSERVATION.) (P. A. E.)

In Egypt education was greatly affected by political strikes connected with the conflict with the British in the Suez Canal Zone in which students took part. Several lives were lost. Events of cultural importance were the opening of the two new universities and the appointment of a new rector of the el-Azhar university. In the Anglo-Egyptian Sudan, the nationalists, who supported union with Egypt and who had opened 19 primary





MOSLEM PILGRIMS ready to board a fleet of U.S.A.F planes flown to Beirut, Leb., as a gesture of friendship when almost 4,000 pilgrims were stranded there without transport on their holy journey to Mecca in the fall of 1952

schools and 38 schools for adult education between 1940 and 1945, continued to press for better facilities for both elementary and higher education. They complained that whereas the Egyptian government had provided free education for 2,000 to 3,000 university students from the Sudan each year, the Sudanese government itself was doing nothing.

Jordan devoted 5.3% of its budget (*i.e.*, 302,574 dinars) to education. A proportionately large number of Jordanian students were educated abroad, chiefly in Egypt and Lebanon; also 179 were taking courses in the United States. The Syrian and Lebanese governments made determined efforts to remove illiteracy. In Lebanon literacy was said to be as high as 85% (nearly 50% of the population is Moslem). In Yemen, where modern education had been introduced only in 1946, a Lebanese mission arrived, and Yemenites who had achieved a higher educational standard were sent to gain experience with other Arab governments; students went mostly to Egypt.

According to the 1951 Pakistan census 10,374,000 (13.8% of the population) were literate. A six-year education plan was worked out, and it was envisaged that illiteracy would be wiped out within 20 years. The Pakistan government decided to establish during the next five years 11 technical high schools similar to that opened in Karachi in July 1951. In that city was laid the foundation stone of the Women's College of Domestic Science,

founded under the auspices of the All-Pakistan Women's association. The Ford foundation granted Rs. 1,660,000 toward the cost of the building. At Lahore from March 29 to April 2 the association itself held its annual conference, which was attended by 500 delegates including those from Persia, Iraq, Egypt, Turkey, Indonesia, Lebanon and England. Another conference of far-reaching cultural importance was the Congress of the Divines of Islam (Intifal Ulama al-Islam) which met in Karachi from Feb. 16 to Feb. 18, 1952, and whose aim was to draw up a practical program for the dissemination of Islamic ideals. The congress was attended by 43 religious leaders from Pakistan, Afghanistan, Egypt, Indonesia, Syria, Saudi Arabia, Kashmir, India, Algeria and Ceylon. The Iraqi government commemorated the ninth centenary (reckoned in Moslem hegeric years) of the death of the Moslem natural philosopher and physician Avicenna (d. A.D. 1037). The Arab league at its session of Sept. 16 decided to establish an institute of higher Arab studies. (See also AVIATION, MILITARY.)

(A. Md.)

Isle of Man: see COMMONWEALTH OF NATIONS; GREAT BRITAIN & NORTHERN IRELAND, UNITED KINGDOM OF.

Ismay, Hastings Lionel Ismay, 1ST BARON, of Wormington, Gloucestershire (1887–), British soldier, was born in India, June 21. He was educated at Charterhouse and Sandhurst and was com-

missioned in 1905. He served on the northwest frontier, India, and, during World War I, in Somaliland. He attended the Staff College, Quetta, in 1922, and during 1926-30 was assistant secretary to the Committee of Imperial Defence. Later, 1935-36, he again served on this committee. He was knighted in 1940 and from then until 1946 (when he resigned) he was chief of staff to the minister of defense and deputy military secretary to the war cabinet. He accompanied Winston Churchill on many missions abroad as chief of staff in World War II. He returned to India as chief of staff to Earl Mountbatten of Burma, the last viceroy of India, in 1947, and in the same year he was raised to the peerage. Lord Ismay was chairman of the council of the Festival of Britain, 1951. When the Conservatives were returned to power in Oct. 1951 he received his first political appointment: secretary of state for commonwealth relations in Winston Churchill's cabinet. He took part in the Washington discussions in Jan. 1952 between Churchill and Pres. Harry S. Truman. On March 12 it was announced that Lord Ismay had accepted the post of secretary-general of the North Atlantic Treaty organization and would also be vice-chairman of the North Atlantic Treaty council. He resigned from his position as secretary of state for commonwealth relations and took up his new post on April 4.

Isotopes: see ATOMIC ENERGY.

Israel. Israel is a republic, proclaimed on May 14, 1948, at Tel Aviv, bounded north by Lebanon, east by Syria and Jordan, south by Egypt and west by the Mediterranean sea. Area: 8,084 sq.mi. Pop.: (Nov. 1948 census) 782,000, including 13,000 Jews; (mid-1952 est.) 1,605,000, including 1,430,000 Jews. Religion: mainly Jewish, but by 1952 there were 120,000 Moslems, 16,000 Druzes and 40,000 Christians. Chief towns (pop., 1951 est.): Jerusalem (*q.v.*) (cap., Israeli part only, 150,000); Jaffa-Tel Aviv (370,000); Haifa (190,000). President of the republic, Chaim Weizmann, until Nov. 9, 1952; from Dec. 10, Isaac Ben-Zvi. Prime minister, David Ben-Gurion.

History.—The year 1952 was one of consolidation, in which Israel was able to achieve progress in a number of spheres and was less troubled by either internal discords or external threats than it had been during any similar period since the nation proclaimed its independence. The enormous adverse trade balance, which was the primary cause of the country's economic malaise and which stood at IL107,000,000 for 1951 (imports IL123,000,000; exports IL16,000,000), was slightly reduced during the first six months of 1952, while the high rate of immigration, which was largely responsible for the adverse trade balance, was reduced from the record figure of 174,000 in 1951 (an average of 14,600 a month) to 17,500 for the first eight months of 1952 (an average of 1,458 a month). At the same time, great strides were made in increasing both agricultural and industrial production. Although Israel's relations with the countries of the Arab league showed no improvement, and it was unable to make headway in its approaches to the U.S.S.R., its ties with the Western powers became stronger and the signing of a reparations agreement with the Federal Republic of Germany at Luxembourg on Sept. 10 was a notable achievement which was expected to have an important effect on the country's economy.

Negotiations with the Federal German authorities were begun unofficially during 1951, but the subject did not come up for debate in the *knesset* (parliament) until Jan. 7 when the right-wing Cherut (Freedom) party seized the occasion to organize demonstrations against the government on the grounds that it was dishonourable for Jews to negotiate with the Germans and to accept monetary reparations as a token of repentance for the wrongs inflicted by the nazis. There was rioting

outside the *knesset* and some casualties, but the government, supported by the overwhelming majority of the people, stood firm and the negotiations were finally brought to a satisfactory conclusion. The Germans agreed to pay Israel 3,000,000,000 DM. and, in addition, 450,000,000 DM. for the specific use of Jewish organizations outside Israel. The payments were to be made in the form of goods to be delivered over a period of 12 to 14 years. It was expected that this agreement, which came into effect on signature, would tend to reduce the inflationary pressure and help to create higher agricultural and industrial productivity.

Despite various encouraging symptoms the economic state of the country continued to be serious and the government was obliged to introduce drastic measures. On Feb. 13, Ben-Gurion, the prime minister, announced evaluation of the Israel pound with three different rates of exchange (*viz.*, \$2.80, \$1.40, \$1.00=IL.1) which were applicable to different categories of imported goods and services. Steps were also taken to curb inflation, encourage foreign investment and stimulate exports. On June 8, Eliezer Kaplan, the finance minister, announced further strong antiblack-market and anti-inflationary measures which consisted of the withdrawal of high denomination banknotes and the establishment of a compulsory loan raised from bank accounts. The cost-of-living index in July was 157, compared with 100 in Sept. 1951, and in August the black-market rate of exchange stood around IL.1=33 U.S. cents. Apart from the continuous flow of financial assistance received from Jewish communities abroad, Israel secured, on Feb. 27, a grant-in-aid from the United States of \$50,000,000. A request for a loan of £5,000,000 from the United Kingdom for the purchase of oil was, however, refused in an announcement in the house of commons made on May 20 by Winston Churchill. Two significant industrial developments were: on May 4 the signature of an agreement between the government and a Belgian company for the exploitation of copper ore deposits in the Negev area and, on July 24, the conversion of Palestine Potash, Ltd., into Dead Sea Works, Ltd., an enterprise in which the Israeli government secured 51% of the voting rights.

The passage by the *knesset* on April 1 of the Nationality bill, which automatically conferred citizenship on Jewish residents, was the signal for strong protests by the Arab minority which considered that it was being subjected to discrimination. A more serious threat to the stability of Ben-Gurion's coalition was provided by the resignation, on Sept. 18, of two Agudist (Jewish Orthodox) members of the government because of differences of opinion about the conscription of women into the armed forces and the unification of education.

Israel watched with close attention the developments in the neighbouring Arab states, but there was no relaxation in the "cold war" or the economic boycott imposed against it. On June 8 it was admitted that negotiations concerning frontier amendments had been held with Jordan and, soon after Maj. Gen. Mohammed Naguib achieved power in Egypt, Ben-Gurion, in a speech on Aug. 18, made friendly overtures in the hope of establishing peace between the two countries. Israel's sense of insecurity remained such, however, that the period of compulsory military service was extended, on Aug. 19, from 24 to 30 months.

The decision of the government, announced on May 4, to move the ministry of foreign affairs from Tel Aviv to the capital, Jerusalem, met with the disapproval of a number of countries. Nevertheless, both the British and French governments decided in August to raise the status of their respective legations to that of embassies, a compliment which was reciprocated by Israel. Chaim Weizmann, first president of Israel and world renowned chemist, died of a heart attack Nov. 9. Weizmann had been a principal force in the creation of the Israeli state. Josef Sprinzak, house speaker, assumed the duties of the presidency.

On Dec. 8 Isaac Ben-Zvi, Mapai (Labour party) candidate, was elected second president of the republic. He was invested in Jerusalem on Dec. 10. (See also IMMIGRATION AND EMIGRATION.) (D. F. K.)

Education.—Government schools (1951-52): kindergarten 1,547, pupils 59,625, teachers (1950-51) 1,415; elementary 825, pupils 178,174, teachers (1950-51) 6,201; secondary 68, pupils 12,751, teachers (1950-51) 859; agricultural schools 28, pupils 4,925, teachers (1950-51) 346; Arab 192, pupils 27,151, teachers 708. Nongovernment (Jewish religious) schools: primary 20, pupils 2,475; secondary 115, pupils 4,862. Government teachers' training colleges: 17. Other institutions of higher education 3, students 4,054, professors and lecturers 175. Hebrew University of Jerusalem (1952-53): students c. 3,000; professors and lecturers c. 300.

Finance and Banking.—Budget (1951-52) balanced at IL.198,600,000; (1952-53) balanced at IL.283,400,000 (incl. development IL.115,000,000, defense IL.45,000,000). Currency circulation (June 1952): IL.115,500,000. Bank deposits (March 1952): IL.262,544,048. Monetary unit: Israeli pound, divided into 1,000 pruthoth. There are three legal rates of exchange in operation: IL.1 = £1 sterling; IL.2 = £1 sterling; IL.2.800 = £1 sterling.

Foreign Trade.—(1951) Imports IL.122,500,000; exports IL.16,700,000. Main sources of imports (1951): U.S. 31.8%; U.K. 10%; France 5%. Main destinations of exports: U.K. 32.6%; U.S. 22.9%; Finland 11%; Denmark 6%. Main imports: machinery, grain and flour, vehicles, iron and steel manufactures, fuel. Main exports: food, drink and manufactured goods.

Transport and Communications.—Roads (1952): 2,199 km. Licensed motor vehicles (March 1952): cars 10,753, commercial vehicles 15,206. Railways (1951-52): 535 km.; goods, 251,523 ton-kilometres; freight carried, 947,809 metric tons. Shipping (1952): merchant vessels 30; total tonnage 150,000. Air transport (1951): 183,525,758 passenger-kilometres. Telephones (1951): 28,956. Radio receiving set licences (1951): 149,582.

Agriculture and Fisheries.—Main crops (metric tons 1950-51): wheat 13,500; barley 27,500; maize and durra (1949-50) 19,900; maize and sorghum 4,000; oats 1,200; potatoes 37,000; oilseeds 7,000; grapes 13,400; olives 2,700; deciduous fruit 3,500; bananas 5,700; other fruit (metric tons, 1951): oranges and tangerines 258,000, grapefruit 54,000, lemons 8,000. Wine production (1950-51) 7,400 l. Livestock: cattle (1950) 60,000; sheep (1951) 55,000; chickens (1951) 788,000. Fisheries, total catch (1951): 1,397,502 kg.; value IL.3,165,935.

Industry.—Electricity sales (1951) 558,100 kw.hr. Manufactured goods (1951): cement 439,000 metric tons; margarine 5,000 tons; flour 105,424 tons; soap 6,968 tons; beer 12,288 l.; cigarettes 2,026,683 kg.

Italian Colonial Empire: see ERITREA; LIBYA; SOMALILAND, ITALIAN.

Italian Literature. Two outstanding literary events during 1952 had repercussions inside and outside Italy. The first was the prize and punishment received by Alberto Moravia, a non-Communist writer. Within the space of a few weeks, all his works were placed on the *Index Librorum prohibitorum*, he accepted an invitation by the state department to go to the United States only to have it revoked without explanation, and shortly thereafter he received the coveted Strega prize for his *I racconti* (Bompiani, Milan), a complete and definitive collection of his short stories, told with consummate artistry and containing his best writings. The second was the return of Ignazio Silone to the field of letters, following his return from exile and a long leave of absence spent in Italian politics, with the publication of *Una manciata di more* (Mondadori, Milan), a novel which takes the reader back to the peasants of Fontamara who relate with their native humanity, pathos, imagery and humour what happened after the fall of fascism to them, to their land, to the fascist bosses and to a mysterious symbolic trumpet. It is a story of disappointment, sacrifice, resignation and yet of faith in a better tomorrow.

From a general survey of the Italian prose published during the year it appears that the most favoured themes were the travails of the intellectual, the land problem, the plight of the have-nots, the spiritual crisis of youth under the impact of recent political and social events, and lastly, the never-ending search in that labyrinth which is the soul of woman.

A novel, which for both content and intent recalls G. A. Borgese's *Rubè*, was Carlo Cassola's *Fausto e Anna* (Einaudi, Turin). Spanning that period of Italian life between the Ethiopian war and the liberation of Italy, it had as its protagonist a young intellectual in futile search of a purpose in life, an

ideal, a faith, until the part he plays in the war of liberation reveals to him that only by working for others and with others can life become worth living. In the same vein, though not of the same plane, was Arnaldo Frateili's *Controvento* (Bompiani, Milan), in which a wealthy, materialistic and dissolute businessman emerges from the maelstrom of war with a new awareness of inner virtue and a newly kindled love of mankind which prompt him to seek and live a kind of franciscan life.

Fortunato Seminara published two novels dealing with the landowners and peasants of his native Calabria and their deep attachment to the land: *La masseria* (Garzanti, Milan), and *Il vento nell'uliveto* (Einaudi, Turin). In the first, there is introduced a shrewd landowner who manages throughout the social upheavals of the post-World War II period to save his land from the masses of poverty-stricken peasants whose progress is arrested by superstition, hide-bound tradition and misery. The second concerns the trials of a young seminarist who, upon inheriting a farm, decides to devote himself to the welfare of his famished peasants only to see his efforts come to naught in the end through the devastations of nature and the elements. Still related to the land but treating a different problem is R. M. de Angelis' *La brutta bestia* (Mondadori, Milan), which analyzes the social conflict arising out of the love of a young widowed landowner for a peasant, their subsequent marriage and disillusionment.

The endemic problem of overpopulation and the economic crisis which had induced an unusually large number of young Italians to enter the priesthood, absorbed Libero de Libero. In *Camera scura* (Garzanti, Milan) he related with urbane and sagacious penetration, the experiences of a poor lad who enters a seminary as a way of pursuing his studies but who, after a long struggle with his conscience, finally is forced to leave.

The social, moral and psychological problems besetting the fair sex occupied a score of women writers. Noteworthy among them were Anna Banti, co-winner of the second Viareggio prize, who produced four brilliant and incisive full-length portraits of women in *Le donne muoiono* (Mondadori, Milan); Pia d'Alessandria, with a distinguished novel, *Autunno con le ragazze* (Rizzoli, Milan), that dissects parent-daughter relations in the unusual milieu of army officers' families; Elda Rossi, who contributed a volume of short stories (*I poveri*, Rizzoli, Milan, Venezia prize) containing ten admirably restrained and balanced studies of humble creatures, the majority of them women; Anna di Meo whose *Posta aerea* (Guanda, Parma) is the confession of a woman who tells her love, in an outburst of joy and relief to the man who cannot love her; and Emilia Gardona whose *La belle di Villa Borghese* (Guarnati, Milan) is a story of the rivalry and hatred of two sisters as told by the victim, confined in an insane asylum, who traces through her own life the customs, dreams, loves and follies of the social set to which she had belonged.

Aldo Palazzeschi, weary of writing about man, his virtues, foibles and vices, turned to animals who became the protagonists of a charming volume of short stories (*Bestie del '900*, Vallecchi, Florence) which are small masterpieces of fantasy, wisdom and humour. Giuseppe Marotta published another of his literary mosaics, *Gli alunni del sole* (Bompiani, Milan), consisting of legends of the Greek pagan world as seen through the rich imagination of a retired Neapolitan janitor who narrates them with gusto and conviction to his spellbound friends.

Two books by nonprofessional writers were the focus of wide attention and critical praise: *Mezzo contadino* (Neri-Pozza, Venice) by Gilberto Rossi, a noted scientist, who makes his debut on the literary scene with a limpid, poetic and warmly human account of the salient episodes of his youth; and *Ultime lettere di condannati a morte della Resistenza italiana* (Einaudi,

(Turin), a collection of last letters written by men and women of the Italian resistance—intellectuals, workers and peasants—to friends and relatives before facing the firing squad. The collection constitutes an impressive monument to the cause of freedom and human dignity. (M. F. C.)

Italy. A republic of southern Europe, Italy is bounded on land northwest by France, north by Switzerland and Austria and northeast by Yugoslavia. The country includes not only the whole of the Apennine peninsula, but also the large Mediterranean islands of Sicily and Sardinia and a number of smaller islands. Area: 116,224 sq.mi., excluding Venezia Giulia, Zara and the islands (2,843 sq.mi.) ceded to Yugoslavia, the five small areas in the Alps ceded to France (273 sq.mi.) and the Free Territory of Trieste. Pop.: (1951 census, prelim.) 47,220,536. Language: mainly Italian, but in Venezia Tridentina there were about 210,000 German-speaking Tyrolese, and about 10,000 Romansch-speaking Ladins; in the area east of Udine there were about 11,200 Slovenes and the population of Val d'Aosta (about 6,600) was French-speaking. Religion: mainly Roman Catholic (99.6%). Chief towns (pop. 1951 census): Rome (cap., 1,695,477); Milan (1,292,934); Naples (1,027,000); Turin (720,032); Genoa (683,023); Palermo (501,005); Florence (390,832); Bologna (349,326); Venice (323,216); Catania (300,298); Bari (273,143); Messina (220,790). President, Luigi Einaudi; prime minister, Alcide de Gasperi (*q.v.*).

History.—The political history of Italy during the first half of 1952 was dominated by the third round of local elections which took place on May 25. The anti-Communist Socialists held a congress which opened at Bologna on Jan. 3 at which frantic efforts were made to consolidate their position; after tempestuous meetings, they renamed themselves the Social Democratic Party of Italy (P.S.D.I.). Many of their members hoped for a Socialist reunion with the pro-Communist Socialist party, and there was little doubt that Pietro Nenni himself would have been willing to move a little away from the Communists in order to achieve this. Later, in July, he went to Moscow to receive a Stalin peace prize, and on his return insisted as ever upon the mediation between west and east which he regarded as his task.

In April Don Luigi Sturzo, who had once led a leftist Catholic party called the Popolari, came out with an appeal for a united front against the Communists. Sturzo was backed, indeed to some extent instigated, by Professor Luigi Gedda, the right-wing leader of the Catholic Action. For this reason, perhaps, Sturzo drew back at the last moment; the Vatican, also, seemed to change its attitude from one of support of Gedda (who wished to co-operate with monarchists and neofascists) back to support of the more moderate policy of De Gasperi. In Rome the fellow-travelling alignment of the veteran radical, Francesco Saverio Nitti, with the Communists and Nenni Socialists caused some consternation, but when it came to polling day the Christian Democrats with their allies retained control of the capital. In Naples there was a 43% vote for the monarchists whose new president, the millionaire shipowner, Achille Lauro, had led a conspicuous campaign; he was subsequently elected mayor of Naples. The monarchists and neofascists had formed a series of alliances and together they won control of other southern towns such as Bari and Foggia, while the Communists remained masters of Ferrara and Aosta in the north.

Parties	Votes	%	
Christian Democrats . . .	8,021,933	36	Combined centre 11,173,487 or 50%
Social Democrats	1,699,571	7.6	
Liberals	880,286	3.9	
Republicans	571,697	2.5	Combined left 7,482,748 or 33.5%
Communists	4,594,489	20.5	
Nenni Socialists	2,888,259	13	
Neofascists	1,419,741	6.3	Combined right 2,224,547 or 9.9%
Monarchists	804,806	3.6	



ITALIAN COAL MINERS working in cramped galleries on the island of Sardinia in 1952. Conditions were slowly being improved as funds became available for the purchase of underground machinery

The combined results of the provincial elections held in 1951 and 1952 in all Italy (except for the autonomous regions of Sicily, the Alto Adige and the Val d'Aosta) were announced to be as shown in the table.

About 7% of the electorate voted for other very small parties. Compared with the parliamentary elections of April 18, 1948, the centre parties, Christian Democrats in particular but not the Liberals, had lost, while the extremists on the left and more emphatically on the right had gained; the combined centre had nevertheless managed to poll exactly half the total number of votes. On the right, monarchists and neofascists had each won more than 160,000 fresh votes; while the former had triumphed in Naples, the latter had made their biggest gains in Rome. Finally the local elections had accentuated the difference between the leftist north and rightist south of Italy.

The second half of the year, broadly speaking, was devoted to manoeuvring for position in preparation for the parliamentary elections due in the spring of 1953. Everything depended upon the electoral law which would prevail at the time and which must now be determined. The centre parties wished to apply the same regulations as those which had governed the local elections, that was, to sanction the linking of party lists and in the future parliament to give an additional premium of seats to the most successful party in order that it should be able to govern with a working majority. Further, the centre parties for long meditated legislation to prevent the extremists of the left and of the right from exploiting constitutional liberties such as those of the freedom of the press and the right to strike.

On June 18, after lengthy debates, a law against the reconstitution of fascism was passed. This helped to restrain the ardour of the national congress of the neofascist *Movimento*

Sociale Italiano (M.S.I.), which was allowed to meet on June 26 at Aquila in the Abruzzi. There the party's secretary general, Count Alberto de Marsanich, succeeded in imposing the adoption of a relatively moderate policy to be based upon a corporative economy at home and halfway acceptance of NATO, but with an avowed preference for Spain over Great Britain in the company of Italy's allies. Antifascists, however, continued to regard future developments with apprehension since the ban upon the political activities of former fascist leaders was due to expire at the end of the year. Rodolfo Graziani and Filippo Anfuso were already members of the M.S.I., while Dino Grandi and Giuseppe Bottai seemed to be holding back.

Against Anfuso, De Gasperi launched a telling attack in a speech at Predazzo on Aug. 31 with which he was considered to have launched his political campaign leading up to the elections in the spring. His general line was to appeal to all moderate opinion against the two extremes. After the losses on May 25 his own party pressed for ministerial change; it was known that the prime minister wished to reinstate representatives of the Liberals and Social Democrats. When the Italian chambers reassembled at the end of September a new version of the monarchists called the Italian Democratic party, sponsored by Vincenzo Selvaggi and Guglielmo Giannini (formerly leader of the Common Man party), put in its claim to a place in the government coalition. Meanwhile the Communists threatened to fight the proposed electoral reform by initiating a referendum to condemn it as unconstitutional; to bring about a referendum they needed 500,000 signatures which they could easily collect.

Before the end of 1951, 11 of the 21 signatories of the Italian peace treaty had expressed their willingness for its revision and early in 1952 all but the Communist countries fell into line. The practical results were that from the beginning

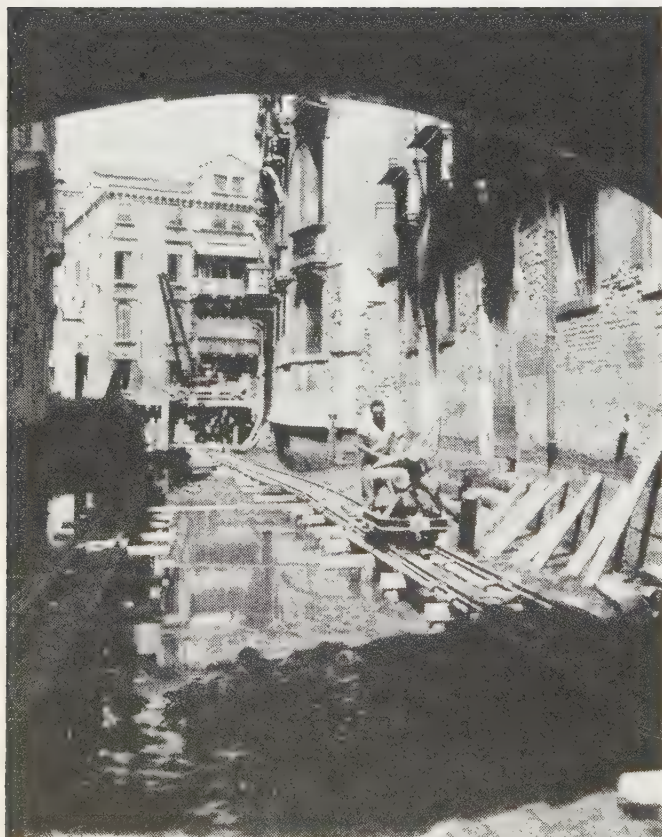
of 1952 the restrictions upon Italy's armaments were a dead letter and Italy became an active member of the various western European organizations. De Gasperi himself attended the meeting of the Council of Europe at Strasbourg in September; later in the month he visited Konrad Adenauer at Bonn before receiving the Charlemagne prize for service to peace (third award) at Aachen. Meanwhile the difficulty between Italy and Yugoslavia over Trieste remained insoluble (*see TRIESTE*).

There was considerable argument during the year between Italy and the United States, the Italians pressing for larger U.S. orders with Italian industry and for what they regarded as adequate aid toward the rearmament of Italy; on Sept. 12 \$40,000,000 was suggested as the first Mutual Security Aid allocation to Italy for 1952-53. The increase in U.S. duties on cheese, almonds, olive oil and hats was something of a blow to Italy and provided fuel for the leftist "anti-Atlantic" campaign. As for rearmament, the Italians reported to NATO on Sept. 16 that of the 12 divisions that Italy was to have had ready, three infantry divisions, one armoured brigade and one Alpine division were fully trained and equipped; by the end of 1952 one more in each category was ready while the air force had reached well over 350 first-line aircraft.

During 1952 Italian industrial production increased very slightly. The fact was that as a result of the slump in textiles, the manufacturing industries actually produced less. Yet there were important developments of a different kind which promised great things for the future. Boring for oil and methane or wet gas continued with considerable success, and the distribution of the latter was extended. The production of methane rose to about 4,500,000 cu.m. a day, being about three times the amount of methane produced in Italy in 1950. On June 1 a 500,000,000-kw.hr. power plant burning natural gas was inaugurated by the premier at Tavazzano near Milan with a pipe line to serve Turin so that the Fiat works could be supplied before the end of August. On Sept. 4 Enrico Mattei, the president of the A.G.I.P. (the state company for oil boring) and of S.N.A.M. (the state company for gas development), signed an agreement guaranteeing the inclusion of Genoa in the gas network, and construction of a pipe line to Genoa began before the end of the year. Already sober judges expected within the foreseeable future the reduction of Italy's coal imports by four-fifths, involving a tremendous economy in foreign exchange. Just when the possibilities of the further extension of water power were coming to an end, it began to be replaced not only by gas but also by natural steam of volcanic origin, and during 1952 plans for an additional power plant based upon newly found steam jets were worked out. Meanwhile the methane was a direct contribution to the Italian chemical industry in addition to its value as fuel.

The year saw a good deal of fresh capital invested in industry especially in southern Italy where, for instance, a cement factory was founded at Avigliano near Potenza, a mechanical and chemical factory near Cosenza and a glass factory at Cagliari in Sardinia. This was, of course, part of the fruition of the national effort to grapple with the appallingly backward state of the south, an effort toward which U.S. aid had contributed.

Industrialization in southern Italy was complementary to agrarian reform in which considerable progress was made during the year. In particular the Sila plateau in Calabria, which a few years previously had been a dangerous wilderness from which torrential floods descended in the winter, was by the end of 1952 converted into a prosperous peasant colony with new villages and improved farming. By the end of July detailed plans had been worked out for the allocation of 712,000 ha. (or 20% of all large and medium-sized estates) to landless peasants all



MINIATURE RAIL LINES set up in the canals of Venice, It., to speed repair work in 1952. The network of sea water canals had been steadily undermining the foundations of Venetian buildings and architectural treasures which threatened to crumble unless rapidly bolstered

ver the country; in addition to the Sila, where allocations were year ahead, a good deal of land was redistributed in Apulia and the poor Maremma district of Tuscany.

In the middle of September President Einaudi appointed two greatly respected men to be senators, Don Sturzo and Umberto anotti Bianco, president of the Italian Red Cross and a distinguished scholar. (See also ERITREA; SOMALILAND, ITALIAN.)

(E. WI.)

Education.—Schools (1949–50): elementary 39,188, pupils 4,815,239, teachers 167,743; secondary 2,358, pupils 369,574 (boys 233,036, girls 16,538), teachers 40,891; technical secondary 954, pupils 144,130 (boys 5,253, girls 28,877), teachers 16,102; schools of art and academies music 103, pupils 12,080 (boys 8,554, girls 3,526), teachers 1,727; universities and institutions of higher education 27, students (1948–49) 17,978, lecturers 3,890.

Finance and Banking.—Budget: (1950–51 est.) revenue 1,227,000,000,000 lire, expenditure 1,397,000,000,000 lire; (1951–52 est.) revenue 1,455,000,000,000 lire, expenditure 1,824,000,000,000 lire. Internal national debt (Aug. 1951) 2,820,000,000,000 lire. Currency circulation (July 1952) 1,220,000,000,000 lire. Bank deposits (July 1952) 1,773,000,000,000 lire. Gold and foreign exchange (May 1952) U.S. \$960,000,000. Monetary unit: lira (pl. lire) with an exchange rate of 1,750 lire to the pound and 625 lire to the U.S. dollar.

Foreign Trade.—(1951): Imports 1,353,600,000 lire, exports 1,027,000,000 lire. Main sources of imports (1951): U.S. 21%; Germany 7%; K. 4%; Argentina 5%; France 5%. Main destinations of exports: K. 13%; Germany 8%; France 9%; U.S. 7%; Switzerland 6%. Main imports (July–Dec. 1951): raw cotton 11%; coal and coke 10%; petroleum and products 9%; wool 8%; grains and products 8%. Main exports: machinery and vehicles 16%; cotton yarn and fabrics 14%; fruits and vegetables 12%; artificial fibres and fabrics 12%; other textile goods and manufactures 11%.

Transport and Communications.—Roads (1950): 108,237 mi. Licensed motor vehicles (Dec. 1950): cars 342,021, commercial 229,277. Railways (1950): 13,449 mi., of which state railways 10,137 mi. Traffic on state railways (1950): passenger-miles 12,643,000,000; freight, ton-miles 24,400,000. Shipping: merchant vessels, 100 gross tons and over (July 51) 1,076; total tonnage 2,918,137. Air transport (1950): passenger-miles 94,300,000; cargo, ton-miles 1,900,000; mail, ton-miles 600,000. Telephones (1951): 1,244,152. Radio receiving set licences (1949): 543,000.

Agriculture.—Main crops (metric tons, 1951): wheat 6,904,000; maize 750,000; barley (1952) 258,000; oats (1952) 496,000; rye 122,000; potatoes 218,000; rice (1950) 690,000; sugar, raw value 669,000; dry beans 171,000; cotton, lint 5,000; cottonseed 9,000; flax fibre 4,300; seed 12,000; hemp fibre 65,100; rapeseed (1950) 11,000; peanuts 100; tobacco (1950) 67,000; olives 1,911,000; olive oil 160,000; oranges and tangerines (1950) 583,000; lemons, limes and other citrus fruits (1950) 300,000; grapes (1950) 5,990,000. Wine production (1951) 5,388,000 hl. Livestock (1950–51): cattle 8,325,000, sheep 10,386,000, pigs 4,052,000, horses 800,000, mules 390,000, goats 2,489,000, buffaloes (1949–50) 12,000. Livestock products (metric tons, 1949): wool, greasy 18,000; meat 612,000, including beef and veal 302,000 and pork 12,000; butter 56,000; cheese 237,000; eggs 4,550,000 (number). Fisheries, total catch (1950): 190,201 metric tons.

Industry.—Index numbers of employment in manufacturing, 1948=100 (1950) 147. Fuel and power (1951): coal 1,166,000 metric tons; lignite 3,000 metric tons; gas, natural 956,000,000 cu.m., manufactured 872,000,000 cu.m.; electricity 30,315,000,000 kw.hr.; crude oil 17,600 metric tons. Raw materials (metric tons, 1951): iron ore 514,000; pig iron 1,048,000; steel ingots and castings 3,050,000; lead, smelter 36,000; zinc, smelter 46,000; aluminum, smelter 49,800. Manufactured goods (metric tons, 1951): cement 5,580,000; cotton yarn 190,000; rayon garment yarn 65,100; rayon staple fibre 65,500; motor cars 131,000, commercial 16,000. Index numbers of industrial production (1948=100, 1951): general index 144; mining 124; manufacturing 147.

Ivory Coast: see FRENCH UNION; FRENCH WEST AFRICA.

Jamaica. A British colony and dependencies in the Caribbean sea. Dependencies: Cayman Islands (100 sq.mi.; pop. 1951, 7,000) and Turks and Caicos Islands (166 sq.mi.; pop. 7,000), with local legislatures. Area (colony): 4,411 sq.mi. Pop.: (1943 census) 1,237,063; (1951 est.) 1,430,000, mainly of African descent. Language: English. Religion: Christian, including (1943) Anglican 350,311, Presbyterian 92,975, Roman Catholic c. 70,000. Chief towns (pop. 1943 census): Kingston (cap., 201,911); Spanish Town (12,007), Montego Bay (11,547). Administration: governor; privy council, 4 ex officio and 2 nominated unofficial members; executive council, 1 ex officio, 2 nominated and 5 elected members; legislative council, 3 ex officio, 2 official and not less than 10 nominated unofficial members; house of representatives, 32 elected members. Governor in 1952, Sir Hugh Foot.

History.—Proposals for constitutional advances were out-

lined by the governor in his speech at the opening of the legislature in April 1952. His subsequent message to the house of representatives contained recommendations for the establishment of six separate ministries allotting executive functions to ministers. Two additional ministers would be without portfolios, giving the elected side a majority of three in the executive council. In accepting these proposals, members of the opposition demanded in an amendment that immediate steps should be taken to secure full self-government for the island in its internal affairs; and a unanimous vote of the house was given in favour of setting up a committee to draft proposals for full self-government with dominion status within the British Commonwealth.

Shipments of bauxite-bearing ore were made during the first half of the year. It was estimated that a minimum of £22,000,000 would ultimately be invested in this industry. A factory capable of supplying all the cement needed by the colony was erected on the outskirts of Kingston and began operations in January. The Agricultural Development corporation and the Industrial Development corporation were set up.

The amount expended on the banana rehabilitation scheme, which was started after the hurricane of 1951, rose far above the £500,000 originally allocated and was expected to reach £1,046,000 by the end of 1952, by which time the industry was expected to have recovered from the effects of the hurricane. The acreage under bananas was increased from about 50,000 before the hurricane to 80,000.

A team of specialists from the International Bank for Reconstruction and Development made a survey to determine the amount of additional employment, national income and investment needed for Jamaica's economic development program; to examine the government's potential financial resources for this development; and to discover ways of attracting foreign capital to the colony. The fifth session of the West Indian conference was held at Montego Bay in November and December.

Education.—*Colony:* schools (1951), 396 denominational and 292 government primary (185,569 pupils); 27 secondary (7,100 pupils). *Cayman Islands:* 12 primary schools (859 pupils). *Turks and Caicos Islands:* 12 primary schools (964 pupils); 1 government senior school; University College of the West Indies.

Finance and Trade.—Budget (1952–53 est.): *Colony:* revenue £14,712,033; expenditure £15,035,420. *Dependencies:* revenue £131,354; expenditure £131,855. Foreign trade (colony 1951): imports £29,000,000; exports £18,390,000. Principal exports: sugar, bananas, rum, cigars, pimento, ginger, coffee, citrus, cocoa and (from Turks and Caicos Islands) salt. Sugar crop (1952) 265,871 tons; bananas 4,000,000 stems for export; rum (1951) 1,580,000 gal. Monetary unit: pound sterling with local notes. (P. H.-Mv.)

Japan. Japan consists of four principal islands, Hokkaido, Honshu, Kyushu and Shikoku (total area: 146,690 sq.mi.), and minor adjacent islands. Total population: (est. Aug. 1951) 84,400,000. Chief cities (1950 pop.): Tokyo (cap., 5,385,071); Osaka (1,956,136) Kyoto (1,101,854); Nagoya (1,030,635); Yokohama (951,189); Kobe (765,435). Principal religions: Buddhism, Shintoism. Emperor: Hirohito; prime minister in 1952, Shigeru Yoshida.

History.—*Foreign Affairs.*—On April 28, 1952, the Japanese peace treaty came into effect, bringing to an end the Allied occupation which had lasted since 1945. Japan thus resumed its place as a fully sovereign member of the society of nations. In proclaiming the treaty, Pres. Harry S. Truman of the United States noted that six years of joint effort to restore Japan as a prosperous and progressive nation had strengthened the bonds of friendship between the Japanese and United States peoples, and expressed confidence that Japan was ready to play its full part in meeting the common menace of communism. Since Japan possessed no regular armed forces, United States troops remained in the country for its own protection under the terms of the Japanese-American security treaty of 1951, which became effective along with the peace treaty. Some fears that

this arrangement might compromise Japan's sovereignty were expressed in Japan, but the diet eventually passed the necessary implementing legislation. An administrative agreement signed on Feb. 27, 1952, defined the conditions under which United States troops would be stationed in Japan, including a sharing of costs between the Japanese and U.S. governments and provision for a form of extraterritoriality.

China had not been invited to sign the multilateral peace treaty, because of disagreement among the treaty's sponsors as to whether it should be represented by the Nationalist or the Communist government. In Dec. 1951 Prime Minister Yoshida had expressed the hope of concluding a treaty with the Nationalist government, while denying any intention of making a treaty with the Communist regime. This statement smoothed the way for ratification of the peace treaty by the United States senate. Negotiations were subsequently opened in Taipei, Formosa, and a treaty of peace between Japan and Nationalist China was signed on April 28. Separate agreements restoring peace and diplomatic relations were also concluded by Japan with India and Yugoslavia. Philippine ratification of the general treaty was delayed by the unsettled question of reparations, on which negotiations were suspended as Japan felt unable to meet the full Philippine claims. In January, however, Japan concluded a preliminary reparations agreement with Indonesia. Japan still had to regularize its relations with its former colony, Korea. Negotiations with the Republic of Korea were opened on Feb. 15, but by October it had been impossible to reach agreement on the numerous outstanding questions, including Japanese fishing rights in waters adjacent to Korea, and the large Korean community in Japan.

The U.S.S.R., Poland and Czechoslovakia had not signed the general peace treaty. The U.S.S.R., in fact, denounced it as illegal and as part of United States preparations for a new war in the far east, and these sentiments were echoed by Communist China. On Jan. 1, however, Joseph Stalin addressed a

friendly message to "the Japanese people," wishing them "success in their gallant struggle for the independence of their homeland." Soviet offers of a trade treaty were rebuffed by Prime Minister Shigeru Yoshida, who on Jan. 30 told the diet that there was no possibility of friendly relations with the U.S.S.R. while the latter still held Japanese prisoners of war and was a party to an alliance with Communist China directed against Japan.

In June Japan formally applied for membership in the United Nations, but although its admission was generally favoured, it was prevented by a soviet veto in September. In 1952, however, Japan became a member of the International Bank for Reconstruction and Development and the International Monetary fund, and was provisionally admitted as an associate member of the U.N. economic commission for Asia and the far east.

Domestic Affairs.—The most noticeable feature of Japanese affairs in 1952 was the revival of a spirit of independence and nationalism, probably an inevitable reaction after more than six years of foreign occupation. This was manifested in many ways. Hundreds of additional political and business figures who had been purged under the occupation were depurged and actively re-entered political and economic life. Among them was Mamoru Shigemitsu, who became leader of the newly named Progressive (formerly Democratic) party. Nearly 200 "depurgees" were elected to the diet in October. In August Japan requested permission from the Allies to release 821 war criminals convicted by Allied military courts. Prewar military elements were beginning to reorganize on a small scale. Although the government's policy of maintaining close ties with the United States commanded widespread support, anti-United States sentiment was fostered by Communists and was reflected in a number of disturbances, of which the largest was the May day riot in Tokyo, in which several hundred persons were injured.

Such outbreaks were cited by the government to justify its action in proposing an Anti-Subversive Activities bill giving the authorities broad powers to discipline or dissolve organizations deemed subversive. The bill was strongly opposed by organized labour (under non-Communist leadership) as well as by the press, universities and other liberal elements, which saw in it a revival of the old Peace Preservation law, the chief instrument of the prewar police state. The General Federation of Japanese Trade Unions led a series of strikes and demonstrations against the bill. As passed in July, the law contained clauses stating that its object was not to suppress freedom of speech, legitimate trade union activity or other rights guaranteed by the constitution.

Other bills opposed by labour, revising the Labor Relations Adjustment law, the Labour Standards law and other occupation measures, were also passed at this session of the diet after some revision.

The question of rearmament was widely debated in 1952. Although the United States clearly wished Japan to undertake greater efforts to provide for its own defense, Japanese opinion appeared hesitant to do so. This reluctance stemmed partly from a widely held belief that rearmament, although desirable, was a luxury which Japan could not afford until its economy had been re-established on a sounder basis. Thus during the debates on the budget, it was argued that the tax burden was already too high, and also that any available funds should be devoted to expanding the nation's productive capacity. Some sections of the public feared that rearmament would lead to restoration of military influence over government as before the war. Others were apprehensive lest a Japanese military force should prove to be a provocation to aggression rather than a defense against it. In this situation the government moved slowly. In January, following discussions between the Japanese



UNLOADING MAIL from a Japan Air Lines plane to a waiting mail truck after civil air service was resumed in Japan. JAL planes were still serviced and flown by Northwest Airlines personnel in 1952 but Japanese pilots and mechanics were being trained to replace them

Government and Allied headquarters, it was announced that the National Police reserve, now organized as a military force though still lacking heavy armament, would be increased from 55,000 to 110,000 in 1952, with a further increase in 1953. In August a security board—in effect a ministry of defense—was established to administer the National Police reserve and the coast guard, and a few days later Prime Minister Yoshida for the first time publicly described the police reserve as “the cornerstone of a new army.”

In August the government decided to dissolve the lower house of the diet, and on Oct. 1 a general election was held. The result was an overwhelming victory for conservative forces, represented chiefly by the Liberal and Progressive parties. The communists elected no candidates, and their share of the popular vote decreased sharply while that of the Socialists increased despite a split in the party. During the campaign the Liberal Party was sharply divided by a personal struggle for leadership between Prime Minister Yoshida and the recently deposed Ichiro Hatoyama, but when the diet met, Yoshida was re-elected prime minister. The principal election issues were armament and economic policy. Hatoyama argued for rearmament, while Yoshida was more cautious; the Progressive position resembled that of Hatoyama. Both right and left Socialists opposed rearmament, the latter more vigorously, in keeping with their neutral foreign policy. In their economic recommendations both Liberals and Progressives appealed primarily to business groups.

As Japan regained independence with U.S. aid withdrawn, the country faced serious economic problems, including a rising population, inadequate domestic supplies of food and raw materials, an export volume still less than half of prewar, a damaged and obsolescent industrial plant, an inadequate power supply and an acute shortage of capital. Temporary relief was provided by “special procurement” orders of supplies for United Nations forces in Korea and by expenditures of United States troops stationed in Japan. In 1951 such payments (together with final instalments of U.S. aid) more than offset the heavily passive balance of Japan's merchandise trade. Hence Japan was able to increase its holdings of foreign exchange from the equivalent of \$536,800,000 in Dec. 1950 to \$1,106,000,000 in April 1952, of which \$659,900,000 was in dollars. Yet this apparently strong position was the result of artificial and temporary factors. In the long run Japan would have to expand its exports greatly in order to support itself. Hence there was considerable demand from Japanese businessmen for relaxation of the restrictions on trade with Communist China. Nevertheless the Japanese government turned a deaf ear to Chinese overtures.

The business boom in Japan produced by the Korean war levelled off in the middle of 1951, largely as a result of international market factors, and the first half of 1952 saw only a slight improvement, accompanied by inflationary pressures. Rising living costs brought numerous demands for wage increases and several major strikes. Japan announced its intention of repaying in full its prewar foreign debt, amounting to more than \$450,000,000 in principal and accrued interest, and negotiations with British and United States bondholders were opened in July 1952.

Education.—Nearly all Japanese adults are literate. In 1948–49 expenditures on education were: national and local governments, 78,307,396,877 yen; private, 6,917,291,278 yen; total 85,225,188,155 yen. In April 1951 there were 21,313 elementary schools, with 315,216 teachers and 11,419,267 pupils; 14,301 secondary schools, with 302,191 teachers and 7,319,978 pupils; 422 colleges and universities, with 44,570 teachers and 420,634 students.

Finance.—During 1952 the official value of the yen continued at 360 to the U.S. dollar. National government expenditures (general account) were budgeted for 1952–53 at 852,800,000,000 yen, an increase of 59,100,000,000 over the previous year. This represented 17% of estimated



JAPANESE COMMUNISTS storming the speakers' stand at the 1952 May day rally in Tokyo. Their action touched off an anti-U.S. riot in which Communists fought to break through police lines around the imperial palace grounds

national income. Major items were 182,400,000,000 yen for defense, 123,700,000,000 for public works and 125,000,000,000 for grants to local governments. Government investments in industry were budgeted at 118,500,000,000 yen, a decrease of 17.5% from the previous year. Revenues were expected to balance expenditures, with 638,100,000,000 yen coming from taxes and stamp revenues and 121,300,000,000 from monopoly profits. In addition expenditures in special accounts (government enterprises, etc.) were budgeted at 1,311,000,000,000 yen.

The Bank of Japan's outstanding note issue in May 1952 stood at 444,003,000,000 yen, against 399,332,000,000 a year earlier. In the same period the bank's holdings of national government securities increased from 170,381,000,000 yen to 192,040,000,000, while commercial bank deposits rose from 1,132,886,000,000 yen to 1,576,323,000,000, and commercial bank loans rose from 976,141,000,000 yen to 1,481,729,000,000. Wholesale prices remained fairly stable from the spring of 1951 to June 1952, while both consumer prices and wages in manufacturing advanced somewhat (see Table I).

Trade and Transport.—Japan's per capita exports in 1951, adjusted for price changes and including “special procurement,” were only 56% of the 1934–38 level; imports were 65% of 1934–38. In the first six months of 1952 Japanese imports declined by about 12% from the same period in 1951, during which they had spurted ahead as a result of the Korean war. Exports were about 20% above the level of January–June 1951. Trade figures for 1948–51 are given in Table II. In 1951 North America (chiefly the United States) provided 46.2% of Japan's imports, Asia 28.8%, Europe 7.7%, Australia and Oceania 7.5%, South America 5.5% and Africa 4.3%. Of exports in 1951, 51.5% went to Asia, 15.7% to North

Table I.—Price and Wage Indexes in Japan

	Wholesale prices (1934–36=100)	Consumer prices (1948=100)	Wages in manufacturing (1934–36=100)
1949	20,880	137.9	14,770
1950	24,680	128.4	17,940
1951	34,250	151.4	23,000
1952, Jan.-July	35,190	165.1*	24,880

*Jan.-June.

Table II.—*Japanese Trade*

(In thousands of U.S. dollars)

	Imports	Exports	Balance
1948	684,220	258,271	—425,948
1949	904,844	509,700	—395,144
1950	974,338	820,055	—154,283
1951	1,995,039	1,354,519	—640,519

Table III.—*Agricultural Production in Japan*

	Area (in hectares)		Production (in metric tons)	
	1951*	1950	1951*	1950
Rice	3,012,000	2,994,000	9,435,000	9,652,000
Wheat	735,000	764,000	1,487,000	1,338,000
Barley	420,000	429,000	896,000	1,053,000
Naked barley	559,000	591,000	1,111,000	1,062,000
Sweet potatoes	375,000	398,000	5,020,000	6,292,000
Spring white potatoes	194,000	188,000*	2,536,000	2,363,000*

*Preliminary.

Table IV.—*Industrial Production in Japan*

Monthly average	1952		1950	
	Jan.-June	1951	1950	
Coal and lignite (thousand metric tons)	3,533*	3,610	3,205	
Crude petroleum (kl.)	28,070	30,966	27,372	
Gas (million cu.m.)	146	123.3	95.5	
Electricity (million kw.hr.)	4,216†	3,978	3,741	
Pig iron (thousand metric tons)	299.7	260.6	186.1	
Steel ingots and castings (thousand metric tons)	591.5	541.8	403.2	
Refined copper (metric tons)	8,151	7,579	7,062	
Cement (thousand metric tons)	568.5	545.6	371.9	
Ammonium sulphate (metric tons)	163,536	139,534	130,830	
Machine tools (units)	869	761	336	
Motor vehicles and cycles (units)	11,648	8,861	6,265	
Ships (gross tons)	47,179	37,499	19,674	
Cotton yarn (metric tons)	28,917	28,064	19,861	
Cotton fabrics (thousand sq.m.)	157,342	151,832	107,425	
Synthetic fibres and yarns (metric tons)	14,167	14,314	9,613	
Rayon fabrics (thousand sq.m.)	65,326	56,462	42,253	
Raw silk (kg.)	861,417	906,193	752,501	
Wheat flour (metric tons)	111,460	118,820	140,622	

*January-July. †January-May

America, 10.7% to South Europe, 8.3% to Africa, 7.9% to Australia and Oceania and 5.9% to South America. Foodstuffs accounted for 25% of Japanese imports in 1951 and raw materials for 58%; manufactured products made up 81% of the exports. Textiles were the leading export and textile fibres (cotton and wool) the leading import.

Traffic on Japanese government railways was as follows in 1951 (monthly averages): passenger-kilometres, 6,420,705,000; revenue freight ton-kilometres, 3,073,340,000. Corresponding monthly averages for January-April 1952 were 6,083,181,000 and 3,001,967,000, respectively. In addition, private railways carried a monthly average of 48,851,000 ton-km. of freight in 1951 and 47,352,000 in January-April 1952. In May 1952 the country had 2,640,573 gross tons of steel vessels of 100 tons or more, compared with 1,877,742 in May 1951 and 6,094,271 in 1941. In 1951 32.7% of Japan's imports and 27.2% of its exports were carried in Japanese vessels.

Agriculture.—Weather conditions were good in 1952 and the rice crop was expected to exceed by about 6% the relatively poor crop of the previous year. In 1951, production of staple foods was nearly 10% above the 1931-41 average, but population had increased by about 15% since 1940, and even before World War II Japan produced only about 80% of its own food requirements. Food imports since the war accounted for a large part of its trade deficit (25% of total imports in 1951).

Manufacturing and Mining.—Industrial activity declined somewhat in the last half of 1951 but recovered in the first half of 1952. In June 1952 the index of industrial activity (1934-36=100) stood at 141.4, compared with 137.3 in June 1951. Other June 1952 indexes, on the same base, were as follows (June 1951 figures given in parentheses): utilities 197.2 (185.7), mining 124.7 (119.8), all manufacturing 135.5 (132.4), metals 177.7 (169.2), machinery 174.8 (185.0), textiles 69.5 (63.4), chemicals 133.7 (132.9), food and tobacco 122.2 (100.1). Nonagricultural employment in June 1952 stood at 20,410,000, a gain of 1,060,000 over June 1951. In the same period the number of persons reported as totally unemployed increased from 340,000 to 420,000. (M. S. F.)

Java: see INDONESIA.

Javelin Throw: see TRACK AND FIELD SPORTS.

Jazz: see MUSIC.

Jerusalem. The capital of former Palestine, revered as a Holy City by Christians, Moslems and Jews alike, Jerusalem was divided by a demarcation line established in the Israel-Jordan armistice agreement of April 3, 1949. Pop. (1951 est.): Israel-held new city and capital of Israel, 150,000; Arab-held old city 30,000.

The international position of Jerusalem was still indefinite during 1952, in the absence of any clear pronouncement by the United Nations general assembly. The resolution of the assembly in 1949 calling for an international trust regime for the

city of Jerusalem had not been rescinded. The Israeli government announced in the spring that it intended to move to Jerusalem the foreign office of Israel which had hitherto been in Hakirya, the suburb of Tel Aviv that was the original seat of all the government offices. In Jan. 1950 most of the ministries were transferred to Jerusalem; but the foreign office and ministry of defense remained in Hakirya. Israel's proposal of transfer provoked a warning from the U.S. state department that the United States supported the establishment of a special international regime in Jerusalem, and that its embassy would remain in Tel Aviv. A similar protest was made by the government of Australia.

The celebration of the 3,000th year of Jerusalem, since it became the capital of King David's kingdom, had been fixed for 1952. It was to be marked by the opening of the new convention centre with an international exhibition illustrating man's struggle against the desert. But the building was not completed in time, and the celebration was postponed until 1953. On the other hand, an international scientific conference on desert research, which was to have been a part of the celebration, was held in Jerusalem in May 1952, as originally proposed. It was the first conference of the kind organized in Israel since the establishment of the state.

Another important cultural event of the year was the laying of the foundation stone of the new hospital of the Hebrew university of Jerusalem and the Hadassah, Women's Zionist Organization of America, on a site near the formerly Christian village of Ein Karim, about 6 mi. from the centre of the Jewish city.

In August a conference of Jewish doctors from all parts of the world, except the countries of eastern Europe, was held in Jerusalem to consider medical problems arising out of the mass immigration to Israel. (No. B.)

Jet Propulsion. The year 1952, the 11th year of jet progress following the first jet powered flight with the British-developed Whittle W1 jet engine, marked the advent of turbine engines in the 10,000-lb. thrust category.

Actually, engines in this power class had been in development, on the drawing board and on the test stand, for some time. But in 1952, production models were delivered to the military services for the first time.

Foremost of the 10,000-lb. engines, and one scheduled for wide service use, was the Pratt and Whitney J-57 engine, power plant for the U.S. air force's new intercontinental bomber, the Boeing B-52, the prototype model of which made its first flight on April 15, 1952. The J-57 was scheduled to power a number of other new planes, including a new supersonic interceptor, the Convair F-102. Rated at 10,000-lb. thrust, the J-57 would be developed up to a maximum rating of 15,000 lb. It was this engine upon which United States jet transport builders were pinning their hopes for an efficient commercial turbine-powered design.

There were several other engines in this same power category which reached production status during 1952. Allison division of General Motors Corp. was turning out quantities of its J-71 engine, a development of the earlier and much-lower powered J-35, which had seen wide service use. The J-71 had the same diameter as the J-35, but it was of advanced design and also employed an afterburner for augmented power. Power rating with the afterburner was 9,750-lb. thrust.

Similarly, General Electric Co. Aircraft Gas Turbine division started production of its J-73 engine, an advanced development of the J-47 engine, which was in wide military use during the year. While preserving the basic dimensions of the J-47, the builders were able to boost the power to 9,200-lb. thrust, aug-

entable to about 12,000 lb. through use of the afterburner. The entry of Westinghouse Electric Corp. in the 10,000-lb. class was the J-40, of which there were several models. The J-40-WE-8, rated at about 8,500 lb. was in production late in the year. Just starting in production were two 10,000-lb. versions, the J-40-WE-10 and -12. These ratings were exclusive of afterburner power, which would add another 30 to 40%.

The British did not disclose the extent of production of their new engines, but they had developments in the 10,000-lb. category. The Bristol Olympus was rated officially at 9,750-lb. thrust but it was likely that, with later modifications, it would be developed up to about 12,000 lb.

Information about Russian engines was necessarily sketchy, but the U.S.S.R. was believed to have at least one 10,000-lb. thrust engine in production; power plant for the new model 150 bomber designed by I. Baade, a plane which was comparable to the U.S. air force's Boeing B-47, the engine was known only as the Mikulin turbojet. Also in production was an advanced version of the M-018 design, believed to be rated at between 10,000- and 10,000-lb. thrust.

There were a number of production engines in lower power categories. In the U.S., Allison continued to produce various models (or "dash" numbers) of its J-35 engine, ranging from 6,200-lb. thrust "dry" (without afterburner) to more than 8,000 lb. with afterburner augmentation, and several models of its J-33 which ranged in power from 5,000- to 6,250-lb. thrust dry. There was also the J-33-A-16, a new navy version of the engine which produced up to 8,500-lb. thrust with an afterburner (the afterburner version was known as the J-33-A-29).

General Electric had several models of its J-47 in production, the most powerful being an afterburner version used in the North American F-86D all-weather fighter and known as the J-47-GE-17. It developed slightly more than 8,000-lb. thrust. The other production models of the J-47 were in the 5,800- to 6,200-lb. thrust category.

Pratt & Whitney, in addition to the aforementioned J-57, was producing the J-48, a navy engine officially rated at 6,250-lb. thrust. An improved version, the J-48-P-8, developed more than 6,000-lb.

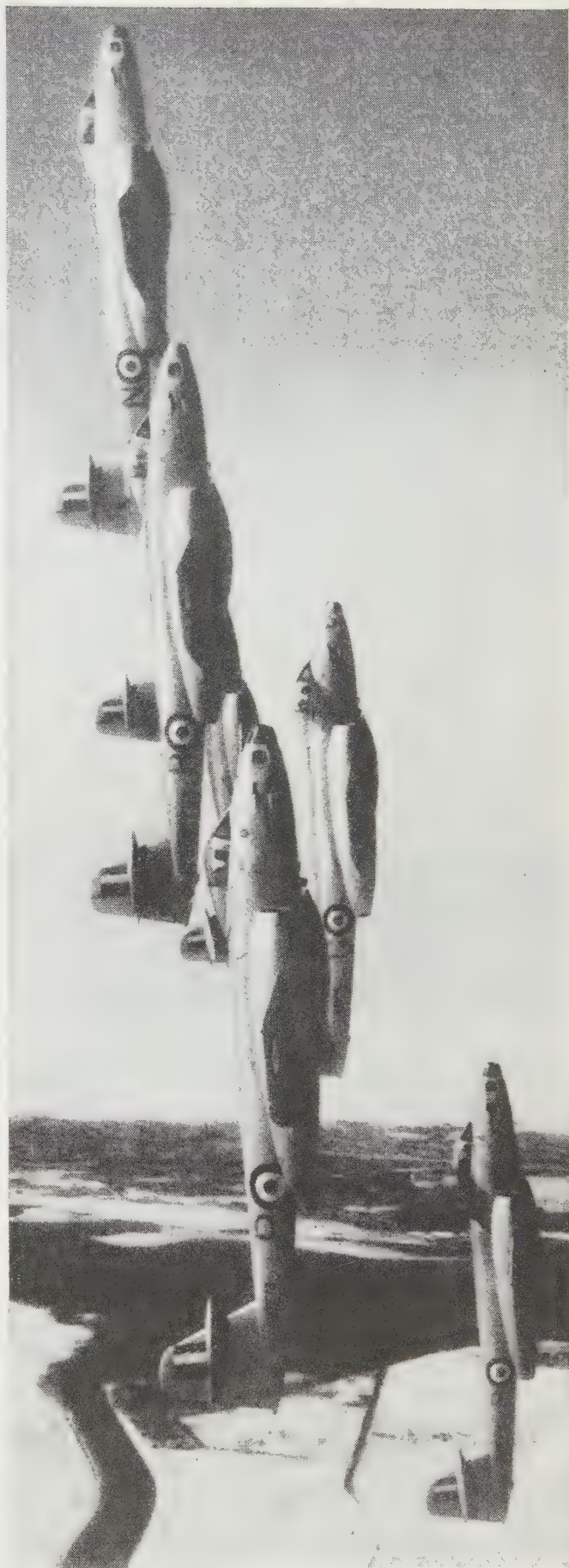
Westinghouse was turning out the low-powered, but small diameter J-34 engine, the most powerful model of which developed 3,400-lb. thrust. The small diameter, however, permitted installing the J-34 in pairs. J-34 installations were gradually being replaced by the previously described J-40.

Wright Aeronautical had only one production jet engine, the 6,200-lb. thrust J-65, being built for the U.S. air force. The J-65 was a U.S. counterpart of the British Armstrong Siddeley Sapphire. It was slated for eventual development to 8,400-lb., a rating which Armstrong Siddeley had already achieved on the first stand. First production models were delivered in mid-1952. In Canada, A. V. Roe Canada, Ltd. continued to produce its 6,000-lb. thrust Orenda engine. Plans to equip the Orenda with an afterburner installation would boost its power over the 6,000-lb. mark.

In Great Britain, Rolls Royce was turning out various models of the Avon axial engine in the 7,000- to 8,000-lb. thrust class and was winding up production of its two centrifugal flow types, the 3,500-lb. thrust Derwent and the Nene, which had been developed up to about 6,000-lb. Armstrong Siddeley was producing 6,500-lb. thrust versions of its Sapphire and de Havilland Engine Co., Ltd. was building the Goblin (3,500-lb.) and the Ghost (5,500-lb.).

The U.S.S.R.'s major production appeared to be the M-45 helicopter engine (6,250-lb.) used in the MIG-15 fighter. There was also an M-012 6,500-lb. thrust engine in production.

In France, Hispano-Suiza S.A. was producing the British Rolls



R.A.F. METEOR F.R. 9 jet planes flying straight up during aerial manoeuvres over the Suez canal in 1952. The photo was made from a companion meteor flying close to the formation

Royce Nene and Tay under licence. The French Nene turned out about 6,000-lb. thrust, the Tay about 6,500-lb. An important engine of French design, the Atar, built by Société Nationale d'Étude et de Construction de Moteurs d'Aviation (SNECMA), was in wide production for the French Air Force's Dassault Mystere fighter. Various models of the Atar were in the 6,000- to 7,000-lb. thrust category and production was planned for an afterburner model which would produce 9,000-lb. thrust.

While the 10,000-lb. thrust engines were being turned out in quantity, development work was under way on a large scale for even more powerful engines. In the U.S., General Electric was developing an engine designed for 20,000-lb. thrust, the J-53. Pratt & Whitney was at work on a 15,000-lb. unit known as the J-75 and Wright had the J-67, a U.S. version of the Bristol Olympus, designed for 13,000-lb. Pratt & Whitney and Westinghouse were also working on advanced developments of their J-57 and J-40 engines which would be in the 13,000-lb. class.

Britain had on the test stand the Rolls Royce Conway, a bypass type of engine in which one part of the air stream bypassed the compressor and joined the main airflow aft of the turbine. It had a thrust rating in the 11,000- to 12,000-lb. category. De Havilland and Rolls Royce were known to be working on advanced axial-flow types in the 15,000-lb. range, but they had not been identified officially. Bristol also had a new version of its Olympus which would be in the 13,000-lb. class.

The highest-powered French development known was the SNECMA Vulcan, a 10,000-lb. thrust engine.

Turboprop Engines.—Production of turboprops in the U.S. was confined to the Allison T-38 and T-40 and the Pratt & Whitney T-34. The T-38 turned out 2,750 h.p. and the T-40 was a coupling of two T-38's for a 5,500-h.p. rating. The T-34 was rated at 5,700 h.p. but later models were expected to turn out 6,000 h.p.

Allison was completing development of a new T-56 engine, which was an advanced version of the T-38, producing 3,750 h.p.

Pratt & Whitney and Wright were working on higher powered engines. Wright was developing an 11,000-h.p. unit known as the T-49 and also had a T-47 of even greater power. Pratt & Whitney had an engine in the 10,000-h.p. class, the T-48.

In Britain, Armstrong Siddeley was producing the Mamba (1,500 h.p.), the Double Mamba (3,000 h.p.) and the Python (4,000 h.p.). Bristol had several versions of its Proteus, basically rated at 3,500 h.p. with the Coupled Proteus, two single units mounted together, turning out 7,000 h.p. Paralleling the Allison procedure in the U.S., Bristol had developed the Proteus 3 up to 3,800 h.p. and was expected to put a new Coupled Proteus of 7,600 h.p. in production. Rolls Royce was producing two versions of the 1,500-h.p. Dart. D. Napier & Son Ltd. had a 4,000-h.p. turboprop called the Eland. De Havilland was reportedly developing a high-powered engine in a class with the Pratt & Whitney T-48, but no information about it was released.

The Russians had a 6,500-h.p. turboprop in a new version of the TU-95 bomber, the copy of the Boeing B-29. The engine was identified as the PTL 022, a propeller version of the M-012 turbojet mentioned earlier. The U.S.S.R. had a more powerful turboprop, the M-028, in limited production. A development of the German B.M.W. 028, it had a rating of considerably more than 8,000 h.p.

Rocket Engines.—Rocket engines were not in wide production in any of the Western countries, since they were not regarded as practical power plants for operational service aircraft because of their limited endurance. They were still in development in both the U.S. and Great Britain, however, for use in specialized research aircraft. The outstanding development in this engine category was the Curtiss-Wright XLR-25, which was finally delivered to the U.S. air force in mid-1952 after years of

development work. Specified as the power plant for the Bell X-2, a supersonic research plane expected to attain speeds above 2,000 m.p.h., the XLR-25 was the first rocket engine capable of being throttled like a turbojet; in previous rocket engines such as the Reaction Motors 6000C4 which powered the Bell X-1, first supersonic plane, power was regulated by the number of cylinders fired. The XLR-25 developed 12,000-lb. thrust and was probably the highest powered rocket engine ever to be installed in a piloted airplane.

In Britain, de Havilland was reportedly working on a project similar to the XLR-25, with throttling capabilities, but in a lower thrust bracket. The engine was named the Spectre. Armstrong Siddeley was continuing development work on its light weight auxiliary power plant, the Snarler, which weighed only 215 lb. and developed 2,000-lb. thrust. Armstrong Siddeley also had a new project, the Screamer, in the 6,000-lb. class.

No information on specific rocket engine developments had leaked through the "iron curtain," but it came to light that the U.S.S.R. was conducting tests with high-speed rocket-powered fighters.

Other Types.—Both the U.S. and Great Britain were known to be working on large ramjets for guided missiles. A ramjet is an engine which compresses the air by the impact of the air on the inlet moving at very high speed ("ram") rather than by a compressor installation such as the turbojet employs. Small, low-powered ramjets and pulsejets (a ramjet with an intermittent pulsing thrust rather than continuous power) were in limited production for use on helicopters.

Considerable progress was made on development of nuclear power plants for aircraft during the year, and the project reached the point where the U.S. air force awarded contracts to two companies for development of an airframe to carry the first nuclear engine. There were two parallel developments in this field, Consolidated Vultee Aircraft Corp. and General Electric Co. working on one airframe-engine combination while Boeing Airplane Co. and Pratt & Whitney were working on another. (See also AVIATION, CIVIL; AVIATION, MILITARY; MUNITIONS OF WAR.)

(J. J. HY.)

Jewels: see DIAMONDS; GEM STONES.

Jewish Religious Life: see JUDAISM; RELIGIOUS EDUCATION.

Jewish Welfare Board, National: see SOCIETIES AND ASSOCIATIONS, U.S.

John Simon Guggenheim Memorial Foundation: see SOCIETIES AND ASSOCIATIONS, U.S.

Johnson, Edwin Carl (1884-), U.S. senator, was born on Jan. 1 at Scandia, Kan. As a boy he moved with his parents to Nebraska, and was graduated from the Lincoln, Neb., high school in 1903. He worked as a railroad section hand, telegrapher and train dispatcher, and in 1909 he moved to Colorado, where he homesteaded on government land. He was elected to the Colorado state legislature for four terms (1923-31), was lieutenant governor of the state from 1931 to 1933 and governor for two terms (1933-37). In 1936 he was elected Democratic senator from Colorado and was re-elected in 1942 and again in 1948 for the term 1949-55. He broke with the New Deal over the issue of Pres. Franklin D. Roosevelt's attempt to "pack" the U.S. supreme court in 1937. Johnson opposed Roosevelt's nomination for a third term and suggested the founding of a third party opposed to U.S. involvement in World War II. Later, however, he supported U.S. entry into the United Nations and recommended that the U.S. spend "billions of dollars" on the Point Four program of technical and financial aid to foreign countries. In 1952 Sen. Johnson was cam-

campaign manager for Sen. Richard B. Russell of Georgia in the latter's unsuccessful bid for the Democratic presidential nomination.

Joint Chiefs of Staff: see GOVERNMENT DEPARTMENTS AND BUREAUS, U.S.

Jordan. An independent Arab kingdom, Jordan is bounded west by Israel, north by Syria, east by Iraq and southeast and south by Saudi Arabia. Area (including Arab Palestine): about 37,100 sq.mi. Pop. (1951 est.): 1,320,000. Capital: Amman (pop., 1951 est., 170,000). Language: mainly Arabic. Religion: Moslem (chiefly Sunni); Christian about 8% (chiefly Arab-speaking Greek Orthodox). Kings in 1952: Talal I and (from Aug. 11) Hussein I; prime minister, Tewfik Abu-Huda.

History.—King Talal and Queen Zeine left Amman on a visit to Europe on Jan. 10, 1952. They returned on Feb. 5; but on May 18 they again left for France and a council of regency consisting of the prime minister, the president of the senate and the president of the chamber of deputies assumed constitutional powers. On June 1, the regency council and the cabinet heard a report from the prime minister and the defense minister (Suleiman Tukan) who had had discussions in France with the king. After a secret session of parliament, the government announced that a new regency council consisting of Ibrahim Hashem, Suleiman Tukan (who had resigned from the government) and Abdurrahman Rusheidat would act for the king because of his deteriorating health. Before reaching this decision, the government had rejected a suggestion from the emir Abdulilah, the regent of Iraq, that a senior representative of the Hashemite royal house should preside over the regency council. Meanwhile, King Talal had informed the cabinet that he approved the government's actions and that he was on his way back to Amman. He arrived on July 3 and placed himself unreservedly at the disposal of his government. On Aug. 11 the government declared the termination of King Talal's reign because of his mental state, and the accession, in his place, of Crown Prince Hussein as king. The council of regency was reappointed to act until the new king's coming of age on May 2, 1953. On Aug. 25 King Hussein arrived in Jordan. On Sept. 8 he left it again for Great Britain to enter the Royal Military college on a four months' course of training. Talal had in the meantime retired to Egypt for treatment.

On Feb. 16 the Jordan government signed the Arab league's Security and Economic Aid pact which came into force on Aug. 23, having also been ratified by Egypt, Syria, Iraq and Saudi Arabia. On April 13 an official Spanish mission visited Amman.

Throughout the year further sporadic frontier affrays persisted along the Jordan-Israel border and on May 29 the prime minister denied reports that Jordan would reach a settlement with Israel involving the cession of any Jordanian territory.

During the summer, plans were announced for the Yarmuk river scheme, to be financed by the U.N. Relief and Works agency. The upper waters of the river would be canalized over an 800-ft. waterfall through a power station and would continue in an irrigation canal the whole length of the Jordan valley down to the Dead sea, where another power station would be built. The Syrian government's consent to the scheme had been secured. The scheme, which would take three years to complete, would bring 180,000 ac. under cultivation in the Jordan valley.

Other projects included the exploitation of the potash resources of the Dead sea under Jordanian management with government assistance; the mining of phosphates in east Jordan under an Italian concession and of barytes near Aqaba under a British concession; and the construction by the government

of a road from Amman to the port of Aqaba on the Red sea out of funds provided by a British loan which was negotiated in the spring of the year.

On Aug. 4 the government abolished the titles of "bey" and "pasha" hitherto conferred as a token of favour by the royal house.

Jordan became the 54th member of the International Monetary fund on Aug. 29. (O. M. T.)

Education.—Government schools (1950) 328, pupils 56,625, teachers 1,462.

Finance and Banking.—Budget (1949-50) balanced at 3,400,000 dinars; (1950-51 est.) revenue 3,300,000 dinars, expenditure 3,800,000 dinars. Monetary unit: Jordan dinar at par with the pound sterling and with an exchange rate of 0.357 dinars to the U.S. dollar.

Foreign Trade.—(1950) Imports 10,767,000 dinars; exports, including re-exports, 1,982,000 dinars. Export figures include bullion (silver coins exported to the U.K. amounting to 409,650 dinars in 1950). Main sources of imports (1950): U.K. 26.1%; Syria and Lebanon 12.3%; Italy 8.7%; Iran 8.0%. Main destinations of exports (excluding bullion): Syria 95.3%; Egypt 2.1%. Main imports: textiles 11.3%; sugar 6.9%; building materials 5.9%; motor vehicles and spare parts 3.5%. Main exports (excluding bullion): cereals 29.3%; raw wool 14.1%; vegetables 13.6%; olive oil 9.9%; fruits 7.8%.

Transport and Communications.—All-weather roads, 1950 (east of Jordan river only): 395 mi. Licensed motor vehicles (Dec. 1950): cars 2,150, commercial vehicles 1,800. Railways (1950): 280 mi. There were two air transport companies, Arab Airways association and Air Jordan. Miles scheduled per week by Arab Airways association (1950): 5,268.

Agriculture.—Main crops (metric tons, 1950): wheat 106,000; barley 41,000; millet 14,000; lentils 8,100; kersennah 8,200; tobacco 200; dry beans (1949) 2,000. Livestock (1949): goats 332,000; sheep 113,000; horses 3,000; asses 26,000; cattle 64,000; mules 2,000; camels 4,000.

Judaism. During 1952 the stream of immigration to Israel narrowed still further, to a rate of from 2,000 to 3,000 per month. To the decimated Jewish communities of Europe the retarding process of emigration was not devoid of some benefit. When men deem their residence in a country to be

LIFTING OF THE TORAH in a synagogue on the island of Djerba off the south coast of Tunisia. Religious custom remained almost unchanged from biblical times in the ancient Jewish colony but its younger members were rapidly migrating to Israel in 1952



temporary, their concern over the effectiveness of its religious, cultural and social institutions is bound to be weak.

The hope of a revitalized Jewish life in the U.S.S.R. and its satellites was more than dim. This was a result not only of the Communists' subtle but effective policy of religious and cultural suppression, but also of their program of transplanting Soviet subjects, especially when suspicion of counterrevolutionary activity could be levelled against such subjects.

Jewish life in the United States conformed to its set pattern. The American Jewish committee and the B'nai B'rith withdrew their delegates from the sessions of the annual conference of the National Community Relations Advisory council because of their unwillingness to adopt the recommendations of the MacIver report, which specified where and how duplication could be eliminated and Jewish activity be more integrated.

An event pregnant with promise was the indemnity agreement arrived at by the representatives of the Israeli state, the various international Jewish organizations and the west German government. The foreign minister of Israel, Moshe Sharett, characterized it as "unique in the annals of international relations" because the overture was voluntarily made by the Bonn regime when the *bundestag*, in the previous year, approved a resolution stating that the "unspeakable crimes" of the nazis against the Jews "impose upon the German people the obligation to make moral and material amends." The agreement stipulated that \$715,000,000 was to be paid in goods to Israel during a period of 14 years, as part of the cost which it assumed in transporting and settling the surviving victims of the nazi regime. The 22 Jewish organizations were to receive \$107,000,000 as a token payment of the wealth which was still in the possession of Germans, because the former owners had been killed and had left no heirs.

These agreements of the delegations of west Germany and Israel were yet to be approved by the parliaments of their respective states. Vehement protests against the settlement came from the Arab nations. Their arguments were that since a state of war between them and Israel still formally existed, the above restitution constituted an unfriendly act.

Notwithstanding this hostile attitude, the Israeli government made an agreement with the United Nations Palestine Conciliation commission to pay Arab refugees an initial £1,000,000 (\$2,800,000) out of accounts frozen in Israel. This step was not conditioned by any similar act on the part of any Arab nation which had frozen and confiscated the property of Jewish subjects who were forced to take up residence in Israel. (See also RELIGIOUS EDUCATION.) (B. H.)

Jugoslavia: see YUGOSLAVIA.

Juliana (LOUISE EMMA MARIE WILHELMINA OF ORANGE-NASSAU) (1909-), queen of the Netherlands, was born at The Hague, April 30, the daughter of Queen Wilhelmina and Prince Consort Henry. On Jan. 7, 1937, she married Prince Bernhard zu Lippe-Biesterfeld (b. 1911). Four children, all daughters, were born of this

marriage: Princess Beatrix Wilhelmina Armgard (b. 1938), Princess Irene Emma Elizabeth (b. 1939), Princess Margriet Francisca (b. 1943) and Princess Maria Christina (b. 1947). After the German occupation of the Netherlands, Princess Juliana went to Canada, and from Sept. 1944 stayed with her mother in England. After the liberation Princess Juliana returned to the Netherlands and lived at Soestdijk. On Sept. 6, 1948, two days after the abdication of her mother, she was enthroned as queen of the Netherlands at the historic Nieuwe Kerk of Amsterdam. In 1950 Queen Juliana, accompanied by Prince Bernhard, paid official state visits to Paris and London. She attended the funeral of George VI on Feb. 14, 1952.

In April she paid an official visit to the United States and on April 3 addressed congress. On April 21 she arrived in Ottawa, Canada, on an informal visit as the guest of governor general Vincent Massey.

Jumping: see TRACK AND FIELD SPORTS.

Junior Colleges: see UNIVERSITIES AND COLLEGES.

Justice, U.S. Department of: see GOVERNMENT DEPARTMENTS AND BUREAUS, U.S.

Juvenile Delinquency. Progress in understanding and treating juvenile delinquency depends on joint participation of governmental and citizen agencies, representing law, medicine, psychology, education, social work, parenthood and religion. Throughout the U.S., civic groups during the year 1952 held public forums on this question. One difficulty was lack of accurate knowledge as to the extent of the problem.

Juvenile delinquency is a legal term to denote an offense committed by a minor within the age limit set up by state legislature or the federal government. The standard juvenile court law states that the offense shall not be considered a crime and that the "care, custody and discipline shall be that which should have been given by the parents." The court is to act on the principle of *parens patriae*. Within the various states this protection is given from age 16 to 21 as the upper limit, the average age being 18. It is 16 in New York and New Jersey, 17

"GAMBLERS" at the Institute for the Scientific Treatment of Juvenile Delinquency in London where boys were encouraged even in their most violent games so that staff members could get clues to some of the reasons for their petty crimes



in Massachusetts, and 21 in California, Arkansas and Arizona.

One hundred and sixty-four juvenile courts report annually to the federal children's bureau, furnishing the only source of reliable statistical information as to the extent of juvenile delinquency. About one-third of the nation's courts do not report. Local police systems also handle juvenile delinquents. Their methods of reporting are not uniform. Thus there is no accurate census. From the information available it appeared that serious offenses among children under 16 had decreased approximately 10% since 1947. Los Angeles, New York city and New Orleans reported sharp increases of minors between 16 and 18 taken into custody for examination on suspicion of drug addiction. With the exception of Chicago, the trend was downward. This was particularly noted in the New England states and in Virginia and Wisconsin.

Boys continued to furnish the majority of delinquents. Taking the country as a whole, girls represented less than 11% of the commitments to correction institutions. Boys led in offenses involving theft and violences. Girls led in sex offenses.

The importance of preventive work is recognized in many states by the establishment of clinics where children with emotional and social difficulties receive physical and mental diagnosis and treatment. Some state universities and departments of mental health maintain child welfare centres.

During 1952 an increasing number of juvenile courts were using private agencies to supplement state correctional schools. During the year the Sweetser Children's home, Saco, Me., under Linwood Brown, director, opened its doors to some court and state wards under a co-educational family life plan. The children received expert medical, psychological and social case-work. They attended the local schools and shared community activities. The private agency plan in treatment of delinquency was arousing citizen responsibility. (M. V. W.)

Kansas. Kansas was admitted to the union as the 34th state on Jan. 29, 1861. It is frequently called the "Sunflower state." The total area is 82,276 sq.mi. of which 82,108 sq.mi. are land. Kansas is located in the geographical centre of the continental United States and is the geodetic centre of the North American continent from which all geodetic surveys are made.

The 1952 population as reported by the Kansas state board of agriculture was 1,980,073, the highest ever recorded in the state. The 1950 census showed a population of 1,905,229. The population was about equally divided between urban and rural. Capital, Topeka, pop. 93,637 (1952). The two largest cities in 1952 were Wichita, 211,796, and Kansas City, 126,947.

History.—The principal state officials in 1952 were: Edward F. Arn, governor; Fred Hall, lieutenant governor; Paul R. Shanhan, secretary of state; George Robb, auditor; Adel Throckmorton, superintendent of public instruction; Frank Sullivan, insurance commissioner; Harold R. Fatzer, attorney general; Ferdinand Voiland, state printer; Richard Fadely, treasurer. The 1951 legislature authorized the governor to appoint a director for the newly created commission, division of administration. Arnold Jones became the director of this department, which has the purpose of reorganizing the fiscal affairs of the state. In the primary election held in Aug. 1952 all of the incumbent state officers were renominated.

Education.—As of Sept. 30, 1952, there were 2,270 one-teacher schools in Kansas, with an enrolment of 25,332. The enrolment (1951-52) in elementary and secondary schools, including kindergarten, was 254,483 (85,085 in secondary schools). There were 17,985 teachers and administrators employed in the state system. The combined enrolment of the four state colleges and one university was 15,281.

The populations of other state institutions were as follows: school for the blind 95; school for the deaf 268; Kansas Technical institute (Negro) 150.

Table I.—Principal Crops of Kansas

Crop	Indicated		Average 1941-50
	1952	1951	
Wheat, bu.	308,676,000	126,113,000	197,949,000
Corn, bu.	57,960,000	58,296,000	71,894,000
Sorghum grain, bu.	16,926,000	57,310,000	25,109,000
Oats, bu.	19,646,000	14,346,000	31,817,000
Barley, bu.	2,254,000	1,547,000	10,580,000
Soybeans, bu.	7,500,000	5,814,000	2,782,000
Hay, tons	2,374,000	3,467,000	2,932,000
Potatoes, bu.	280,000	368,000	1,620,000
Apples, bu.	180,000	432,000	417,000
Grapes, tons	900	1,300	1,860

Source: U.S. Department of Agriculture.

Social Insurance and Assistance, Public Welfare and Related Programs.—The populations of the state's welfare institutions in 1952 were as follows: hospitals for epileptics 658; state training school 1,400; hospitals for tuberculars 400; orphans and receiving home 179; industrial school for girls 81; industrial school for boys 132; industrial farm for women 55; hospitals for insane 4,769; state penitentiary 1,480; reformatory for boys 412.

The 1951 legislature appropriated approximately \$21,263,000 for public welfare institutions and correctional institutions. Public expenditures of all types in 1951-52 (calendar year) totalled \$33,846,756.10, including old-age assistance \$22,977,719.89; needy blind \$396,003.25; dependent children \$4,497,498.92. There were 48,940 persons receiving public welfare assistance in 1951.

Communications.—As of June 30, 1952, the total length of primary and secondary roads in the state was 133,197 mi. The state maintained 9,425.5 mi. of rural and 519.2 mi. of urban highways, the remainder being controlled by their respective municipalities. The total highway expense for 1951 was \$33,379,527.19 (not including expense for county roads). As of Aug. 1, 1952, the state highway commission had contracted for 1,758 miles of construction type work on the primary and secondary highway systems of Kansas at a cost of \$22,963,394. The bridges contracted on the two systems during this period totalled 121 at a cost of \$3,356,376. Kansas had 8,415 mi. of railroads. There were 73 privately owned and 1 Civil Aviation administration airports.

Banking and Finance.—The budget for the biennium 1952 and 1953 totalled \$67,167,483, an increase of \$7,124,677 over the previous budget of 1950 and 1951. Sales tax (2%) collected for the fiscal year 1952 totalled \$46,672,289. The income tax for 1952 totalled \$14,848,862. The bonded indebtedness (soldier's bonus) totalled \$2,250,000 as of June 30, 1952. There were 174 national banks, 435 state banks and 3 trust companies. Of the state banks, 297 were insured under the provisions of the Federal Deposit Insurance corporation. The deposits in the national banks and insured state banks totalled \$1,650,631,104.32 as of June 30, 1952.

Agriculture.—An all-time record wheat crop of 309,000,000 bushels highlighted the 1952 Kansas crop season. The dry summer that favoured maturity and harvesting of the wheat crop was detrimental to production of corn, sorghums, hay and other crops, with production of most grain and forage crops falling below average. Even though hampered by a dry growing season, production of soybeans was also a record, because of the greatly expanded acreage grown. Production of livestock and livestock products during the year continued at a high level. Inventory numbers on Jan. 1, 1952, of most species of livestock and poultry were above a year earlier, with cattle numbers reaching a record high of 4,341,000 head.

Cash receipts from farming marketings of Kansas agricultural products for the first six months of 1952 were 9% higher than during the corresponding period in 1951. Increased marketings of wheat more than offset lower prices of livestock and livestock products.

Manufacturing.—In 1951 there were nearly 3,000 manufacturing and processing plants engaged in the production of more than 1,000 items. The total value added by the manufacturer was approximately \$500,000,000. (Ed. F. A.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in Kansas in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Kansas ranks ninth among the states in the value of mineral output, with 3.11% of the U.S. total.

Table II.—Mineral Production of Kansas

(Short tons, except as noted)

Mineral	1950		1949	
	Quantity	Value	Quantity	Value
Cement (bbl.)	8,759,000	\$19,400,000	7,641,000	\$16,880,000
Clays	352,000	321,000	302,000	260,000
Coal	2,125,000	8,234,000	2,031,000	7,968,000
Lead	9,000	2,561,000	10,000	3,088,000
Natural gas (000 cu.ft.)	364,024,000	24,026,000	294,078,000	15,910,000
Natural gasoline (bbl.)	2,572,000	6,146,000	1,880,000	4,772,000
Petroleum (bbl.)	107,586,000	276,500,000	101,868,000	262,820,000
Petroleum gases (bbl.)	1,115,000	1,487,000	768,000	1,164,000
Salt	846,000	5,915,000	832,000	5,218,000
Sand and gravel	9,781,000	6,782,000	6,187,000	3,328,000
Stone	7,630,000	8,920,000	5,978,000	7,952,000
Zinc	27,000	7,718,000	29,000	7,300,000
Other minerals . . . . .	...	604,000	...	502,000
Total		\$368,614,000		\$337,162,000

Kashani, Abul-Kasim Hossaini (1890?—), Iranian politician, was educated at Karbala, the sacred shrine of the Shi'ite Moslems in modern Iraq, where he lived for several years as a theologian. After being expelled from Iraq by the government for his politi-

cal activities in 1922, he returned to Iran to continue his religious career. In 1943 he came to prominence during the Allied occupation of Iran, as a leading supporter of the pro-German fifth column, in collusion with the grand mufti of Jerusalem and Rashid Ali of Iraq. He was interned by the British occupation forces from June 1944 to Aug. 1945. When an attempt to assassinate the shah failed in Feb. 1949 he was once more arrested, but allowed to go into exile in Syria, whence he returned to Tehran in June 1950. In December he published a manifesto demanding the nationalization of Iranian oil, and thereafter he was closely associated with Mohammed Mossadegh in the campaign for evicting the Anglo-Iranian Oil company. Kashani was elected a deputy for the National Front to the *majlis* in Jan. 1952, and president of the *majlis* in the following August.

Kashmir: see INDIA; UNITED NATIONS.

Kefauver, Estes (1903–), U.S. senator, was born on July 26 in Madisonville, Tenn. He attended the University of Tennessee, Knoxville, and Yale law school, practised law in Chattanooga and in 1939 was appointed state commissioner of finance and taxation. In May of that year he was elected to fill out an unexpired term in the U.S. congress, left vacant by a death, and he eventually served five terms in the house of representatives, where he was increasingly concerned with modernizing the machinery of government. In 1948 he was elected to the U.S. senate.

Kefauver gained unusual attention during 1951 as chairman of the U.S. senate crime investigation committee, whose televised hearings attracted huge metropolitan audiences. The committee's reports gave detailed evidence of political-criminal alliances reaching into city, state and federal offices; described gambling as a \$20,000,000,000-a-year industry; urged laws to curb rackets; and asked for a permanent nonpartisan commission to police the crime-corruption situation. Senator Kefauver himself, however, indicated a desire to turn from this investiga-

tion to devote more attention to foreign affairs.

Kefauver was a prominent candidate for the Democratic presidential nomination in 1952, waging a hard campaign in all parts of the country and leading all other candidates in the number of delegates pledged to him in primary elections. He also led on the first and second ballots at the Chicago convention in July, but was unable thereafter to halt the stampede of delegates to Gov. Adlai E. Stevenson of Illinois.

Kellogg Foundation: see SOCIETIES AND ASSOCIATIONS, U.S.

Kennan, George Frost (1904–), U.S. diplomat, was born on Feb. 16 at Milwaukee, Wis. He attended Princeton university, entered the U.S. consular service and served in a number of European cities. After the U.S. established diplomatic relations with the U.S.S.R. in 1933, Kennan was sent to Moscow. There, during several years of residence broken by periodic appointments to other posts, he acquired a thorough knowledge of the Russian language, and the history, current political trends and diplomatic policies of the U.S.S.R. The U.S. policy of "containment of communism," first stated publicly in an article appearing in *Foreign Affairs* in July 1947 and signed simply "X" was credited to him. At that time Kennan (shortly nicknamed "Mr. X" by the U.S. press) was chief of the new long-range planning staff of the U.S. department of state. In 1950 he left the state department to join the Institute for Advanced Study at Princeton university and later was appointed head of the Ford foundation's East European fund.

Late in 1951 he accepted appointment as ambassador to the U.S.S.R. to succeed Adm. Alan G. Kirk. The White House announced on Dec. 26 that Moscow had approved this appointment, but on the same day *Pravda* published a violent attack on Kennan for his anticommunism. He presented his credentials at the Kremlin on May 14. In July 1952 he issued a strong protest to the soviet foreign office against what he termed the U.S.S.R.'s "Hate America" propaganda. On Oct. 3, 1952, the Kremlin demanded Kennan's recall, charging that he had made "slandorous attacks" on the U.S.S.R.

Kentucky. An east south-central state of the United States, admitted to the union on June 1, 1792, Kentucky is popularly called the "Blue Grass state." Area: 40,395 sq.mi., of which 531 sq.mi. are water. The population by the 1950 official census was 2,944,806, a gain of 3.5% in a decade. The foreign-born population was 16,068, of whom 11,022 were in the cities. The capital, Frankfort, had a population of 11,916. The three largest cities were: Louisville (369,129), Covington (64,452), Lexington (55,534).

History.—The legislature, which adjourned March 21, 1952, enacted some notable laws, especially in social welfare and education. It removed mental hospitals from the department of welfare and placed them under a new department of mental health. It created a youth authority for the individual study of each child who becomes a ward of the state with the idea of making him an asset to the state. It provided that people suspected of mental sickness be taken to hospitals rather than jails, when arrested. It required the segregation of sex cases in state hospitals. It enacted a hospital-licensing bill and required approval of the state board of health for operation of hospitals. It strengthened the laws allowing inspection of relief rolls by county advisory committees with the idea of eliminating cheaters with as little publicity as possible. It provided for the revocation of a liquor dealer's licence if gambling on the licensed grounds was proved. It also made bribing an athlete or taking a bribe to affect an athletic contest a felony.



"THE LONE RANGER," a 1952 cartoon by Fitzpatrick of the St. Louis Post-Dispatch

The state officers in 1952 were: governor, Lawrence W.etherby; lieutenant governor, Emerson Beauchamp; secretary of state, Charles K. O'Connell; auditor, T. Herbert Tinsley; attorney general, J. D. Buckman; treasurer, Pearl Frances Runn; superintendent of public instruction, Wendell P. Butler; commissioner of agriculture, Ben S. Adams; and clerk, court of appeals, Acree Austin.

Education.—Public schools in 1951-52 numbered 4,349 elementary schools, 113 high schools and 416 combined elementary and high schools. Total public-school pupils, grades 1-12, numbered 562,133, and full-time teachers, exclusive of principals, supervisors, helping teachers, etc., numbered 18,188. The state per capita fund was \$26,212,500, and the equalization fund was \$5,573,000.

Social Insurance and Assistance, Public Welfare and Related Programs.—Employment insurance paid for the 1952 fiscal year amounted to \$12,616,737, or an average of \$17.23 for 723,747 weeks. Old-age assistance amounted to an average of 64,972 persons monthly for a yearly total of \$22,331,118. Aid to dependent children amounted to \$10,615,611 for an average monthly number of 21,156 families or 55,063 children. Aid to the blind amounted to \$950,837 for a monthly average of 2,520 recipients. The population of the correctional institutions on Aug. 31, 1952, was: reformatory, 1,908; penitentiary, 984; women's prison, 68; houses of reform: boys, 327; girls, 95. As of Sept. 30, 1952, Kentucky had 82 dry counties, 27 wet counties and 11 split counties (one or more wet precincts dry counties).

Communication.—As of June 30, 1952, the Kentucky department of highways had under maintenance 15,389 mi. of road. Two public toll bridges and four private toll bridges over the Ohio river then served traffic. Road and receipts for the fiscal year amounted to \$60,882,415.68; expenditures amounted to \$66,044,719.15. The state had 820,339 registered automobiles and motor vehicles for the calendar year 1951. Miles of railroad amounted to 3,860.42 of first main track in 1950. Aeroplanes carried 834,641 passengers in 1951. In July 1952 Kentucky had 29 cities with 42 radio stations and 178 newspapers, of which 30 were dailies. Telephones in service in 1951 numbered 487,822.

Agriculture.—In 1950 percentage receipts from Kentucky farm markets were: tobacco, 35; cattle and calves, 23; dairy products, 11; hogs, 8; eggs and chickens, 6; corn, 4; sheep and wool, 2.

Table I.—Principal Crops of Kentucky

	Indicated 1952	1951	Average 1941-50
Wheat, bu.	61,741,000	80,662,000	77,241,000
Barley, bu.	4,540,000	3,568,000	5,173,000
Oats, bu.	2,626,000	2,136,000	2,103,000
Corn, bu.	1,512,000	1,192,000	1,842,000
Beans (for beans), bu.	1,564,000	2,470,000	1,502,000
Hay, tons	2,100,000	2,277,000	2,328,000
Tobacco, all types, lb.	452,162,000	460,370,000	397,950,000
Potatoes, bu.	1,596,000	1,960,000	3,265,000
Potatoes, sweet, bu.	336,000	462,000	1,141,000
Apples, commercial crop, bu.	336,000	376,000	317,000
Oranges, bu.	497,000	72,000	572,000
Almonds, bu.	92,000	56,000	128,000

Source: U.S. Department of Agriculture.

Banking and Finance.—On June 30, 1952, there were 92 national banks in Kentucky with total assets of \$709,893,000 and 290 state banks and trust companies with resources of \$1,081,217,820.20. Preliminary returns indicated a total tax revenue for the fiscal year ending June 30, 1952, of \$1,267,458 for the general fund and \$56,000,780.27 for nontax receipts. For the general fund, income taxes contributed about \$18,112,468, corporation income taxes \$10,853,451 and cigarette taxes \$5,533,348. Five other taxes—distilled spirits consumption, distilled spirits production, tangible personal property, foreign life and fire insurance premiums, and utility gross receipts—in descending order contributed from \$3,455,468 to \$1,044,852 each. Intangible personal property and inheritance taxes in most equal amounts yielded a total of \$4,920,993. The estimated expenditures exclusive of roads for 1951-52 were: welfare, \$67,205,637; education, \$51,164,913; general government, \$17,253,775; and agriculture and conservation, \$3,712,354.

Manufactures.—In 1951, 55 new plants, employing 27,934 labourers at an estimated additional annual pay roll of \$83,802,000, contributed a net value of \$1,054,809,400. The value of nondurable sales in 1951 was about \$1,893,000,000. The ranking was food (\$847,000,000), tobacco, chemicals, apparel, petroleum and coal, printing, textiles and leather (\$34,000,000). Durables had a sales value of approximately \$972,000,000, the ranking being: machinery (\$239,000,000), primary metals, fabricated

metals, lumber, furniture, electrical machinery, transportation equipment, stone, clay and glass combined and instruments (\$12,000,000).

Commerce.—Kentucky's retail trade in 1951 employed an estimated 90,300 workers and had sales amounting to \$2,156,000,000. The wholesale trade employed only 28,100 workers but had sales amounting to an estimated \$2,206,000,000. (W. W. Js.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in Kentucky in 1949 and 1950, listing all items with value exceeding \$100,000. Data for 1951 were not yet available. Kentucky ranks second among the states in the production of fluorspar and third in coal, and stands eighth in value of output, with 3.88% of the U.S. total.

Kenya: see BRITISH EAST AFRICA.

Kimball, Dan A. (1896—), U.S. secretary of the navy, was born on March 1 in St. Louis, Mo.

He served as a pilot in World War I and in 1920 went to California where he joined the General Tire and Rubber company. He supervised that company's contracts for such aviation auxiliary material as life rafts and essentials in the field of rocket and jet propulsion. In 1942 he was made director of the Aerojet Engineering corporation at Azusa, Calif., a General Tire subsidiary, and was placed in charge of the development program.

He was named assistant secretary of the navy for air on Feb. 11, 1949, a few months later became undersecretary, and on June 28, 1951, Pres. Harry S. Truman nominated him to be secretary of the navy.

Kimball made an inspection tour of U.S. defense bases in the far east during the spring of 1952, declaring after a visit to Formosa that he would welcome a Chinese Nationalist invasion of the mainland and that the U.S. navy would annihilate any attempt by the Chinese communists to attack Formosa. The U.S. state department, however, denied any official sanction of the invasion of mainland China.

Kimpton, Lawrence Alpheus (1910—), chancellor of The University of Chicago and sixth of its chief executives, was elected on April 12, 1951, and formally inaugurated on Oct. 18, 1951.

Born on Oct. 7, in Kansas City, Mo., he attended public schools there, graduated from Stanford university, Stanford, Calif., in 1931, and took his Ph.D. degree at Cornell university, Ithaca, N.Y., in 1935. That year he was appointed a teacher at Deep Springs school, and in 1936 was named dean and director. In the autumn of 1942, Kimpton became dean of the college of liberal arts and professor of mathematics and philosophy at the University of Kansas City. He joined the Metallurgical laboratory, atomic bomb project at The University of Chicago, as associate chief administrative officer in 1943, and shortly thereafter became chief.

In 1944 he became dean and professor of philosophy and education at The University of Chicago, and on July 1, 1946, was elected vice-president and dean of faculties. He accepted an appointment as dean of students, Stanford university, in 1947, returning to The University of Chicago on Aug. 1, 1950, as vice-president in charge of development, the position he held when elected chancellor.

As chancellor, Kimpton restricted his participation in outside activities to concentrate on the administration of the university. He was concerned educationally with strengthening the position of the humanities as studies whose values are needed in contemporary society. Closer integration between the university and its professional schools, and between the college and the graduate divisions was another administrative area to which he gave attention. He also undertook to bring the budget of the university into balance. Under his leadership, the area in which the university is located organized the South East Chicago commission, to take measures for the protection and stabilization of the community. (W. V. M.)

Table II.—Mineral Production of Kentucky

(Short tons, except as noted)

Mineral	Quantity 1950	Value 1950	Quantity 1949	Value 1949
Fluorspar	661,000	\$ 3,553,000	571,000	\$ 2,903,000
Coal	78,496,000	393,637,000	62,583,000	315,472,000
Fluorspar	80,000	2,555,000	63,000	2,018,000
Fluorspar, pig	754,000	?	627,000	?
Natural gas (000 cu. ft.)	73,613,000	14,443,000	51,851,000	9,888,000
Natural gasoline (bbl.)	244,000	687,000	202,000	595,000
Petroleum (bbl.)	10,381,000	28,650,000	8,803,000	24,300,000
Petroleum gases (bbl.)	1,535,000	1,658,000	1,419,000	1,591,000
Sand and gravel	2,383,000	2,263,000	2,376,000	2,169,000
Clay	7,417,000	8,866,000	7,100,000	8,586,000
Clay	1,000	207,000	1,000	231,000
Other minerals . . . . .	...	3,437,000	...	4,475,000
Total		\$459,956,000		\$372,229,000

*Values for processed materials are not included in the totals.

Kiwanis International: see SOCIETIES AND ASSOCIATIONS, U.S.

Knights of Columbus: see SOCIETIES AND ASSOCIATIONS, U.S.

Knowland, William Fife (1908—), U.S. senator, was born on June 26 at Alameda, Calif. After taking his bachelor's degree at the University of California, Berkeley, in 1929, he entered the newspaper business, becoming assistant publisher of the *Oakland Tribune* (Calif.) in 1933. He was a member of the California state assembly from 1933 to 1935 and of the state senate from 1935 to 1939; in 1941-42 he was chairman of the executive committee of the Republican national committee. In 1945 Gov. Earl Warren of California appointed him to the U.S. senate to fill the unexpired term of Hiram W. Johnson. He was elected on the Republican ticket in 1946 for the full term 1947-53 and was re-elected in 1952 for the term 1953-59. He became perhaps the foremost U.S. champion of Chiang Kai-shek and the Chinese Nationalists, opposing the administration's foreign policy in the far east and attacking the dismissal of Gen. Douglas MacArthur. On June 9, 1952, he also defended Pres. Syngman Rhee of the Republic of Korea against charges of political dictatorship, saying that Rhee, like Chiang Kai-shek, had been made a special target for Communist calumny.

Koje-do Riots: see KOREAN WAR; PRISONERS OF WAR.

Korea. Korea is a peninsula extending from Manchuria and the U.S.S.R. southward, 525 mi. long and from 125 to 200 mi. wide. It is bounded on the north by the Yalu and Tumen rivers, on the south by the Straits of Korea, on the west by the Yellow sea, and on the east by the Sea of Japan. Area: 85,225 sq.mi. Population (1951 estimate): about 30,000,000 of which about 21,000,000 were in the Republic of Korea (south of the 38th parallel) and 9,000,000 in North Korea. In Aug. 1951 there were about 3,700,000 refugees in South Korea, who had left their homes because of the hostilities which began on June 25, 1950, with the invasion of South Korea by North Korean troops. More than 400,000 of these refugees came from North Korea.

The capital of the Republic of Korea (South Korea) which was established on Aug. 15, 1948, is Seoul, population estimated at 458,000 in Aug. 1951 compared with 1,640,000 in 1949. As a result of hostilities, Pusan, with a population of about 840,000 (1952 estimate), became the temporary capital. The capital of the Democratic People's Republic of Korea (North Korea), which was established on Sept. 9, 1948, is Pyongyang, with a population of about 500,000.

Major religions: Buddhism, Confucianism, Shamanism and a native religion, Tonghak (Chuntokyo). There were 500,000 Christians in Korea before the war.

History.—The hostilities that began in June 1950 between North and South Korea continued into 1952. Truce talks, which began in mid-1951 between the United Nations command and the Communist forces, also continued into 1952. Although agreement had been reached on 61 out of 62 points in the armistice agreement by mid-1952, the issue of the repatriation of prisoners of war remained unresolved. (See KOREAN WAR.)

Syngman Rhee (q.v.), president of the Republic of Korea since it was founded, was re-elected on Aug. 5, 1952, for a new term beginning Aug. 15. Prior to the election there was a dispute between Rhee and the national assembly, which had the power to elect the president, over whether the constitution should be amended, as suggested by Rhee, to provide for the popular election of the president. Elections that were legally required on or before June 23, 1952, were postponed as martial

law was declared and 13 assemblymen were arrested by the government. The assembly unanimously voted not to adjourn. Government officials explained to it the seizures and arrests. They voted to rescind martial law, such action under the constitution being mandatory upon the government. News reports indicated that on June 3, U.S. Pres. Harry S. Truman sent personal note to Rhee expressing "shock" over the interfeud. On the following day the United Kingdom protested to the Republic of Korea. After boycotts of the assembly various times by various factions, the assembly on July 1, 1952, unanimously adopted four amendments to the constitution. These provided that (1) the president should be elected by popular vote; (2) the national assembly should be reorganized into a bicameral body; (3) cabinet members should be appointed by the president upon the recommendation of the prime minister instead of by the president on his own initiative; (4) the cabinet might be dissolved by a vote of nonconfidence by the assembly.

Prime Minister John Myun Chang, former Korean ambassador to the United States, who was appointed in Nov. 1950, signed in April 1952 and was succeeded by Chang Taik. Vice-speaker of the national assembly and former foreign minister.

An agreement on economic co-ordination between the Republic of Korea and the unified command, representing the United Nations, was signed on May 24, 1952, in Pusan. The agreement, which was negotiated by a special mission headed by Clarence E. Meyer, appointed by President Truman, provided the framework for a joint effort on the part of the two signatories to create economic conditions which would assist the military effort by reducing inflation. A combined economic board was to be established which would develop joint measures for economic stabilization. The U.S. would continue to provide basic supplies for Korea while the Republic of Korea would take internal measures necessary for stabilization.

Between July 1, 1950, and Sept. 30, 1951, the United States government delivered to the Republic of Korea \$150,973,000 worth of supplies for relief and rehabilitation. In addition, the U.S. government provided services valued at about \$200,000,000, such as providing power from power barges and transporting refugees. United Nations member nations, U.N. agencies and U.S. voluntary agencies contributed \$14,853,442 worth of goods in the same period, for a grand total of \$364,927,000.

The premier of the North Korean government in 1952 was Kim Il Sung. (See also UNITED NATIONS.)

Education.—As of June 1, 1952, there were in the Republic of Korea 3,921 elementary schools with 2,525,369 pupils; 563 middle schools with 298,980 pupils; 321 high schools with 140,550 pupils; 49 colleges with 27,500 pupils; 17 normal schools with 20,420 pupils; 7 technical schools with 1,350 pupils; 14 higher technical schools with 3,500 pupils; 1,609 civic schools for adult education with 496,250 pupils.

Finance.—The budget of the Republic of Korea for the fiscal year ending March 31, 1952, amounted to receipts of 1,546,043,000,000 won and expenditures of the same amount. The 1952-53 budget, which was adopted in April 1952, provided for a balanced budget with 2,748,760,000,000 won in receipts and the same amount in expenditures. Currency in circulation increased from 496,000,000,000 won at the end of Oct. 1951 to 600,000,000,000 won at the end of March 1952 and 669,000,000,000 won at the end of June 1952. The retail price index in Pusan (1947=100) rose from 2,997 at the end of Nov. 1951 to 6,373 at the end of June 1952. The official foreign exchange rate was increased from 2,500 won=U.S. \$1 to 6,000 won=U.S. \$1 on Nov. 12, 1951; the black market rate at the end of March 1952 was about 13,500 won=U.S. \$1. At the end of March 1952 foreign exchange in the Bank of Korea totalled \$26,500,000, £12,200,000, and Hong Kong \$756,000. The balance sheet of the Bank of Korea showed assets and liabilities of 1,600,000,000,000 won at the end of May 1952.

Trade.—The Republic of Korea's trade deficit continued into 1952. In 1951, its imports totalled 121,800,000,000 won, excluding U.S.-financed imports, and its exports 49,700,000,000 won. In the first quarter of 1952, imports totalled 51,400,000,000 won and exports 29,200,000,000 won. Japan provided almost three-fourths of the imports and was the destination of more than three-fourths of the exports. Chief imports were manufactured goods such as cotton textiles and fertilizer; chief exports were raw materials. North Korea's trade continued to be chiefly with Communist China and the Soviet Union.

Transportation and Communications.—Korea had in 1952 about 3,500 mi. railroads, with the principal line extending from Pusan to Sinuiju at Manchurian border, connecting Seoul and Pyongyang. In 1951 and 1952 most of the railroad lines, bridges and tunnels of the Republic of Korea that had been damaged during the hostilities were rehabilitated. There were about 21,000 mi. of roads, with the principal highway extending from Pusan to Sinuiju and from Hunyung to Mokpo. On Jan. 1, 1950, the Republic of Korea had 9,700 trucks, 1,000 buses, 2,600 passenger cars and 1,500 taxicabs. Korean National Airways began operations in Nov. 1949 between Kangnung, Kwangju and Pusan but service was suspended because of hostilities. Service was opened in Jan. 1951 between Pusan, Kwangju, Kunsan and Seoul and in March 1952 between Formosa and Korea. Northwest Airlines provided international service to Seoul before the Korean conflict and in 1952 continued to serve Pusan.

In 1949 there were about 38,000 telephone lines, 50,000 telephone lines and 175 telegraph offices in the Republic of Korea.

Agriculture.—Agricultural production in the Republic of Korea in 1951 included rice 56,300,000 bu.; wheat, barley and rye 15,100,000 bu.; beans 4,300,000 bu.; other pulses 500,000 bu.; vegetables 1,100,000 metric tons; fruits 68,000 tons; and tobacco 15,000 tons. At the end of 1951 the Republic of Korea had 393,000 work cattle, 780 dairy cattle, 1,000 horses, 1,000 sheep, 20,000 goats, 91,000 rabbits and 719,000 poultry.

Manufacturing.—North Korea is more predominantly industrial than South Korea with important chemicals, textile, iron and steel, machinery, cement plants, of which many were damaged by the ravages of war in 1950. South Korea's manufacturing industries were primarily for production of consumers' goods. Industrial production in the Republic of Korea in 1951 included: cotton yarn 10,464,810 lb.; cotton cloth 500,000 yd.; woolen textiles 146,112 yd.; rubber shoes 7,011,000 pairs; bicycle and automobile tires 36,857; tire tubes 79,319; paper 5,460 metric tons; cement 6,506 tons; and glass 1,300 tons. Production in the first five months of 1952 included: cotton yarn 6,759,109 lb.; cotton cloth 13,300,000 yd.; rubber shoes 2,459,710 pairs; bicycle tires 8,255; tire tubes 8,068; and cement 7,546 metric tons. The Republic of Korea has a state monopoly on salt, tobacco and ginseng. Salt production in 1951 totalled 81,542 tons; cigarettes 6,411 tons; and cut tobacco 31 tons. Electric power production in 1951 totalled 314,431,000 kw.hr. The first five months of 1952, 229,569,570 kw.hr. were generated.

Mining.—North Korea has the major mineral resources found in Korea with important iron ore, copper, lead, zinc, pyrites, coal and magnesite deposits. South Korea has coal, tungsten, copper, lead, zinc, molybdenum and amorphous graphite deposits. Mineral production in the Republic of Korea in 1951 included (in metric tons): copper 222; tungsten 1,100; molybdenum 4.3; amorphous graphite 15,603; kaolin 4,222; fluor spar 64; anthracite coal 70,817; lignite 50; and gold 0.3. Mineral production in the Republic of Korea increased in 1952 as indicated by the following figures for the first five months (in metric tons): copper 701; tungsten 1,203; molybdenum 3.9; amorphous graphite 3,234; kaolin 270; and anthracite coal 180,078. There were also produced in this five-month period 5,162 tons of manganese, 5,424 tons of iron ore, 30 tons of cobalt, 500 tons of columbite and 150 tons of beryl.

BIBLIOGRAPHY.—Bank of Korea, *Monthly Statistical Review*, no. 46 (May 1952); United Nations Command, *Civilian Relief and Economic Report—Korea, July 7, 1950-September 30, 1951*; Korean Pacific Press, *Stream Report 1948-1952* (Aug. 1952). (S. Nr.)

Korean War. Communist ground action during the second winter campaign (1951-52) of the Korean War was characterized by widely scattered exploratory attacks, usually delivered at night and utilizing small units from squad to battalion in size. During 1952 the Communists continued to increase the amount of artillery directed at United Nations troops. In the latter part of the year on several occasions as many as 50,000 rounds of mortar and artillery fell on U.N. troops in one day.

United Nations command ground actions were limited to combat patrolling and probing attacks varying from squad to battalion in size. The Communists were determined to contain U.N. thrusts, and even reconnaissance patrols met immediate resistance accompanied by increasing amounts of mortar and artillery fire. Ever since the front lines had been stabilized in Nov. 1951, a constant battle for observation had occurred. In the second period of 1952, the Korean summer-fall campaign (May 1-Nov. 1), the battle for the peaks became particularly intense. Opposing front lines were as close together as 50 yd. in some places and as far apart as 10 mi. in others. Battle positions ran along ridge lines offering good observation of the enemy territory. It was for possession of these high mountains protruding into the enemy's lines that the fighting was most intense.

Mountains were named by the front line troops and by newsmen. Stubborn fighting and seesaw actions, with one side gaining control and then being pushed off, caused these impor-

tant terrain features to change hands many times. In the battle for the hills, the 1st marine division on Bunker hill, the 3rd infantry division (including the Belgian and Greek battalions) on Big Nori and Kelly hill, the 2nd infantry division (with the French battalion) on Old Baldy and Arrowhead ridge, the 9th R.O.K. division on Whitehorse mountain, the 7th infantry division on Triangle hill, the 2nd R.O.K. division on Sniper ridge, the R.O.K. capitol division on Finger ridge and Capitol hill, the 25th infantry division (including the Turkish brigade) on Heartbreak ridge and the 8th R.O.K. division in the Punch Bowl area were featured in the news accounts.

The accuracy of the U.N. artillery and the close air support of U.N. aircraft helped a smaller number of troops hold off many times larger numbers of Communist infantry in their attempts to win and hold the contested observation points. South Korean troops, well led and trained, fought in some of the most savage fighting occurring in their areas during 1952.

Air Action.—Communist air activity (and aggressiveness) during 1952 varied from month to month. In January, for example, little activity was reported, but in February total MIG-15 sightings were more than 3,500. About 600 of these sightings resulted in air-to-air encounters, and the F-86s accounted for 51 MIGs destroyed or damaged that month. In September 61 MIGs were destroyed, 7 probably destroyed and 57 damaged. The scene of most of the encounters was "MIG alley" in northwest Korea from the Yalu river south to Pyongyang. U.N. F-86 aircraft continued to take a high toll of MIG-15 interceptors which rose to challenge low-level attacking fighter bombers and were thus forced to engage the F-86s flying protective cover. Since the first appearance of the Russian-built MIG-15 in aerial combat, U.N. F-86s had destroyed more than nine MIGs to every F-86 lost in air-to-air engagements.

Stabilization of the battle line lessened the need for close air support, and U.N. aircraft concentrated on the systematic destruction of Communist supply and communication facilities behind the front lines. U.N. fighter bombers, escorted by F-86s, conducted daytime raids against rail lines, rolling stock and trucks, restricting the Communists from transporting men and equipment by day. In some areas, Communist railroad lines had to be discontinued as constant interdiction made repairs impracticable.

In Oct. 1951 the B-29s in the far east air forces bomber command switched largely to nighttime operations. Targets for the B-29s during 1952 were Communist transportation facilities, storage areas and marshalling yards, plus close-support night missions for U.N. ground forces. The B-29s systematically neutralized the Communist airfields in North Korea, making them useless to the Reds.

During the latter part of 1952, as ground action by both sides increased, U.N. close-support aircraft which had been shifted to

Table I.—Summary of Air Action in Korean War to Oct. 25, 1952

Communist Aircraft Losses				
	Destroyed	Probably destroyed	Damaged	Total
MIG-15	475	85	660	1,220
All types (including MIGs)	631	112	749	1,492
U.S.A.F. Aircraft Losses				
	Air-to-air	Ground fire	Other causes	Total
Jet	72	200	47	319
Propeller	17	273	44	334
Total	89	473	91	653
Other U.N. aircraft	6	49	14	69
Shore-based marine aircraft	0	61	29	90
Grand total	95	583	134	812

Destruction Claims (in round figures)			
Item	U.S.A.F.	Attached units*	Total
Sorties flown	525,200	80,300	605,500
Vehicles destroyed	53,650	6,850	60,500
Rail cars destroyed	7,850	900	8,750
Bridges destroyed	560	230	790
Tanks destroyed	1,140	130	1,270
Tunnels	770	150	920
Troop casualties inflicted	144,000	34,000	178,000

*Indicates total claims for the Korean war except period Jan. 1 to March 13, 1951, inclusive.



missions in the rear of the battle line during the lull in ground fighting were returned to close support of front line troops.

Naval Action.—Naval combat action in 1952 was supplied by carrier-based planes from the fast carrier task force on the east coast and the west coast carrier group; by surface ships and aircraft blockading the east coast of Korea from the bomb line to Chongjin; and by fire-support vessels providing gunfire for front line units. By the end of Oct. 1952, the 4 battleships, 8 cruisers and approximately 80 destroyers which had at one time or another participated in the Korean war had fired approximately 4,000,000 rounds of projectiles varying from 16-in. to 3-in. at Communist targets. Throughout 1952 a continuous siege was conducted of Wonsan on the Korean east coast.

Sixteen aircraft carriers had been in operation off the Korean coasts during the war: 13 U.S., 2 British and 1 Australian. Throughout 1952, sustained ground interdiction was maintained and coastal, rail and highway routes were cut repeatedly day and night. Land-based marine air squadrons attacked Communist troops, gun positions and transportation in the rear areas of North Korea.

Armistice Negotiations.—The Korean armistice negotiations first proposed by Jacob Malik, Soviet representative on the Security Council, in a radio address on June 23, 1951, actually got under way at Kaesong, Kor., on July 10, 1951. On July 26, 1951, the agenda had been agreed upon as follows: (1) adoption of agenda; (2) fixing a military demarcation line between both sides to establish a demilitarized zone as a basic condition

for a cessation of hostilities in Korea; (3) concrete arrangements for a cease-fire and an armistice, including the composition and authority and functions of a supervisory organization; (4) arrangements relating to prisoners of war; and (5) recommendations to the governments of the countries concerned both sides. After agreement on item 1, final agreement on item 2 was achieved on Nov. 27, 1951, when it was agreed that existing lines of contact between the two sides should be the demarcation line for an armistice agreement if it were signed within 30 days. (Since no agreement was reached, the demarcation line was to be based on the line of contact at the time of the signing of the armistice.) A four-kilometre demilitarized zone between the military forces was also agreed upon to minimize incidents which might arise to cause a resumption of hostilities.

On item 3 (arrangements for carrying out the cease-fire) United Nations command proposals contained the following principles: (1) cease-fire to be effective within 24 hours after the signing of the armistice; (2) a supervisory organization to be established to carry out the supervision of the terms of the armistice; (3) access to all of Korea by armistice commission and its observation teams; (4) withdrawal by each side from the territory controlled by the other; and (5) withdrawal of all armed forces from the demilitarized zone.

In addition, the U.N. command felt that during an armistice there should be some rotation and replenishment of troops, and that there should be restrictions on the construction of airfields—no military and a minimum of civilian airfields. The Communists rejected any restriction by a conference on a build-up in military strength, stating that this proposal constituted interference in the internal affairs of each side. They also demanded the right to build up their air potential during the armistice by constructing military airfields.

Disagreement arose when the Communists did not agree with U.N. negotiators who believed that the broadest possible access to all parts of Korea would be necessary for inspection in order to ensure against increases in the military strength. In the compromise agreed upon, inspection teams were to be stationed at five points of entry on each side and there were to be in addition ten mobile teams to investigate violations.

More controversy arose when the Communists opposed a provision for the rotation of troops. The compromise finally agreed to was that 35,000 men could be rotated monthly on each side.

Initially, the U.N. command had proposed that inspection be by joint teams from both sides, but the compromise proposal which was finally agreed to was an inspection by observers of neutral countries acceptable to both commands. When the Communists proposed the U.S.S.R. as a neutral nation the U.N. was unable to agree. Thus at the beginning of Nov. 1952, two points remained unagreed upon in regard to agenda items 3 and 4. These were airfield construction and the composition of the neutral supervisory organ.

Concurrently with discussions on item 3, subcommittees of the armistice delegations began discussions on item 4 in Dec. 1951 pertaining to prisoners of war. Prisoner of war lists which the United Nations command had from time to time submitted to the International Committee of the Red Cross totalled approximately 170,000 names. Of this list, approximately 37,500 persons had been erroneously classified as prisoners of war and were subsequently removed from the list, reclassified as civilian internees and released. When the Communists finally agreed to the exchange of the names of prisoners of war, the United Nations submitted a list containing approximately 132,000 names. When later investigation, an additional 11,000 persons were also reclassified as civilian internees and thus subject to release. The Communists were then informed that about 121,000 persons were under U.N. control in various prisoner of war camps in South Korea and on Koje-do.

The Communist list included approximately 11,500 U.N. and R.O.C. prisoners. This number was in conflict with the official announcement by the Communists that they had captured 65,000 prisoners in the first months of hostilities. The Communist explanation was that large numbers of these personnel had been re-educated and released at the front where many of them joined North Korean forces, and that they had been unable to obtain the names of these persons.

On Jan. 2, 1952, the United Nations presented its proposal for exchanging prisoners of war, interned civilians and displaced persons who provided for an "all for all" exchange on a basis of individual choice. It provided for the release of all prisoners of war (including soldiers who might have been incorporated into the armies of the detaining power) and permitted freedom of choice on the part of each individual to accept or reject repatriation. The Communists refused to consider the principle of voluntary repatriation and the inclusion of civilians in exchange. They asserted that the principle of voluntary repatriation was a violation of the Geneva convention. The U.N. command replied that it would consider any plan or proposal for settling the prisoner of war question with one exception: that it would not forcibly repatriate prisoners of war.

By Feb. 15 agreement on eight provisions of the draft referring to prisoners of war had been virtually achieved. By March the subcommittee had finally agreed to the following: (1) return of seriously sick and seriously injured prisoners of war; (2) a place of delivery of prisoners; (3) a committee for repatriation of prisoners; (4) organization and functions of the joint Red Cross team; (5) exchange of data on escaped and deceased prisoners of war and displaced civilians; (6) permission for Korean civilians and foreign civilians to return to their homes on either side of the demarcation line.

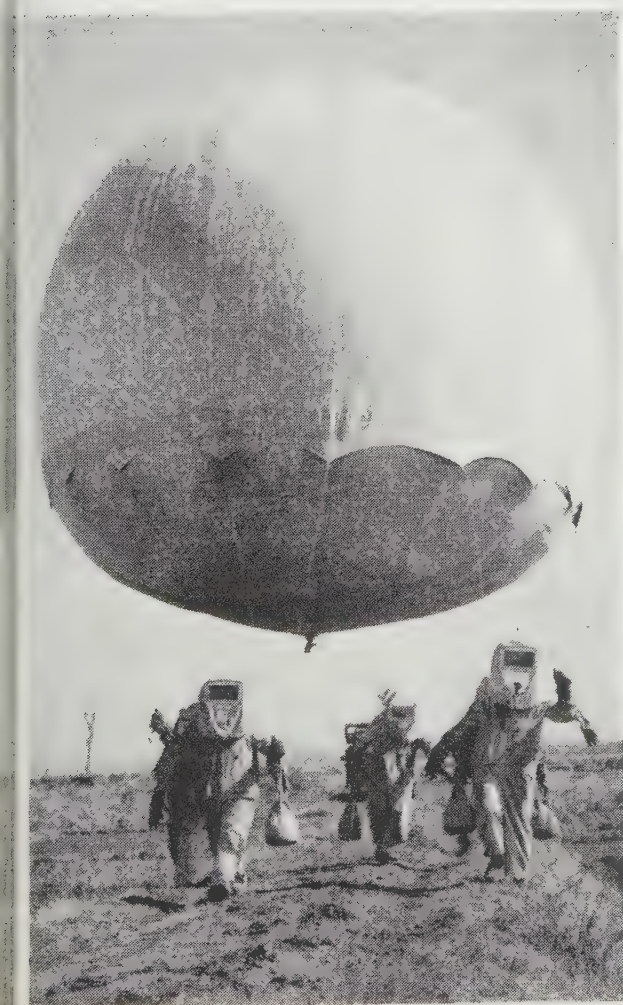
At the conclusion of executive sessions on April 2, which had been suggested by the U.N. negotiators in the hope of expediting a solution

Right: CREST OF "OLD BALDY," near Chorwon on the western front in Korea, lit up by artillery, rockets and mortars as U.N. and Communist forces trained their fire on the bitterly contested mountain. It was in U.N. hands by Sept. 21, 1952, the Communists having been driven off for the second time since midsummer

Centre, right: COMMUNIST PRISONERS of war who were identified by an escaped fellow inmate as being members of a "people's court" which sentenced him to death as an anti-Communist. They are shown being removed from compound 506 on Kojedo in June 1952

Below, left: ASBESTOS-CLAD U.S. troops shifting a helium-filled balloon marking the site of the stalemated Korean truce negotiations at Panmunjom in 1952

Below, right: PT BOAT firing a rocket against a Communist-held village on the east coast of North Korea in May 1952. The vessel was manned by South Korean naval personnel





"... AND DON'T ASK ME what it's all about, lads! ... all I know is nobody can win it, lose it or stop it! ..." This cartoon by Lichty of the Chicago Sun-Times Syndicate was published in 1952

the Communists suggested that the two sides begin at once the work of checking the lists of prisoners of war to be repatriated, and that the discussions be resumed after the check. The closed session of the staff officers of the two sides was resumed on April 19 when the Communists asked the U.N. for the totals of the prisoners of war and learned that the U.N. command anticipated that approximately 70,000 prisoners of war in its custody in the Republic of Korea would return of their own choice.

The screening program designed to determine the number of North Korean and Chinese prisoners of war who could not be returned to Communist control without the use of force was conducted in the following manner:

After a complete explanation as to the significance of the program and the interviews, unarmed United Nations command personnel stationed near the entrance to each compound called individually and interviewed privately each of the prisoners and civilian personnel. Each prisoner or civilian was asked first, "Would you like to return to China (or North Korea)?" If the answer was "yes" the prisoner was listed for repatriation without further question. Those who replied in the negative were asked additional questions to determine whether their opposition was nominal or whether they would violently oppose repatriation.

As a result of the screening of the prisoners of war and civilian internees, approximately 70,000 were listed for repatriation. No attempt was made to screen the prisoners of war in Communist-dominated camps which had refused to co-operate. However, since the Communists pressed for an early reply on a round number, U.N. figures of 70,000 included all prisoners of war who were interviewed and indicated they would not resist repatriation plus an estimate of the unscreened prisoners. When the complete screening job was finished, the results indicated that a total of approximately 83,000 (76,000 Koreans and 6,400 Chinese) could be repatriated without the use of force.

The Communists refused to recognize the results of the screening of the prisoners by the U.N. command and stated that it was unthinkable that their captured personnel did not wish to be returned. They cited article 118 of the Geneva convention as the reason for their position: "Prisoners of War shall be released and repatriated without delay after cessation of hostilities." The U.N. command, however, pointed out to the Communists that forcible repatriation was not consistent with the humanitarian basis of the Geneva convention and thus the spirit of the convention. In addition the U.N. command quoted article 6, which provided that no special agreement should adversely affect the situation of prisoners of war as defined by the convention or restrict their rights.

After a great deal of negotiation on the subject of forcible or non-forcible repatriation, the U.N. negotiators on April 28 offered the Communists a "package" proposal for solving the three issues still in dispute. They proposed that (1) there should be no forced repatriation of prisoners of war, (2) the United Nations command would not insist on prohibiting reconstruction and rehabilitation of airfields and (3) the U.N. command agreed to accept Poland and Czechoslovakia as members of the neutral nations supervisory commission if the Communists agreed to Sweden and Switzerland (thus withdrawing their demands for the inclusion of the U.S.S.R.). This proposal had to be accepted in whole and not in part, and as of Nov. 1, 1952, the proposal still remained

open. In the next few months of fruitless negotiations, the U.N. indicated to the Communists time and time again that while the issue of non-forcible repatriation was vital, it was prepared to accept any reasonable suggestion for resolving the deadlock.

The U.N. command negotiators had proposed on April 23 that joint Red Cross teams from both sides be admitted to prisoner of war camps on both sides, to verify the fact that none of the repatriates would forcibly resist return to the side from which they came. The Communists rejected the proposals. On Sept. 28 the U.N. put forward three alternative proposals to meet Communist objections to the principle of non-forcible repatriation and the allegations that the previous screening was unfair. In essence these proposals provided for different ways by which impartial screenings could be held by both sides to determine the desires of the various prisoners of war. When the Communists rejected these proposals, the U.N. command called a recess to the negotiations on Oct. 8.

As to item 5 of the agenda (recommendations to governments of countries concerned) the original Communist proposal was that within three months after the effective date of armistice the governments concerned would appoint five representatives from each side to hold a conference. The conference was to take up the withdrawal of all foreign forces from Korea, the peaceful settlement of the Korean question, and "other questions relating to the war in Korea."

In a counterproposal the U.N. recommended for consideration the withdrawal of non-Korean forces from Korea, a peaceful settlement of the Korean question, and other Korean questions relating to peace. The U.N. believed it was not proper for the armistice negotiators to recommend the size, nature and makeup of the suggested political conference. In an agreement reached on Feb. 19, the U.N. delegation accepted a revised Communist proposal recommending that within three months after the armistice a political conference of a higher level from both sides be held by representatives appointed respectively to settle, through negotiation, the questions of withdrawal of all foreign forces from Korea, the peaceful settlement of the Korean question, etc. In accepting the wording, Adm. C. Turner Joy pointed out that the term "foreign forces" meant non-Korean forces and that the U.N. negotiators did not construe the word "etc." to relate to matters outside Korea. Thus the troublesome matter of the fifth point in the agenda was settled with a minimum of difficulty.

Koje-do Incident.—After the Inchon landing and the breakthrough almost to the Manchurian border in Oct. 1950, a large part of the Korean Communist army had been destroyed or captured together with large numbers of Chinese. U.N. forces had captured more than 100,000 North Koreans and Chinese People's volunteers and had placed them in South Korea and on the islands off the tip of the peninsula, principally Kojedo. Included among the prisoners was a hard corps of Communists which at once began organizing the various prisoner compounds and making a great deal of trouble for their United Nations captors.

The International Committee of the Red Cross, in accordance with the provisions of the Geneva convention of 1949, had been allowed access to, and information about, all the prisoners of war taken by U.N. forces and the conditions under which these prisoners were living.

On Feb. 18 a riot of Korean civilian internees occurred in a compound on Kojedo. About 1,500 of the 5,000 inmates joined in the disturbance; 1 U.S. soldier and 69 inmates were killed. Another outbreak occurred on March 13 involving Korean Communist prisoners of war. By the time the riot had been quelled, 12 Communist prisoners of war were dead and 26 wounded.

A long period of disorders and demonstrations reached its climax on May 7 when prisoners seized Brig. Gen. Francis T. Dodd, the U.N. commander on Kojedo. The leaders in the compound then issued a set of demands which specified the conditions under which Dodd would be released. The acting commander of Kojedo, Brig. Gen. Charles F. Colson, acquiesced to the prisoner of war demands and issued a ransom note which the Communists construed as admitting the guilt of the United Nations command to certain Communist allegations of abuse and mistreatment. Gen. Mark W. Clark, who had succeeded Gen. Matthew B. Ridgway on May 12, immediately refuted the contents of the ransom note and pointed out the unprecedented and illegal method used to obtain the note.

Shortly after this incident, a new commander, Brig. Gen. Haydon Boatner, was appointed on Kojedo, and a large program was begun to segregate the prisoners and to place them in compounds considerably smaller than those in which they had originally been held. Other incidents occurred, but order was promptly restored by U.N. troops according to the Geneva convention.

Table II.—Report of U.S. Casualties in Korean War through Oct. 24, 1952

	Army	Navy	Marine corps	Air force	Total
Total casualties	97,225	1,679	23,193	1,298	123,395
Total deaths	17,711	350	2,938	472	21,471
Killed in action—total . . .	16,032	273	2,499	463	19,267
Wounded in action—total . .	69,721	1,273	20,218	48	91,260
Died of wounds	1,533	16	439	9	1,997
Other (current wounded, returned to duty, evacuated to the U.S., etc.)	68,188	1,257	19,779	39	89,263
Missing in action—total . . .	11,472	133	476	787	12,868
Died	146	61	0	0	207
Returned to military control .	1,325	4	20	41	1,390
Current captured	1,864	0	0	4	1,868
Current missing	8,137	68	456	742	9,403

Forces Involved in the War.—Communists.—Army: More than 1,000,000 men, largely Chinese Communist forces, were deployed in Korea in 1952. These men were organized into well-equipped divisions with supporting artillery, tanks and heavy equipment. Air: The Chinese air force consisted of more than 2,000 planes, mostly jets, based on Manchurian fields near the Yalu river. Navy: There was no Communist navy in Korean waters in 1952.

U.N. Forces.—On May 12, 1952, Gen. Mark W. Clark succeeded Gen. Matthew B. Ridgway, United States army, as commander in chief of the United Nations command.

Army: Under the leadership of Gen. James Van Fleet, the U.S. 8th army, organized into 18 combat divisions, with supporting units, tanks and artillery, faced the numerically superior Chinese Communist forces. The army of the Republic of Korea consisted of ten infantry divisions (including South Korean marines) which at full strength were approximately 10,000 men each, plus supply and labour units and rear area security forces. Total participation by Korean military forces was greater than 400,000 men. The following U.S. divisions had taken part in the Korean war: 1st cavalry, 2nd, 3rd, 7th, 24th, 25th, 40th, 45th and 1st marine divisions. Seven U.S. divisions were in Korea on Oct. 31, 1952. The 1st commonwealth division consisted of troops from England, Australia, Canada and New Zealand. This division and smaller units from a number of other U.N. countries had made a substantial contribution to the United Nations command army.

Navy: Naval units from the United States and ten other United Nations countries had participated in: (1) complete blockade of both coasts to deny the use of the sea routes to the Communists and (2) coastal bombardment and air strikes to destroy enemy supply lines.

Air force: U.S. air force, U.S. navy and U.S. marine corps aircraft of all types, as well as aircraft of seven other nations, had participated in the Korean war. Bombers, fighter bombers, fighters and reconnaissance aircraft, as well as cargo aircraft, had participated in the war. A figure indicative of the number of aircraft involved could be obtained from one day's operations with all far east aircraft mounting 1,525 sorties. This was the greatest number of sorties flown in one day in the Korean war up to Oct. 31, 1952. (See also ARMIES OF THE WORLD; AVIATION, MILITARY; PRISONERS OF WAR.) (C. V. C.; G. S. Bd.)

Kuwait: see ARABIA.

Labor, U.S. Department of: see GOVERNMENT DEPARTMENTS AND BUREAUS, U.S.

Labour: see AGRICULTURE; CHILD LABOUR; EMPLOYMENT; INTERNATIONAL LABOUR ORGANIZATION; LABOUR UNIONS; LAW; NATIONAL LABOR RELATIONS BOARD; STRIKES; UNITED STATES; WAGES AND HOURS. See also under various states.

Labour Party, Great Britain: see POLITICAL PARTIES, BRITISH; SOCIALISM.

Labour Unions. **United States.**—In the United States the year 1952 was one of high level employ-

ment, of wage increases which averaged slightly more than the increase in the cost of living, of continued improvement in various benefits and of struggles and tensions with respect to wage stabilization which resulted in several serious work stoppages and a total of man-days lost which it appeared might be higher than for any post-World War II year except 1946. Union membership increased only slightly despite the continued spread of "union shops" in various industries and plants.

Employment and Earnings.—As of Sept. 1952 nonagricultural employment had risen to 54,712,000 from 53,540,000 in January. Unemployment declined from 2,054,000 in January to 1,284,000 for the week ended Oct. 11. The unemployment which remained, of minimum proportions, was not concentrated in any particular industries. (See also EMPLOYMENT.)

Typically, the wage increases negotiated in 1952 were smaller than in 1951 and the proportion of renegotiations without wage increases was greater. For the manufacturing industries as a whole, straight-time average hourly earnings increased from \$1.58 in January to only \$1.62 in August. Wage settlements made in the later months of 1952, generally within a range of 4 to 12 cents per hour, portended an average increase for the full year of about 6 cents per hour, about half that of the previous year. However, the wage increases in 1952 were not substantially offset by increases in living costs. While there were slight fluctuations from month to month, the increase in the consumers' price index for the year as a whole would probably be restricted to about two points. There were, in addition, further increases in 1952 in the variety and amounts of pension, vacation and other benefits. (See also BUSINESS REVIEW.)

Wage Stabilization and Industrial Disputes.—The Wage Stabilization board, which in 1951 had been empowered to handle disputes as well as to establish stabilization policies, found itself in the centre of negotiations where its established policies did not lead to settlements within their terms. The outstanding disputes testing wage stabilization policies were in steel and coal. Other disputes of national concern occurred in the petroleum and telegraph industries and in several aircraft plants.

The steel dispute turned into a test of stabilization policies, brought to a head the question of the president's inherent power to seize an industry without congressional authorization if in his judgment this was necessary to protect the national safety, and again stimulated interest and controversy as to the handling of national emergency disputes. The secretary of defense had testified that the schedule of war production and the needs of the armed forces were such that the cessation of production of steel for any prolonged period of time would be catastrophic. Yet an estimated 20,000,000 tons of steel were lost during the 54-day stoppage before work was resumed at the steel plants. The president's power to seize industries under these conditions was restrained by the supreme court, but the emergency provisions of the Taft-Hartley act were not invoked because the president was of the opinion that he had already obtained more than the equivalent by other means. After further presidential intervention the dispute was finally settled on lower terms in

IDLE ENGINES in Chicago, Ill., during a strike by 5,000 railroad workers which halted service on the N.Y. Central system west of Buffalo, N.Y., March 9-12, 1952. Steam was kept up in the engines in hopes of a rapid end to the walkout



wages and other benefits than had been recommended by the Wage Stabilization board, and with provisions for escape from the union shop.

A stoppage of several days in the bituminous coal industry followed a decision of the Wage Stabilization board that the \$1.90 per day increase negotiated between the United Mine Workers and the operators exceeded the increase permitted by wage stabilization policies. An increase of \$1.50 per day was allowed by the board. The provision in the contract to raise the royalty rate from 30 cents to 40 cents a ton for the welfare and retirement fund was not changed, as approval for this increase was not required. The men returned to work after the president agreed to submit the case to the director of economic stabilization for review. The agreement between the operators and the union and the general steadiness of prices in general seemed to presage a disposition to permit collective bargaining to take its course. (See also WAGE STABILIZATION BOARD.)

Union Membership; the Union Shop Issue.—Very little, if any, gains were made in total union membership in 1952. In the first six months of 1952 no-union ballots in elections conducted by the National Labor Relations board won in 32% of the cases compared with 28% during the previous year. However, some increases in membership continued to come via the route of representation elections. Some increase in American Federation of Labor membership was accounted for by the transfer of the hosiery workers union and sections of textile workers and insurance employees from the Congress of Industrial Organizations. Organization drives among textile, department store and white collar workers had not met with much success. On the whole, the C.I.O. possibly suffered some losses in membership.

The year witnessed the further spread of the union shop in various industries and plants. The rejection by representatives of the steel industry of the union shop recommendation of the Wage Stabilization board prolonged the steel strike until a compromise was reached. The terms finally agreed upon permitted new employees to withdraw between the 16th and 30th day of employment; union members could drop their membership during the last 15 days of the new contract if they so desired; employees who were not members were not required to join the union.

In the railroad industry, the recommendation of a presidential emergency board that union-shop contracts be granted was accepted by the employer association representing eastern railroads, but the western and southern railroad management groups refused to agree to a full union shop. Modified union shop proposals based on the General Motors or the new steel versions were not accepted.

Organized Labour and the Presidential Campaign.—Both the A.F. of L. and the C.I.O., their political action auxiliaries, and many national unions endorsed the candidate of the Democratic party and worked on his behalf. The candidates of both major parties addressed the A.F. of L. convention which met during the period of the presidential campaign. The results of the campaign were not conspicuously successful. Not only was the Republican candidate victorious by a vote so large and so distributed as to compel the conclusion that large numbers of union members and their families had voted for him, but also more members of the house of representatives and senate were returned than defeated among those who had poor ratings in the tabulations of voting records made by unions. The elections were generally regarded as a setback to the claim that union members vote as a unit and that they follow union leadership in a political campaign.

At the year end the most practical question for unions growing out of the election was the fate of the Taft-Hartley act. (G. PK.)

Philip Murray, president of the Congress of Industrial Organizations, and William Green, president of the American Federation of Labor, both died late in 1952. Walter P. Reuther, head of the C.I.O.'s United Automobile Workers, was elected to succeed Murray, and George Meany, formerly secretary-treasurer of the A.F. of L., was elevated to the presidency of that organization. (X.)

Canada.—According to the 41st annual survey of the federal department of labour, there were 1,146,121 trade unionists in Canada on Jan. 1, 1952 (1,028,521 on Jan. 1, 1951); more Canadian workers were members of unions than at any other time. The membership was divided as follows: Trades and Labour congress, 522,965; Canadian Congress of Labour, 330,778; Canadian and Catholic Confederation of Labour, 89,013; International Railroad brotherhoods, 41,385. The remainder were international unions not affiliated with any Canadian congress, and national and regional unions not so affiliated.

There was remarkable unanimity among the big four labour groups in their presentations to the federal cabinet: for instance, they all demanded some form of restriction on immigration, reimposition of price controls, lower taxes, increased unemployment insurance benefits, higher old-age pensions and lower qualifying age and fewer importations of foreign goods.

For the first time in the history of Canadian combines legislation, members of a trade union were named as a combine: 13 members of a Winnipeg bakery union were found parties to illegal measures to control Winnipeg bread prices. In British Columbia a court fined a union official and 15 union members for grave contempt and failure to recognize union responsibility: the International Woodworkers of America had refused to obey a court injunction to stop picketing a boat being loaded with lumber. A board of arbitration awarded the Canadian General Electric company \$9,208 damages against the United Electrical workers union for loss incurred by the company during a wild-cat strike. (C. Cv.)

International Movement.—The total membership of the I.C.F.T.U. (International Confederation of Free Trade Unions) in 1952 was 53,000,000 in 70 countries, an increase of about 1,000,000 over the previous year.

The regional organization of the I.C.F.T.U. was further developed; the goal of £250,000 for which an appeal had been made in 1951 to carry out this work was reached early in 1952. In addition to assisting trade unions to become securely established, the regional fund provided the means for the setting up in Calcutta of an I.C.F.T.U. residential college for the training of trade union officers; this was opened in Sept. 1952. Preparations were also made for the establishment of training schools in Singapore, Accra (Gold Coast) and in Abidjan (French West Africa), and there were plans to commence preparations for training schemes in the Arabic-speaking countries of the middle east. The European regional organization gave special assistance to the non-Communist Italian and French trade union movements. In Feb. 1952, it convened a European Trade Union Conference on Housing which was attended by more than 80 delegates, observers and housing experts from international organizations; on the recommendation of the conference a permanent committee on housing was established.

The I.C.F.T.U. continued its work in defense of trade union rights; it submitted detailed evidence of the violation of trade union freedoms in Venezuela and Argentina to the I.L.O. (International Labour organization) and the Economic and Social council of the United Nations and supplemented previous evidence given to the council on the prevention of free trade unionism by the government of the U.S.S.R. After sending an observer to Tunisia, the I.C.F.T.U. vigorously interceded with the French government in support of the demands of the Gen-

al Confederation of Labour of Tunisia.

The first meeting of the I.C.F.T.U. general council was held in Berlin, Ger., July 1-5, 1952. The American Federation of Labour refused to send delegates to this meeting in protest against what it regarded as unsatisfactory aspects of the I.C.F.T.U. From the foundation of the I.C.F.T.U. the A.F. of L. desired it to pursue a more militantly anti-Communist policy than other trade union centres thought wise. Dissatisfaction came to a head when Sir Vincent Tewson, secretary of the British Trades Union congress, accepted nomination and was elected president of the I.C.F.T.U., following the resignation of Paul Robeson in 1951. The acceptance of this post by Sir Vincent Tewson was regarded by the A.F. of L. as a violation of an alleged gentlemen's agreement that neither the A.F. of L. nor the T.U.C. should hold the senior office in the I.C.F.T.U. Immediately prior to the meeting of the I.C.F.T.U. general council Sir Vincent Tewson and J. H. Oldenbroek, I.C.F.T.U. secretary-general, visited the U.S. to confer with the leaders of the A.F. of L. and attempted to resolve the difficulties.

Great Britain.—After a slight decline in each of the two previous years, the affiliated membership of the British Trades Union congress (T.U.C.) for the first time exceeded 8,000,000, rising from 7,827,000 in 1951 to 8,020,000 in 1952.

R. A. Butler, the first Conservative chancellor of the exchequer after World War II, continued the practise of his Labour predecessors and received a delegation from the T.U.C. to air their views on fiscal and economic problems. The suggestions of the T.U.C. were that food subsidies should be increased; charges for national health service prescriptions should be withdrawn; the standard rate of income tax and the tax on unearned incomes should be increased, while the lower rates of tax should be reduced; the profits tax should be increased; a statutory limitation of dividends introduced; and a tax on capital gains imposed. In the event the chancellor adopted only one of these suggestions, they preferred an alteration in the number rates of tax. In a statement approved by the general council on March 26, the T.U.C. sharply criticized the budget and the assumptions on which they claimed it rested—notably that there would be some increase in unemployment and a rise in prices—and issued a warning that in the circumstances the trade unions would be compelled to press for higher wages. Following publication of this statement, the chancellor again met representatives of the T.U.C. and suggested that wage increases should be linked to productivity. As a result of further discussions with the chancellor and the obvious seriousness of the economic situation, the general council issued a lengthy report to the congress, which after reviewing Britain's economic difficulties concluded that substantial wage increases would be found to raise costs in the export trades but refused to countenance any interference with traditional methods of wage determination.

The economic policy of the general council was put to the annual congress, held in September, in the form of its report, supplemented by a resolution moved by the Union of Shop Distributive and Allied Workers and supported by a number of other large unions; this resolution, while criticizing severely the government's economic policy, was carried together with the report of the general council by votes of 7,771,000 to 39,000 and 6,856,000 to 504,000, respectively, and was clearly understood to commit the trade union movement to a policy of moderation in wage claims.

Another triumph for the general council was in the heavy defeat by the congress of attempts to reject its support for the armament program. Two resolutions which had been supported by Communist delegates were defeated by 6,941,000 to 887,000 and 6,075,000 to 1,801,000. An amendment to the sec-

ond resolution, which was generally thought to state the policy associated with the name of Aneurin Bevan, was also heavily defeated by 5,801,000 to 1,272,000; thereafter the general council's report in favour of rearmament to the maximum extent consistent with economic stability, was carried by 5,597,000 to 1,450,000.

An event of outstanding importance during 1952 was the dismissal of an employee after 31 years' service by D. C. Thompson, Ltd., because it had come to their notice that he was a member of a trade union. This was followed by a strike of 74 fellow employees who were called out by the National Society of Operative Printers and Assistants to which they also secretly belonged. The strike was supported by a nation-wide boycott of Thompson's by other trade unions, the members of which refused to handle supplies of paper destined for the firm's printing offices. As a result D. C. Thompson, Ltd., sought an injunction against Arthur Deakin, general secretary of the Transport and General Workers union and several other trade union officials, on the grounds that they had procured a breach of contract on the part of the Bowater Paper Corporation, Ltd., who were principal suppliers of paper to D. C. Thompson, Ltd. Justice Upjohn dismissed the motion because the facts did not, in his judgment, give rise to an intention on the part of the trade union leaders to procure directly a breach of contract; they were entitled under section 3 of the Trade Disputes act, 1906, to act as they had done without committing a tort.

In the meantime the minister of labour had instituted a court of inquiry into the dispute, his attention having been previously drawn by the T.U.C. to the I.L.O. convention 98, which had been ratified by the British government. This convention protects workers from being discriminated against by employers because they want to join a union, already belong to a union or refuse to relinquish membership of a union. The report of the court of inquiry, published on July 11, viewed with misgiving the attitude of D. C. Thompson, Ltd., and called upon them to reconsider their policy of refusing to employ unionists; at the same time it suggested to the trade unions that they would be well advised to consider the wisdom of disrupting industry and bringing hardship on the public by pressing their demands.

During the year the Anglo-American Council on Productivity, on which the trade unions of both Great Britain and the United States had been represented together with management from both countries, was wound up. In all, 47 teams and 19 specialist groups had been sent to the United States during the lifetime of the council, and by the end of the year most of them had published their reports. (*See also* LAW; NATIONAL LABOR RELATIONS BOARD; STRIKES; WAGES AND HOURS.) (B. C. R.)

Labrador: *see* NEWFOUNDLAND AND LABRADOR.

Labuan: *see* BRITISH BORNEO.

Lacrosse. Rensselaer Polytechnic institute and the University of Virginia were named co-champions of the National Intercollegiate Lacrosse association in 1952, and shared the Wingate trophy, symbolic of national honours. Rensselaer, playing mostly northern teams, swept through ten games unbeaten, concluding its campaign with a 23-1 victory over Williams college. Virginia numbered among its victims some of the strongest tens in the game including Maryland, Navy, Johns Hopkins and Princeton, although the Cavaliers lost to the Mount Washington Lacrosse club of Baltimore, Md., which again was the United States open title winner. Mount Washington Lacrosse club closed its regular season unbeaten by turning back a strong Army unit, 14-8, for its ninth triumph.

The annual north-south all-star contest was held in New York city for the first time. Played at the Polo Grounds for the

benefit of the Damon Runyon Cancer fund, the contest drew more than 5,000 fans and resulted in a 15-7 decision for the south. Virginia's Dick Godine and Gordon Jones, with four goals apiece, starred for the winners and helped give the south its first victory in three years in the series. Joseph Austin, Army inside home, tallied three times to lead the north in scoring.

Philadelphia again retained its title in women's lacrosse, both its first and second teams going undefeated in the three-day national championship tourney at Weston, Mass. Philadelphia placed eight of its stars on the all-United States first team picked at the competition, which closed on June 1 when the U.S. first 12 routed the U.S. reserves, 12-2. Lois Linton of Philadelphia and Ann Delano of Boston each tallied three goals.

(T. V. H.)

Lamb: see MEAT.

Land Reform: see AGRICULTURE.

Laos: see FRENCH UNION; INDOCHINA.

Lard: see VEGETABLE OILS AND ANIMAL FATS.

Latin America: see ARGENTINA; BOLIVIA; BRAZIL; BRITISH GUIANA; BRITISH HONDURAS; CHILE; COLOMBIA; COSTA RICA; ECUADOR; FRENCH UNION; GUATEMALA; HONDURAS; MEXICO; NICARAGUA; PANAMÁ; PARAGUAY; PERU; SALVADOR, EL; SURINAM; URUGUAY; VENEZUELA.

Latin-American Literature.

Literary creation in Mexico during 1952 reflected a situation which appeared to be prevalent throughout Latin America and perhaps the entire world. On the one hand there was a strong nationalist trend expressed in a torrent of essays and psycho-sociological analyses; while on the other hand the lyrical evasiveness, romanticism and fantasy which pervaded numerous poems and short stories constituted an opposite trend, even a reaction to this nationalist spirit.

The first 10 volumes of a projected 100-volume series entitled "Cultura Mexicana," sponsored by the National University of Mexico, Mexico City, appeared. Included were such excellent studies as *El folklore de México* by Angel María Garibay, *Estudio sobre México* by Jesús Silva Herzog, *Perspectivas de la industrialización en México* by Manuel German Parra and *Panorama fiscal de México* by Hugo Margain. The National Financiera began its projected 40-volume series entitled "La Estructura Social y Cultural de México," with José E. Iturriga's book bearing the same title as the series, and *La pesca* by Alejandro Quesada. Art and archaeological studies reached full maturity with *Arquitectura prehispánica* by Ignacio Marquina Barredo; *Folklore de San Pedro Piedra Gorda* by Vicente T. Mendoza and Virginia R. de Mendoza; and the third volume of a "History of Mexican Art," Justino Fernández' *Arte moderno de México*, which was as erudite and definitive as the two preceding volumes: Salvador Toscano's *Arte precolombino de México y la América Central* and Manuel Toussaint's *Arte colonial en México*. An extraordinary series "México y lo mexicano" was edited by the gifted philosopher Leopoldo Zea, who added two volumes a month to the series. From the six titles published by late 1952 (*La x en la frente* by Alfonso Reyes, *Conciencia y posibilidad del mexicano* by Leopoldo Zea, *Mito y magia del mexicano* by Jorge Carrión, *Análisis del ser del mexicano* by Emilio Uranga, *Cornucopia de México* by José Morena Villa and *El amor y la amistad en el mexicano* by Salvador Reyes Nevárez) the amplitude and earnestness of the plan was evident: the viewpoints were varied but the keenness and sincerity of analysis were the same—all were engaged in the same passionate quest of Mexican quintessences.

One might expect that creative activity would be imbued with a similar spirit, the spirit of the realistic novel of the Mexican Revolution. This was not so. The most satisfactory work ap-

peared to be, to a large extent, a reaction against realism. Juan José Arreola in *Confabulario*, Francisco Tario in *Tapioca* and B. Jiménez Montellano in *El arca del ángel*, to mention a few outstanding examples, were altogether original and, in contrast to the "national" spirit displayed by the essayists, quite "international."

Still, the exceptions to this generalization seemed to be nearly as brilliant: Jorge Ferretis' *El coronel que asesinó un palomo*, for instance, and *El diosero*, Francisco Rojas González' powerful collection of short stories, were all Mexican tales full of human warmth and the salt of the earth. Indeed, the outstanding novel of the year, *El Cristo de espaldas*, by the Colombian diplomat and journalist Eduardo Caballero Calderón, and two prize-winning works, the novel *Coirón* by Daniel Belmar (Atenea award, Chile, 1952) and the short story collection *La docena del fraile o trece cuentos de mi abuela* by the journalist Eudocio Carrera Vergara (Ricardo Palma award, Peru, 1952) belonged to the realistic category. More pronouncedly tendentious, situated on a plane of sharp human struggle, were such powerful novels as *Lluvia y fuego*, a militant exposé of the ruthless tactics of oil companies, by the United States writer Thomas Bledsoe; and *La prisión*, which undertook to expose the existing Peruvian regime and its persecution of the Apra party, of which the author Gustavo Valcárcel was a prominent leader in exile.

The year's poetry output was comparatively feeble, with the notable exception of *Signo*, by the Mexican Honorato Ignacio Magaloni, and *Aventura*, by the Chilean Juan Guzmán Cruchag. Two other mature collections, both from Mexico, were José Gorostiza's *Muerte sin fin*, and Vicente Magdaleno's *Sueños como obsidiana*. The Spanish translation of Brazil's greatest lyricist, Jorge de Lima, was an event of primary importance, the versions by Florindo Villa Álvarez, C. R. Arechavaleta and J. Torres Oliveros proving to be superb. However, the really epoch-making achievement was Alfonso Reyes's version of the *Iliad* (part I), a masterly job by Mexico's prominent literary scholar. Reyes's collected poems were published simultaneously under the title *Obra poética* in a series which also included the posthumous poems of the great Enrique González Martínez. Dynamic signs of poetical vitality were seen in the newly founded poetry magazine *Poesía de América* (editors: Honorato Ignacio Magaloni and Gustavo Valcárcel), published in Mexico City, which included the work of poets from Latin America at large and devoted a section to Spanish poets in exile.

As hinted above, first-rate criticism and essays abounded. In addition to the Mexican series already mentioned, there were some extraordinary critical studies: of the Brazilian Machado de Assis by José Maria Bello; of the Peruvian César Vallejo by Elsa Villanueva Teixeira; and of the Mexicans Manuel José Othón and Ramón López Velarde by Jesús Zavala and Elena Molina Ortega, respectively. Two United States scholars filled important gaps in Latin-American studies: E. Neale-Silva with his perceptive analysis of José Eustasio Rivera's poetry, and Sonja Karsen with her detailed and authoritative dissertation on Guillermo Valencia. Very distinguished studies of *Las Sonatas de Ramón del Valle-Inclán* by Alonso Zamora Vicente, *Estudio del Discurso en loor de la poesía* by Luis Jaime Cisneros (Manuel González Prada award, Peru, 1952), and *Conceptos e imágenes en pensadores de lengua española* by Vera Yamuni Tabush, were imbued with a semantic-philosophical approach. In the field of folklore and ethnography, sundry revealing studies shed light upon many recondite corners of America. In addition to Angel María Garibay's *El folklore de México*, mentioned above, there were *Folklore argentino: Cantares, leyendas y tradiciones de la tierra adentro* by Fermín Alfredo Anzolaz; *Romancero peruano* by Emilia Romero; *Folklore, folkvise y folkway indígena* (Peru) by Julio Baudouin; *Los descendientes del imperio incluído*

Bolivia) by Fernando Iturralde; and the two-volume *Obras* of the young Argentine poet and scholar Eduardo Jorge Bosco, which contained articles on the Gaucho tradition, folkways and literary expression. Paraguay was the subject of a most illuminating treatise by Silvio Maldonado. Covering wider ground were the study of the Argentine novel (*La novela argentina*) by Germán García, of the literature of Spain (*La literatura española*) by the Mexican scholar Julio Torri, and of the Venezuelan short story (*Cuentos y cuentistas*) by the gifted practitioner José Fabbiani Ruiz. Still wider in scope, dealing with the hemisphere at large, were some of the most rewarding books of 1952: *Entre la libertad y el miedo*, simultaneously published in English under the title *The State of Latin America*, by the Colombian diplomat and scholar Germán Arciniegas; *La filosofía como compromiso* by the Mexican philosopher Leopoldo Zea, mentioned above; and *Dependencia e independencia en la historia hispanoamericana* by Mariano Picón-Salas. For brilliance and sheer stylistic virtuosity, none surpassed *Otras inquisiciones* by the Argentine, Jorge Luis Borges. (A. FLO.)

Latter Day Saints: see MORMONS.

Latvia. From Nov. 18, 1918, to Aug. 5, 1940, when it was annexed by the U.S.S.R., Latvia, one of the Baltic states of northeastern Europe, was an independent republic. Area: 25,395 sq.mi. Pop.: (1939 est.) 1,994,500; (1950 est.) 1,100,000. Language: Latvian and Russian. Religion: Lutheran, Roman Catholic and Greek Orthodox. Chief towns (pop., 1935 census): Riga (cap., 1939 est., 393,211); Liepaja (57,098); Daugavpils (45,160). Chairmen of the presidium of the supreme soviet in 1952: August M. Kirchensteins and (from April 11) Karlis M. Ozolins; chairman of the council of ministers, Vilis Lācis.

History.—At the meeting of the supreme soviet of the republic of Riga on April 10–11, 1952, Ozolins was elected chairman of the presidium in place of 80-year-old Kirchensteins, who wished to retire. The new chairman, who was born in 1905, joined the Communist party in 1926, twice receiving sentences for subversive activities; before his election he was editor of *Jaunā gaisma*, the principal organ of the party.

By a decree of the supreme soviet of the U.S.S.R., promulgated on April 8, Latvia's 58 *rayony* or districts were divided among three *oblasti* or provinces with capitals at Riga, Daugavpils and Liepaja. The four historic provinces of Vidzeme, Latgale, Zemgale and Kurzeme ceased to exist.

A report published in January by Janis Kalnberzins, first secretary of the Latvian Communist party, disclosed that the fourth five-year plan, 1946–50, had not been fulfilled with regard to several important industrial products; i.e., brick production reached only 71.6% of the plan and that of meat only 64%. The fifth five-year plan, 1951–55, provided for the enlargement of the port and of the shipyards of Riga as well as for the erection of a thermoelectric power station near the capital. By 1955 the output of electrical energy in the republic was to be double that of 1950.

As a result of the amalgamation of smaller *kolkhozy* into bigger ones, between March 1950 and March 1952 their number was reduced from 4,115 to 1,513, embracing 229,000 or 98.4% of the former farms; 1,092 chairmen of the *kolkhozy* were Communists, but only 915 collective farms had a primary party organization. The *kolkhozy* were served by 105 machine and tractor stations.

By Sept. 1952 the Communist party had 50,000 members; the Union of Communist Youth, according to Elmars Bemanis, its secretary-general, comprised 98,800 members. Kalnberzins averred that inclinations toward the reservation of private prop-

erty in the *kolkhozy* were being encouraged through the anti-soviet activities of "bourgeois nationalists."

Lācis, the premier, who was also a prolific writer of fiction, was criticized in *Cina* in Nov. 1951 for "leftist deviations" discovered in his latest novel, *To Distant Shores*; but on Feb. 25 he was vindicated by the Moscow *Pravda*—not he but his critics exhibited "leftist deviations." G. G. Turs, the soviet-appointed archbishop of the Latvian Lutheran Church, and Mgr. Peter Strods, described by the Communist press as Roman Catholic "deputy metropolitan" of Riga, took part in May in a "defense of peace" conference called at Zagorsk, near Moscow. (See also ESTONIA; LITHUANIA.)

Education.—Schools (1950): elementary 1,598, pupils 232,000; secondary 96, pupils 30,000; technical 66, pupils 20,000; institutions of higher education 10, students 12,500, including Riga university, students 5,500.

Finance.—Budget (1952 est.): revenue 1,453,257,000 roubles; expenditure 1,404,786,000 roubles. (K. SM.)

Law. Fear and uncertainty, engendered chiefly by the Communist drive against the free world, were reflected during 1952 both in federal legislation and in supreme court decisions. The 82nd congress continued the president's emergency war powers, approved a peace treaty with Japan and security treaties with groups of other non-Communist nations, voted appropriations to carry on the Mutual Security program for military, economic and technical assistance to certain friendly nations, enacted a bill of rights granting G.I. benefits to Korean war veterans and approved a new constitution for Puerto Rico. Congress also revised and codified laws relating to immigration, naturalization and nationality, including new provisions designed to tighten the safeguards against subversive elements.

The supreme court lacked a confident majority of justices in cases involving questions of administrative and executive powers. This was apparent in an increasing tendency of the justices toward the literal application of statutes involving public policy, such as laws dealing with aliens and civil rights. There had to be a majority, of course, in reaching a definite decision, but sometimes the majority disagreed sharply as to their reasons for concurring. An extreme instance of this was the steel industry seizure case, the report of which covered 133 pages and presented six individual opinions rendered by the majority of the court and one dissenting opinion in which three justices joined.

Only the more important legal developments of general interest are reported in this article.

Aliens and Citizenship.—The supreme court adhered to a strict construction of statutes authorizing the deportation of aliens resident in the United States. Thus three aliens, who had entered the United States in their youth and stayed for more than 30 years without applying for naturalization, were held to be deportable under the anti-Communist provisions of the Alien Registration act of 1940. Congress had the power to authorize the deportation of legally resident aliens because of membership in the Communist party, even though such membership had terminated before the passage of the act. This provision was not an *ex post facto* law prohibited by the constitution, nor did it violate due process, freedom of speech or freedom of assembly. The courts were not responsible for national policy in respect to the deportation of aliens, which is almost exclusively the province of the political branches of government and "largely immune from judicial inquiry or interference" (*Harisiades v. Shaughnessy*, 342 U.S. 580).

The high court, by a vote of five to four, also approved the action of the attorney general in locking up four aliens, charged with Communist party membership, and holding them without bail pending the determination of their deportability under

the Internal Security act. Such detention was not a violation of the 8th amendment's prohibition against requiring excessive bail (*Carlson v. Landon*, 342 U.S. 524).

In another five-to-four decision the supreme court upheld a death sentence for treason against an American-born citizen of Japanese descent. The fact that he was also a Japanese citizen because of his Japanese parentage was no defense (*Kawakita v. U.S.*, 343 U.S. 717).

A German citizen, however, who had been interned in the United States under the Alien Enemy act and had been ordered removed to Germany by the attorney general, was entitled to release from custody, the supreme court ruled, since the war had been terminated by joint resolution of congress (*Jaegler v. Carusi*, 342 U.S. 347).

While the justices of the supreme court were debating the rights of aliens residing in the United States, the president was struggling with congress over the provisions of a bill revising and codifying all federal laws on immigration, nationality and naturalization. A final draft of the measure, known as the Immigration and Nationality act of 1952, was finally passed over the president's veto. The new law retained the quota system under which the number of immigrants to be admitted to the U.S. annually from any foreign country was limited to $\frac{1}{2}$ of 1% of the number of persons of that national origin already living in the U.S. as shown in the 1920 census. The annual immigration ceiling was set at 154,657, an increase of 308 over the previous limit. Other provisions eliminated race and sex barriers; introduced a system of selective immigration by giving a special preference to skilled aliens urgently needed in the country; provided a more thorough screening of aliens, especially of persons who might be security risks and subversives; broadened the ground for exclusion and deportation of criminal aliens; and let down the bars for the entry of reformed totalitarians, such as former Communists who had turned anti-Communist.

Antitrust.—A trust-breaking action brought by the attorney general against the Oregon State Medical society, eight county medical societies and eight doctors who were officers of a nonprofit corporation called the Oregon Physicians service was unsuccessful in the supreme court. The suit charged that the defendants had conspired to monopolize the business of providing prepaid medical care in Oregon and had prevented doctors generally from working for private health associations. It appeared that in 1936 five private associations were selling prepaid medical certificates entitling the purchaser to hospital and medical care.

At first the doctors' organizations fought this "contract practice" tooth and nail, but five years later the medical profession was convinced that its best protection was to operate a contract practice controlled by its own organizations. The court held that there was no clear proof of a violation of the antitrust laws (*Oregon v. U.S.*, 343 U.S. 326).

Other antitrust decisions followed familiar patterns. The justices all agreed with a lower court decision that exclusive agreements whereby 2,965 automobile service stations had pledged themselves to buy their supplies only from the Richfield Oil corporation violated the Clayton Antitrust act. The court said that this case was substantially the same as the Standard Oil case reported in 337 U.S. 293 (*Richfield Oil Corp. v. U.S.*, 343 U.S. 922). The court also reiterated its former ruling that price control through cross-licensing of patents is a violation of the Sherman Antitrust act. Two formerly competing companies, who had been engaged in litigation over patents, settled their dispute by organizing a holding company and assigning the patents to it. The court held, following the U.S. Gypsum case, that the price fixing through this holding company device was

an illegal restraint of trade (*U.S. v. New Wrinkle*, 342 U.S. 371).

Civil Rights.—The supreme court broadened the free speech and free press guaranties of the 1st and 14th amendments to include freedom of expression by motion pictures, overruling an earlier decision in *Mutual Film Corp. v. Industrial Comm.*, 236 U.S. 230.

A provision of New York's Education law, requiring all motion pictures to be submitted for licensing by a state board, was void as a prior restraint on freedom of speech and of the press because it authorized denial of a licence if the censors found the film to be "obscene, immoral, or sacrilegious." The court therefore revoked the ban of the New York board of regents on the motion picture entitled *The Miracle*, which the board had found to be "sacrilegious because of the scene in which a demented woman is seduced by a stranger whom she thinks is St. Joseph, and of the birth of a child which she considers miraculous." A state cannot prohibit the showing of a motion picture on the basis of a censor's conclusion that it is "sacrilegious" (*Burstyn, Inc. v. Wilson*, 343 U.S. 495).

The high court also dealt with another section of the controversial New York Education law authorizing the public schools of the state to release pupils from school attendance for one hour a week to attend religious classes, provided the religious instruction is held outside of the schools. This "released time" program was distinguished by a majority of six justices from the situation in the McCollum case which the court had found to be a violation of the constitutional guaranty of separation of church and state. In that case the school classrooms were turned over for religious instruction. But the New York system "involved neither religious instruction in the public schools nor the expenditure of public funds and since no one is forced to attend religious centers, there is no conflict with the First Amendment." To the charge that the program was coercive, the majority said "no one is forced to go to the religious classrooms and no religious exercise or instruction is brought to the classrooms of the public schools" (*Zorach v. Clauson*, 343 U.S. 306).

Still another section of the New York Education law, known as the Feinberg law, directing the state board of regents to compile a list of subversive organizations, and making membership in groups so listed grounds for dismissal of a teacher unless his loyalty is proved, was upheld by the supreme court. The eight taxpayers who attacked this statute as a violation of free speech and assembly were told that it was the duty of school officials to screen teachers "as to their fitness to maintain the integrity of the schools. In this process it is proper to examine the associates, past and present, of the person involved. There is nothing unconstitutional in making membership in organizations listed as subversive a ground for dismissal" (*Adler v. Board of Education*, 342 U.S. 485).

In a five-to-four decision the high court upheld the Illinois group libel statute enacted in 1949, which forbids publication of any "lithograph, moving picture, play, drama or sketch . . . which portrays depravity, criminality, unchastity or lack of virtue of a class of citizens of any race, color, creed or religion," or which exposes them to "contempt, derision, or obloquy or is productive of breach of the peace." The court sustained the conviction of the head of the White Circle League of America for violating this law by circulating a petition to white people to join in a campaign against Negroes, referring to the "rapes, robberies, knives, guns and marijuana" of people of the black race. The majority of the justices held that the statute penalizing such antirace libel did not interfere with freedom of speech or the press (*Beauharnais v. Illinois*, 343 U.S. 250).

The supreme court also denied relief to citizens who objected to the broadcasting of radio programs on streetcars and buses in the District of Columbia. It ruled that a passenger on a public vehicle has no right of privacy substantially equal to the privacy which he is entitled to in his own home. Justice William O. Douglas, dissenting, objected to making the streetcar audience a captive one. "When we force people to listen to another's ideas, we give the propagandist a powerful weapon. Once privacy is invaded, privacy is gone. Once a man is forced to submit to one type of radio program, he can be forced to submit to another" (*Public Utilities Comm. v. Pollack*, 343 U.S. 151).

The supreme court also refused to interfere with a New Jersey law requiring daily reading of five verses of the Old Testament in public schools. The court dodged the religious issue by telling the two taxpayers, who attacked the law, that they had suffered no particular injury since there was no showing that Bible reading increased taxes (*Doremus v. Board of Education*, 342 U.S. 429).

Criminal Law.—The decisions of the supreme court in criminal cases were more notable for their novelty than for their legal importance. The forcible use of a stomach pump to get evidence of narcotics law violations from a suspect who was handcuffed and strapped to an operating table profoundly shocked the justices of the supreme court. The suspect swallowed two capsules containing morphine when three deputy sheriffs broke into the room where he and his wife had been sleeping. The officers seized him and rushed him to a hospital where the pills were recovered and later used as evidence in his conviction for the illegal possession of morphine. This was a clear violation of due process, the justices ruled (*Rochin v. California*, 342 U.S. 165).

On the other hand, the court in a five-to-four decision approved the use of a Dick Tracyish device by federal officers to record a conversation with a Chinese laundryman, named On Lee, suspected of narcotics law violation. Chin Poy, an undercover agent, who was an old acquaintance and former employee of On Lee, stopped in at the laundry to have a chat with his former boss. He had a radio transmitter concealed in his inside overcoat pocket with a small antenna running along his arm. Unknown to On Lee, another federal agent was stationed outside the building with a receiving set by which the conversation was recorded. The evidence thus obtained was used at the trial. Five of the justices held that this was not a violation of the constitutional immunity of the accused from unreasonable searches and seizures nor was it a violation of the federal Communications act (*Lee v. U.S.*, 343 U.S. 747).

The complaint of another convict, that while living in Chicago he had been seized by officers from the state of Michigan and handcuffed, blackjacked and taken to Michigan, where he was convicted of murder and sentenced for life, was rejected by the supreme court. The fact that he had been abducted from one state to another did not invalidate his conviction in the latter state under the due process clause. "This court has never departed from the rule announced in *Ker v. Illinois*, 119 U.S. 436, 444, that the power of a court to try a person for a crime is not impaired by the fact that he had been brought within the court's jurisdiction by reason of a 'forcible abduction'" (*Frisbie v. Collins*, 342 U.S. 519).

The supreme court justices showed a growing skepticism concerning the complaints of convicts that they had been coerced into confessing their guilt. The justices took the view that if a confession was procured by coercion, either physical or psychological, the conviction should be reversed, but the record must show a real denial of due process. Thus a California petitioner was told that he had not demonstrated any unfairness by



ATTORNEY GENERAL James P. McGranery (foreground) with some of the 91 U.S. district attorneys who convened in Washington, D.C., for their annual meeting in 1952. McGranery was sworn into office on May 27

the court in his trial for killing a six-year-old girl (*Stroble v. California*, 343 U.S. 181).

The court also declined to interfere on behalf of a defendant convicted and sentenced to death for the "sex-killing" of a 15-year-old girl in Oregon. The state statute requiring a defendant to sustain his plea of insanity beyond a reasonable doubt was not a violation of due process. There is no significant difference "between the Oregon rule requiring the accused, on a plea of insanity, to establish that defense beyond a reasonable doubt, and the rule in effect in about 20 states, which places the burden on the accused to establish his insanity by a preponderance of the evidence" (*Leland v. Oregon*, 343 U.S. 790).

The summary contempt sentence imposed by the trial judge against the attorneys for 11 Communist party leaders for violating the Smith act was sustained by the supreme court in a

five-to-three vote. The judge did not lose his power to punish for contempt under federal rule 42(a) by postponing the contempt hearing till the end of the trial. In a long dissenting opinion, which quoted copiously from the record of the trial, a minority of the justices thought the contempt sentence was unfair. Justice Felix Frankfurter made the point that the trial judge should have invited the senior circuit court judge to assign another judge to hear the charges (*Sacher v. U.S.*, 343 U.S. 1).

The high court also served notice on all spies and potential spies that it would leave them to the mercies of a trial court and jury. The repeated pleas of a husband and wife, convicted of giving secrets regarding the atomic bomb to the U.S.S.R., for a review or rehearing of their case, were rejected by the supreme court. Thus the first death sentence for peacetime spying was in effect affirmed by the high court.

Economic Controls.—The Defense Production Act Amendments of 1952 extended wage and price controls through April 30, 1953, but contained a policy statement directing the president to decontrol prices as fast as was consistent with the purposes of the act. Authority to regulate retail credit, allocations and priorities and real estate credit was extended to June 30, 1953. Rent control was extended to Sept. 30, 1952, with the proviso that areas which were certified as critical defense housing areas might continue the control until April 30, 1953. Local authorities might also request the extension of rent control to April 30, 1953. Congress also extended the agricultural conservation program to Dec. 31, 1954.

Fair Trade Laws.—Congress in effect overruled the supreme court's 1951 decision in the *Schwegmann* case by enacting a new Fair Trade law, making clear the type of law which congress had intended to authorize when it passed the Miller-Tydings act. The new Fair Trade law provided that a manufacturer and one retailer may set minimum prices on brand-named items and thereby bind all retailers in any state, including those who do not sign such an agreement.

Labour.—A threatened strike by the United Steelworkers of America precipitated a legal battle over the president's seizure powers. After many efforts of government agencies had failed to bring about a settlement, Pres. Harry S. Truman ordered the secretary of commerce to seize and operate the nation's steel

mills to avert a work stoppage which would endanger the national defense program. The steel companies, however, applied to the district court for an injunction against the seizure, which they obtained. The supreme court by a vote of six to three held that the lower court was correct because seizure of the mills was not authorized by the statutes or laws of the United States. There was no specific statute giving him power to seize property, nor could such power be implied from those specified in article ii of the constitution, nor could it be justified as an exercise of the president's military power as commander in chief of the armed forces (*Youngstown Co. v. Sawyer*, 343 U.S. 579).

A judgment in favour of a lumber company against the International Longshoremen's and Warehousemen's union in the amount of \$750,000 for damages for illegal picketing was affirmed by the supreme court. The union contended that the Taft-Hartley law provision under which suit was brought rendered illegal only such picketing as takes place after a determination by the National Labor Relations board that the acts complained of are unfair labour practices. Said Justice Douglas, speaking for the court, "Petitioners, representing one union and employing outside labor, were trying to get the work which another union, employing mill labor, had. That competition for work at the expense of employers has been condemned by the labor-management act. It represents national policy which has both administrative and conventional legal sanctions" (*Longshoremen v. Juneau Spruce Corp.*, 342 U.S. 237). The conviction of an employer for violating a Missouri law which provided that any employee entitled to vote may absent himself from his work for four hours between the opening and the closing of the polls on election day was sustained by the supreme court. Such laws do not violate the due process or equal protection of the law clause of the 14th amendment. Nor do they impair the obligation of contracts in violation of article i, section 10 of the federal constitution (*Day-Brite Lighting, Inc., v. Missouri*, 342 U.S. 421).

The attempt of a railway union, composed exclusively of white employees, to destroy the jobs of Negro "train porters" was rebuked by the supreme court. The union, acting under the Railway Labor act as bargaining representatives for railroad trainmen, had no right to force the railroad company to maintain bars against the employment of Negro workers. A bargaining agent "cannot use its position and power to destroy colored workers' jobs in order to bestow them on white workers" (*Railroad trainmen v. Howard*, 343 U.S. 768).

An attack on Michigan's antistrike law, applicable to certain public employees, failed in the Michigan supreme court. The court ruled that this law applied to employees of the municipal street railway system. It was not a breach of due process, nor a bill of attainder, nor did it impair the obligation of contract (*Detroit v. Division 26*, 51 N.W. 2d 228).

Congress provided for safer working conditions in coal mines whose operations affect interstate commerce. Mine operating concerns which employed more than 14 persons underground were required to meet certain standard safety provisions stated in the statute. The new act also created a federal coal mine safety board of review to hear appeals from the orders of federal coal mine inspectors.

Social Security.—Congress amended the Social Security act by increasing old-age and survivors' insurance payments by \$5 a month or 12½%, whichever was greater. Beneficiaries under the act would be permitted to earn \$75 a month in covered employment, instead of the previous \$50, without losing their status as pensioners. The new law also granted a credit of \$150 a month for each month of active military or naval service after July 24, 1947, and before Jan. 1, 1954. Other amendments



"SOME THINGS DON'T NEED TO BE SEEN," a cartoon by Berryman of the *Washington Star*



"ANOTHER HOT RIVET," a 1952 cartoon by Long of the *Minneapolis Tribune*

increased the federal share of the public-assistance payments to states for aid to the aged, blind and disabled.

Taxation.—Three decisions of the supreme court in tax cases dealt with problems of unusual interest. A composer of music, who had won a prize award of \$25,000 for a symphony submitted by him in a contest, included the entire amount in his income tax return as part of his gross income for 1947. He later filed a claim for refund on the ground that the award was a non-taxable gift, but his claim was rejected by the internal revenue office. He then applied for permission to amend his returns and to spread the award over the three-year period when he was working on the composition. The supreme court ruled that the award was not a gift, but that the composer should report the award as distributed over a 36-month period ending with the close of the year in which the award was paid and not some earlier period of 36 months during which the composition was being written (*Robertson v. U.S.*, 343 U.S. 711).

In another unusual case the supreme court held that money obtained by extortion was income returnable and taxable to the extortioner. A taxpayer had "muscle in" on a bootlegging operation known as the "High Seas Venture" from which he extracted about \$25,000 in cash, but he failed to list this money as income in his tax return. His conviction for wilfully evading his taxes was affirmed (*Rutkin v. U.S.*, 343 U.S. 130).

The court also upheld the right of optical companies to deduct as ordinary and necessary expenses "kickbacks" paid to physicians referring customers to the optical company. During the years in question—1943 and 1944—there was no governmentally declared public policy, national or state, proscribing such payments (*Lilly v. C. I. R.*, 343 U.S. 90).

The high court also settled a dispute between the state of Tennessee and contractors and retailers dealing with the Atomic Energy commission. The Tennessee revenue laws imposed a sales tax on the sale of goods within the state and a use tax on the use within the state of goods purchased outside the state. The court held that contractors dealing with the Atomic Energy commission and merchants who sold goods to those contractors

were exempt from such taxes under the provisions of the Atomic Energy act (*Carson v. Roane-Anderson Co.*, 342 U.S. 232). (See also *INDIANS, AMERICAN*; *MUTUAL SECURITY PROGRAM*; *NATIONAL LABOR RELATIONS BOARD*; *UNITED STATES.*) (M. DN).

United Kingdom Legislation.—Of the legislation undertaken by the parliament of the United Kingdom in 1952, the Defamation act was almost certainly the most significant measure. It made a number of important changes in the law of libel and slander, summarized as follows: (1) defamation in a broadcast was to be treated as libel, not slander, the most important consequence of which was that it would be actionable without proof of special damage; (2) slander calculated to disparage a plaintiff in any office, profession, calling, trade or business held or carried on by him at the time of the publication was to be actionable without proof of special damage; (3) slander of title and certain other forms of malicious falsehood were made actionable without proof of special damage in certain circumstances; (4) unintentional defamation was not to be actionable where a proper offer of amends was made; thus parliament in effect overruled the decision of the house of lords in the leading case of *Hulton v. Jones* and the intention of the publisher, not the effect of the publication on the plaintiff, was made the crucial test; (5) a defense of justification would not fail by reason only that the truth of every charge was not proved if the words not proved to be true did not materially injure the plaintiff's reputation having regard to the truth of the remaining charges; (6) important extensions were made to the principle that newspapers have a qualified privilege in reporting certain matters of public interest; (7) agreements for indemnity against liability for civil libel were made lawful in certain circumstances; (8) evidence might be given in mitigation of damages where the plaintiff had been awarded or had claimed damages for the publication of words to the same effect as those in respect of which he made his claim.

Other measures affecting the administration of the law included the Judicial Officers (Salaries) act, raising the salaries of and making further provision for pensions for county court judges and metropolitan magistrates, and the Magistrates Courts act, an important consolidation measure. Of some interest to the general public were the Disposal of Uncollected Goods act (permitting the sale of goods accepted for repair but not collected) and the Hypnotism act, regulating the practice of hypnotism for public entertainment.

United Kingdom Case Law.—Although there were no great judicial issues in 1952 there were a number of decisions of general interest. One was *The National Trust v. The Midlands Electricity Board* (1952 1 *Times Law Reports* 74), in which covenants made with the National Trust not to injure the natural aspect and condition of land were held void for uncertainty.

More important was *R. v. Tronoh Mines, Ltd.* (1952 1 *Times Law Reports* 461). The question here was whether the effect of the Representation of the People act, 1949, was to prohibit during the period of a general election expenditure whose real purpose was general political propaganda as distinct from propaganda directed at securing the return of a particular candidate in a particular constituency. The facts were that the defendant company had bought advertising space in a national newspaper and had used it to attack the policies of the Labour government in office before the election, and the prosecution's case was that such expenditure would tend to secure the return of candidates in each constituency opposed to the Labour government and that it would not be included in any of the statutory returns of such expenditure. The court, however, held that propaganda of a general character not designed to secure the return of a particular candidate in a particular constituency was not affected

by the act.

An issue of considerable importance to trade unions was decided in their favour by the court of appeal in *D. C. Thomson and Co. v. Deakin* (1952 2 *Times Law Reports* 105) when it was held that incitement to withdrawal of labour by employees with the natural and probable consequence that the employer might be compelled to break his contract with a third party did not constitute the tort of procuring a breach of contract. The plaintiffs here were a firm that refused to employ union labour and this matter aroused nation-wide interest.

There were a number of judicial decisions of interest from the standpoint of matrimonial relations. In *Bayliss v. Blackwell* (1952 1 *All England Reports* 74) it was held that the common law unity of husband and wife had not been so affected by legislation as to give a husband the right to sue the wife for civil wrongs (here motorcar injuries) inflicted by her before marriage. In *Bennett v. Bennett* (1952 1 *All England Reports* 413) the court of appeal held that an agreement by a wife not to apply to the court for maintenance was contrary to public policy and therefore void as ousting the jurisdiction of the courts. In *Best v. Samuel Fox and Co.* (1952 2 *Times Law Reports* 246), where the plaintiff's husband had been injured by the defendants' negligence, it was held that the husband's consequent loss of sexual capacity did not render them liable to the wife in damages.

Commonwealth Legislation.—South Africa.—During 1952, in the broad field of constitutional development as distinct from private law, all else was overshadowed by the controversies inside the Union of South Africa aroused by and emanating from the Nationalist party's policy of *apartheid*, or the segregation of the black from the white citizens of the union, which policy the government under the premiership of D. F. Malan (*q.v.*) was putting into effect. The High Court of Parliament act, which threw into the melting pot the whole relationship between the legislature, the executive and the judiciary of the union, was the principal question involved, but by no means the only one. There were, in addition, the Suppression of Communism (Amendment) act and the Natives (Abolition of Passes and Coordination of Documents) act.

The great issue, the High Court of Parliament act and its consequences, arose from the Separate Representation of Voters act, itself a notable emanation of the policy of *apartheid*. The legality and constitutionality of the Separate Representation of Voters act was challenged in the courts, and ultimately the appellate division of the supreme court set the act aside as being outside the authority of the government without an amendment to the South Africa act, which would require a two-thirds majority in the senate and house of assembly sitting together. The appellate division thus reversed, or at any rate refused to follow, its own previous decision of a similar issue in 1937.

On March 20, 1952, the prime minister made a statement in the house of assembly on the appeal court's decision in which he said: "The judgment of the Appeal Court in the matter of the separate representation of voters, which reverses its previous judgment of 1937, has created a constitutional position which cannot be accepted. Neither Parliament nor the people of South Africa will be prepared to acquiesce in a position where the legislative sovereignty of the lawfully and democratically elected representatives of the people is denied, and where an appointed judicial authority assumes the testing right . . . particularly since that judicial authority does not, or is not obliged to, act consistently."

In both the house of assembly and the senate the opposition soon showed its intention to resist the evident purpose of the government to overrule the court of appeal. On April 23 the High Court of Parliament bill was introduced into the house of

assembly. As amended in committee of the whole house the essence was to provide that any judgment or order of the appellate division of the supreme court of South Africa—whether given before or after the bill became law—whereby the appellate division declared or rendered invalid any provision of any act of parliament or in any manner rendered such a provision inoperative should be subject to review by the high court of parliament. This court was to be composed of every senator and every member of the house of assembly, with one of its members appointed by the governor general to be its president, 50 members forming a quorum. Applications for review of any judgment or order were to be made by a minister within six months of the appellate division's ruling (or, in the case of rulings made before the act came into force, within six months of the passing of the act). The president of the court was within 30 days of the making of such an application to refer it to a committee of the court to be known as the judicial committee, which was to be composed of ten members of the court appointed by the president. The judicial committee was to be empowered to consider written or verbal representations concerning the application; and after it had considered the appellate division's record of proceedings, the reasons given by the judges and the representations made by the parties, it was to report to the high court, making such recommendations as it thought fit. The high court of parliament was empowered to make such order as it thought proper after considering the report and recommendations of the judicial committee; the court's decision was to be final and binding and to be executed as if it were a decision of the provincial division of the supreme court in which the matter was originally heard.

The opposition contested the bill by every means within its power. J. G. N. Strauss raised the question, in the debate on the second reading, whether the bill did not have to be passed by a joint sitting of both houses in that it embodied provisions amending section 152 of the South Africa act and whether the motion that the bill be read a second time should not be disallowed. He argued that the bill was merely an attempt to get parliament as ordinarily constituted to nullify the appeal court's decision in *Harris v. Minister of the Interior* (setting aside the Separate Representation of Voters act) and to circumvent the guarantees given to individuals under sections 35 and 152 of the South Africa act. This submission was overruled.

The minister of the interior, introducing the bill, argued that its object was to restore to the democratically elected representatives of the people the right to decide on the validity of acts of parliament, and that it was a natural development from the high court of parliament in the United Kingdom. For the opposition, Strauss, in the course of the debate, stressed that the appeal court judgment of 1937 arose from an act of parliament passed by both houses sitting together with a two-thirds majority. During May the bill passed through both houses. When enacted, the next stage of the battle, as with the Separate Representation of Voters act, was carried to the courts. The high court overruled the High Court of Parliament act; the matter was taken to appeal, on Nov. 13, 1952, and the appellate division of the supreme court unanimously declared the High Court of Parliament act invalid.

Canada.—In the dominion parliament one of the most interesting measures, in view of the controversies aroused by the practice of resale price maintenance in the United Kingdom, was the Combines Investigation Amendment act, prohibiting those engaged in manufacturing, supplying or selling commodities from fixing specific or minimum resale prices. The Visiting Forces (North Atlantic Treaty) act was a measure passed similar to measures in the United Kingdom and other parliaments to give effect to the agreement between the North Atlantic treaty

owers of June 19, 1951, on the legal status of visiting forces, subjecting them to their own rather than local law. The Old Age Security act provided for pensions, without means tests, for all persons at the age of 70.

In the Canadian provinces, both Ontario and Saskatchewan introduced legislation broadly on the lines of the Crown Proceedings act, making it possible to sue the crown in tort and in contract.

Australia.—The Conciliation and Arbitration bill was the principal measure of general interest submitted to the Commonwealth parliament, its object being to broaden the jurisdiction of the court composed of three arbitration court judges dealing with industrial disputes.

In Tasmania a somewhat drastic but rather interesting Sexual Offences act was passed, the most striking feature of which was that it made it possible for an incurable offender to be segregated for the rest of his life. In New South Wales a Workers' Compensation (Amendment) act was passed, adding new classifications of persons and of injuries, and increasing the maximum compensation from £1,000 to £2,000. Queensland enacted a Law Reform (Abolition of the Rule of Common Employment) act, following the United Kingdom measure of 1948 and similar measures in other Australian states, while the legislatures of South Australia and Western Australia grappled with the thorny problem of rent restriction.

New Zealand.—The most interesting statute passed in 1952 appeared to be the Police Offences Amendment act, a controversial measure intended to strengthen the law against sedition and intimidation in order, particularly, to remedy weaknesses disclosed during the strike of waterside workers. It contained a very wide definition of "seditious intention" much criticized by the opposition.

India.—A noteworthy measure in 1952 was the Press (Objectionable Matter) act, providing against "the printing and publication of incitements to crime and other objectionable matter." By empowering the government to declare certain publications forfeited and to seize and destroy unauthorized newsheets and newspapers and presses producing them, it appeared at first to be a severe and repressive enactment. In fact, it limited the powers to these ends conferred on the executive under the Emergency Powers act.

(See also AGRICULTURE; BANKING; BUSINESS REVIEW; CONSUMER CREDIT; EDUCATION; INTERNATIONAL LAW; PATENTS; PUBLIC UTILITIES; TAXATION.) (W. T. WE.)

Lawn Bowling. The annual national tournament of the American Lawn Bowling association was held at Seattle, Wash., July 28–August 2, 1952. The types of play and results were as follows.

Triples.—First place, and winners of the Rettie Memorial trophy: Wallace Kenmuir (skip), John Lang and Percy Smith of the Vancouver South club, Vancouver, B.C. Second place (Chicago cup): Alec Houston (skip), J. Morrison and A. Morrison of the Mt. Pleasant club, Vancouver, B.C. Third place (Wisconsin trophy): Frank P. Webb (skip), James Langlow and Ted Sherwood of the Queen City club, Seattle, Wash.

Doubles.—First place (California trophy) was won by Richard Folkins and Hugh Folkins of the Arroyo Seco club, Los Angeles, Calif. Second place (Lakeside trophy) was won by George Jewar and Jack Scrivener of the Terminal club, Vancouver, B.C. Third place (Western New York trophy) was won by Ernest Griffiths and Charles P. Middleton of the Queen City club, Seattle, Wash.

Singles.—First place (National Singles trophy) was won by Hugh Folkins of the Arroyo Seco club, Los Angeles, Calif.; while second place (Metropolitan trophy) was won by W. G.

"Bill" Hay of the Beverly Hills club, Beverly Hills, Calif.

Milwaukee, Wis., was chosen for the 1953 national tournament, commencing July 11. (L. PR.)

Lawn Tennis: see TENNIS.

Lead. The outputs of the major producing countries listed in Table I, as reported by the U.S. bureau of mines, ordinarily account for about 90% of the world total.

Table I.—World Smelter Production of Lead

	1945	1946	1947	1948	1949	1950	1951*
(Thousands of short tons)							
Argentina . . .	23.3	17.8	19.6	19.5	30.1	38.6	26.4
Australia . . .	174.6	154.0	177.6	178.6	170.0	190.6	191.5
Belgium . . .	8.0	26.2	44.6	72.4	87.2	68.4	70.1
Canada . . .	162.5	165.8	162.0	160.1	146.2	170.4	162.7
France . . .	3.0	38.3	38.1	37.8	60.0	67.5	52.9
Germany . . .	?	31.9	26.8	54.1	109.5	130.2	133.9
Italy . . .	0.9	15.7	19.5	29.4	31.4	41.3	39.6
Japan . . .	6.1	4.4	6.8	7.7	8.4	11.0	11.9
Mexico . . .	221.7	151.8	240.1	214.4	233.7	253.8	242.2
Peru . . .	44.1	40.2	36.1	38.4	39.7	34.9	48.8
Spain . . .	35.1	35.6	37.9	27.9	36.4	38.4	45.7
U.S.S.R. . . .	44?	53?	69?	83?	99?	113?	141?
U.S. . . .	443.6	338.2	441.0	406.7	475.9	505.0	464.4
Total . . .	1,250	1,165	1,445	1,520	1,740	1,875	1,825

*Preliminary.

United States.—As indicated in Table II, mine output, refinery output and imports all declined in 1951. Only secondary recovery showed a small increase.

Table II.—Data of Lead Industry in the U.S.

	1945	1946	1947	1948	1949	1950	1951
(Thousands of short tons)							
Mine output . . .	390.8	335.5	384.2	390.5	409.9	430.8	388.2
Refinery output . .	443.6	338.2	441.0	406.7	477.3	508.3	417.7
Domestic ores . . .	356.5	293.3	381.1	339.4	404.4	418.8	342.6
Foreign ores . . .	87.1	44.9	59.9	67.3	72.9	89.5	75.1
Imports . . .	301.7	163.0	229.4	348.0	400.5	441.8	178.9
Exports . . .	1.8	0.7	1.5	0.4	1.0	1.0	1.3
Secondary . . .	363.0	392.8	512.0	500.1	412.2	482.3	505?
Consumption . . .	1,052	956.5	1,172.0	1,133.9	957.7	1,238.0	1,184.8
Stocks, year-end . .							
Producers . . .	161.8	189.7	128.0	146.8	201.5	137.7	124.1
Consumers . . .	102.9	41.1	91.3	119.2	97.3	139.9	102.8

Although mine production in the first half of 1952 was somewhat above the 1951 average, it declined later, and the total for the first eight months was 261,710 tons.

Canada.—Lead production was 80,459 tons in the first half of 1952, up from 75,918 tons in the same period of 1951. (See also MINERAL AND METAL PRODUCTION AND PRICES.)

(G. A. RO.)

League of Women Voters of the United States: see SOCIETIES AND ASSOCIATIONS, U.S.

Leather. Leather production in the United States remained on a moderate level through 1952, following the pattern of the preceding year. However, by midyear, U.S. tanners had an intensive merchandising program under way which, in a few months, showed encouraging results in regaining important markets lost to substitutes since the beginning of World War II and in securing increased fashion acceptance of leather.

Economic and merchandising factors were of primary concern to U.S. tanners in 1952. Raw stock and tanning materials were in good supply, both from foreign and domestic sources. No major scientific or technical advances were reported through the year.

In general, conditions in the U.S. industry corresponded with those in other major leather-producing countries of the world, in so far as conditions could be determined from incomplete reports.

Domestic raw stock assumed increased importance to the U.S. industry, with supplies steadily increasing above previously normal levels. The number of cattle on feed in the United States on Jan. 1, 1952, was 11% larger than a year before. The number of sheep and lambs on feed also moved up sharply, and on Jan. 1, 1952, was 15% higher than a year earlier. World sheep

Average U.S. Monthly Leather Production
(000's omitted)

	1952	1951	1950	1949	1948
All cattle hides (including kips for side leather)	1,821	1,890	2,032	1,994	2,173
Calf and whole kip	787	665	888	847	873
Goat and kid	2,446	2,583	3,100	2,898	3,164
All sheep and lamb	2,255	2,044	2,617	2,387	2,794

1952 figures are based on an average of the first nine months' production. Compiled from data of the Tanners Council of America and the U.S. Bureau of the Census.

numbers, reported by the U.S. department of agriculture, stood at a total of 803,300,000 head on Jan. 1, 1952. This compares with a 1941-45 average of 758,700,000 head.

Suspension by the Office of Price Stabilization of price controls for cattle hides, kips and calfskins was announced in April. A month later the OPS removed price ceilings on all types of leather and leather-making raw materials, foreign and domestic, with the exception of scrap leather.

The Tanners Council of America predicted a continued heavy flow of cattle to market in early 1953, and also predicted that in spite of increased slaughter the U.S. cattle population in 1953 would reach the all-time high level of 93,000,000 to 94,000,000 head.

The U.S. leather industry continued through 1952 to lose segments of its major market, the shoe manufacturing industry, to substitute materials. It was estimated that 60% of the shoes made in the U.S. in 1952 were made with soles of leather-substitute materials—an all-time high record and a market loss that had been steadily slowing heavy leather manufacturing operations since 1944.

Confronted with economic and merchandising problems of the year, the Tanners Council Laboratory committee in 1952 adopted a major program of continuous effort aimed at product improvement as an essential phase of trade promotion and public relations.

Through the year, U.S. tanners also carried out active steps to combat misrepresentation and deception by imitations of leather through false and misleading advertising and deceptive trade names. A large number of these cases were placed before the Federal Trade commission, and in other cases court action was being prepared.

Perhaps the most noteworthy aspect of U.S. tanning operations in 1952 was an increased and widespread recognition by the industry of "the potential scope and character of the changes that can and have taken place in consuming markets." There were some, in fact, who believed the entire industry was undergoing a period of change which would, in coming years, culminate in basic changes in the character of leather-making operations, products and markets. (See also SHOE INDUSTRY.)

(R. B. B.)

Lebanon. Lebanon is an Arab republic, bounded west by the Mediterranean sea, north and east by Syria and south and southeast by Israel. Area: 3,470 sq.mi. Pop. (1951 est.): 1,285,000. Language: Arabic (90%); Armenian, Greek, etc., also spoken. Religion: Christian 52.8%; Moslem 45.3%. Chief towns (pop. 1949 est.): Beirut (cap., 201,451); Tripoli (65,137); Zahle (24,776). Presidents of the republic in 1952: Sheik Bishara al-Khuri and (from Sept. 23) Camille Shamun (q.v.). Prime ministers: Abdullah el-Yafi, Sami Solh (from Feb. 11), Nazim Akkari (from Sept. 9), Saab Salaam (from Sept. 12) and (from Sept. 18) Gen. Fuad Shenab.

History.—On Jan. 9, 1952, the last of the currency restrictions imposed in 1944 were removed; later in the month the Lebanese government submitted to parliament a proposal to establish a central economic council to study the country's resources and to supervise development projects. This was followed in February by an announcement that the following projects would be included in the program to be carried out with

Point Four aid: the Litani river irrigation scheme; the enlargement of the Beirut port and its free zone; and the improvement of the Tripoli port.

Other allocations would be devoted to the development hospital, housing, social insurance and radio services.

In March the customs union with Syria was restored; it had been abrogated in 1950 (see Syria). In June the government signed a new agreement with the Iraq Petroleum company. Under this agreement the right-of-way dues for the passage of I.P.C. pipe lines through Lebanese territory were increased and the company undertook to expand its Tripoli refinery to satisfy Lebanese requirements. In July the existing trade agreements with Germany were revised and a trade agreement was signed with Czechoslovakia.

In August the opposition parties demanded the resignation of the president, Bishara al-Khuri. It was countered by the government's convening an extraordinary meeting of parliament to secure special powers to carry out a series of "urgent" political, economic and social reforms. No decision was reached; on Sept. 9 the president accepted the cabinet's resignation and appointed in its place a three-man emergency cabinet under Nazim Akkari. It was succeeded on Sept. 12 by a new ministry under Saab Salaam, which at once published decrees forbidding demonstrations. On Sept. 18, after a peaceful three-day strike in Beirut and under pressure from the army, President Khuri resigned and an interim ministry under Gen. Fuad Shenab took office. On Sept. 23 Camille Shamun, a prominent member of the Socialist opposition, was elected president by parliament and on Sept. 29 he consulted with Col. Adib es-Shishakli, Syrian chief of general staff and head of the ruling Higher Military council, about closer co-operation between Lebanon and Syria. (See also MIDDLE EAST.)

(O. M. T.)

Education.—Schools (1949): primary 734, pupils 60,019; private 456, pupils 75,475; foreign 279, pupils 53,028; technical and trade 5, pupils 456. Universities 2, students 2,147.

Agriculture.—Main crops (metric tons, 1949): wheat 50,000; barley 27,000; maize 13,000; oats 2,000; potatoes 40,000. Fruit products (metric tons, 1951): grapes (1949) 90,000; olives 40,000; olive oil 13,000; oranges and tangerines 62,000; lemons 15,000. Livestock (1951 est.): goats 400,000; sheep 25,000; cattle 20,000; horses 10,000; donkeys 20,000; mules 5,000. Wool production (incl. Syria; greasy basis, 1951) 6,000 metric tons.

Industry.—Production (metric tons, 1949): cotton yarn 6,800; cotton textiles 6,000; silk and rayon textiles 2,600; leather, hides and skins 2,700; cement (1951) 302,400.

Finance and Banking.—Budget: (1950 est.) balanced at L.L. 85,300,000 (1951 est.) balanced at L.L. 85,300,000. Currency circulation (June 1951) L.L. 199,000,000. Bank and government deposits (May 1952) L.L. 20,000,000. Monetary unit: Lebanese pound, with an exchange rate (Nov. 1952) of L.L. 6.16 to the pound sterling and L.L. 2.21 to the U.S. dollar.

Foreign Trade.—(1951) Imports L.L. 298,500,000; exports L.L. 89,700,000. Main sources of imports (1951): Syria 20%; U.S. 16%; France 12%; U.K. 10%. Main destinations of exports: Syria 25%; U.S. 25%; Egypt 11%; Italy 5%.

Transport and Communications.—Roads (1949): 1,540 mi. Licenced motor vehicles (Dec. 1950): cars 10,723, commercial vehicles 3,600. Railways (1949): 475 mi. Telephones (1951): 4,245. Radio receiving sets (1949): 31,000.

Leeward Islands. This British colony is composed of four presidencies, a group of islands forming the northern part of the Lesser Antilles in the Caribbean. Population, mainly Negro. Religion: Christian. Principal towns: St. John's, Antigua (cap., c. 12,000), Basseterre, St. Christopher (c. 13,000). Governor in 1952, Sir Kenneth Blaxter.

History.—The general legislative council and the legislative councils of St. Kitts-Nevis-Anguilla and Montserrat were established under the new constitution. There was also introduced

	Area (sq.mi.)	Population (1946 Census)	(1951)
Antigua (with Barbuda)	171	41,757	46,000
St. Kitts-Nevis-Anguilla	152	46,243	50,000
Montserrat	32	14,333	13,000
Virgin Islands	67	6,505	7,000
	422	108,838	117,000

a new system of committees of the councils, which dealt with groups of related departmental subjects; the object was to associate unofficial members of the councils with the government's policies and to familiarize them with the problems of day-to-day administration.

In Antigua, in contrast with the preceding year, industrial peace prevailed. The Antigua development plan was revised and a loan program prepared, laying particular stress on economic development. A record sugar crop (34,254 tons) was produced and the cotton crop exceeded 500,000 lb. With a generous development and welfare grant, the improvement of the inadequate water supplies was begun. Great progress was made with the hurricane re-housing program, about 600 "self-help" houses being built, in addition to those being put up by two "aided-self-help" housing groups. St. Kitts produced a record sugar crop (50,613 tons). The new electricity scheme for St. Kitts was brought into operation, and a start was made with slum clearance in Basseterre. The cotton crop in Montserrat was about 400,000 lb.; a scheme for pasture development and livestock improvement was approved. In the Virgin Islands plans for livestock development were implemented by the importation of pedigree livestock, the provision of agricultural credit for pasture improvement and the development of water supplies. In addition a thorough geological survey was undertaken with special reference to water supply and mineral potential.

Education.—The numbers of pupils enrolled in the public schools, and the government expenditures, were as follows:

	Pupils (1951)		Government expenditure
	Primary	Secondary	
Antigua	9,756	1,022	B.W.I. \$217,470
St. Kitts-Nevis-Anguilla	10,700	656	B.W.I. \$261,120
Montserrat	3,224	163	B.W.I. \$110,838
Virgin Islands	1,668	82	B.W.I. \$ 62,458

Finance and Trade.—Monetary unit: British West Indian dollar, valued at 58.33 cents U.S. (B.W.I. \$4.80=£1 sterling).

	Budget (1952 est.)	
	Revenue*	Expenditure*
Antigua	B.W.I. \$2,824,073	B.W.I. \$3,114,668
St. Kitts-Nevis	B.W.I. \$2,948,214	B.W.I. \$2,538,789
Montserrat	B.W.I. \$ 587,549	B.W.I. \$ 643,229
Virgin Islands	B.W.I. \$ 183,948	B.W.I. \$ 247,729
Federation†	B.W.I. \$ 87,554	B.W.I. \$ 87,554

*Excluding grants-in-aid from the United Kingdom Treasury and Colonial Development and Welfare funds. †Federal budget other than contributions from presidencies.

Principal exports: sugar, cotton (sea island). Production: sugar (1952) 84,867 tons; cotton exports (1951) 15,202 cwt. (P. H-Mv.)

Legislation: see LAW; UNITED STATES. See also articles on individual nations and U.S. states.

Lemons: see FRUIT.

Leprosy: see TROPICAL DISEASES.

Leukemia: see BLOOD, DISEASES OF THE.

Liberia. Liberia, on the great western bulge of Africa, immediately north of the equator and adjacent to the great rain forests, is the only republic in Africa. It has an area of 43,000 sq.mi. and a population (est. 1950) of about 1,350,000. Monrovia, the seaport capital (est. 1950 pop., 12,000) is the republic's only town with a population greater than 4,000.

The religion is preponderantly native tribal, with a total of 23 native tribes and clans represented. In addition, 18 Christian denominations were active in missionary work.

President in 1952: William V. S. Tubman.

History.—In Jan. 1952 William Tubman was inaugurated at Monrovia for his second term as president of Liberia. In his address Tubman noted that Liberia had no domestic or foreign debts. He proposed a three-year compulsory military training program for men between the ages of 16 and 45. William R. Tolbert succeeded Clarence Simpson as vice-president and



RECEPTION for Liberian chiefs at Monrovia following the inauguration of Pres. William V. S. Tubman (left) who entered his second term of office in Jan. 1952

Foreign trade, 1951	
Imports	Exports
B.W.I. \$5,117,483	B.W.I. \$2,882,375
B.W.I. \$7,150,229	B.W.I. \$6,486,692
B.W.I. \$ 890,474	B.W.I. \$ 631,296
B.W.I. \$ 294,949	B.W.I. \$ 297,829
—	—

Simpson was appointed ambassador to the United States.

President Tubman asked the U.S. for a revision of the Bomi hills mining contract which would give Liberia one-half of the profits and representation

on the board of directors. Republic Steel of the U.S. was the majority stockholder and chief importer of the mines which in 1952 were producing iron ore at an annual rate of 1,000,000 tons. Under the terms of the agreement reached in October, Liberia, upon liquidation of its debt of \$4,000,000 or on April 1, 1957, whichever date was earlier, would begin to share net profits. Until then, royalties of \$1.50 a ton, in addition to royalties provided in the concession, U.S. currency, would be paid.

On Sept. 2 the first part of a \$1,000,000 shipment of materials and machinery for the new community of Tournata was unloaded. The Liberian government set aside 500,000 ac. for this development, which was sponsored by Robert G. LeTourneau of the U.S. (X.)

Education.—In 1951 Liberia had 89 government schools, 71 mission schools and 29 tribal schools, with the latter showing the greatest increase. Institutions for advanced education included the College of West Africa and Liberia college, both of Monrovia, and the Booker T. Washington institute, at Kakata, for the agricultural and basic industrial training of sons of native chiefs and other tribespeople.

Finance.—The U.S. dollar is the official monetary unit and is supplemented by Liberian fractional coins with the dollar base freely negotiable and at par. Actual revenue in 1951 was \$12,830,685; expenditure, \$10,444,828. Revenue for 1952 was estimated at \$8,500,000; expenditure \$11,000,000, including expenditures from proceeds of loans from the U.S. Export-Import bank.

Trade.—Exports in 1951 totalled \$52,549,457; imports were \$18,135,897. Chief exports were rubber (88%), palm kernels (7%) and iron ore (2%). Leading customers were the U.S. (92%), the Netherlands (5%) and Germany (2%); leading suppliers, the U.S. (67%), the United Kingdom (10%) and Germany (3%).

Industry and Agriculture.—Subsistence agriculture is the preponderant source of employment, with rice the principal subsistence crop. Firestone Plantations company remained the largest commercial enterprise in 1952. About 80,000 ac. were planted with rubber trees. Agricultural exports in 1951 included rubber 39,989 short tons; palm kernels 23,428 tons; palm oil 4,128 tons; piassava 1,362 tons; cacao 315 tons. Mineral exports included iron ore 166,396 tons and gold 2,999 oz.

(J. W. Mw.)

Libraries. The 1952 annual conference of the American Library association in New York city drew more than 5,000 librarians to consider the problems of censorship and the free flow of ideas within the United States and among nations. Mrs. Eleanor Roosevelt spoke on winning the battle of democracy with weapons of education and knowledge rather than through techniques of suppression and ignorance. Other principal speakers were Norman Cousins, Gilbert Highet, Robert Blakely, John Bakeless, Lawrence Powell, Judah Goldin, Alan Barth and Robert Lang.

Two preconference institutes at Columbia university concerned themselves with strengthening education services in public libraries and with the subject analysis of library materials. The first conference reflected the increasing role of adult educational activities in the public libraries; the second reflected the struggle librarians were having with bibliotechnology.

An attempt was made at the annual conference to bring all the national library associations together into one federation, but this apparently could not be done until more study had been given to the condition of confederation.

The Ford foundation announced that it would renew its grant of \$200,000 for the "Heritage in Time of Crisis" adult discussion program, the money to be spent in the experimental centres that had evolved successful programs during the first year. Preliminary evaluation of the year's experimentation had suggested that adults were eager to discuss important civic problems with enlightened but not professorial leadership. Public librarians are able to provide that kind of leadership.

The U.S. state department provided funds with which the American Library association distributed copies of Henry Steele Commager's *Living Ideas in America* to 700 libraries in other countries.

Pressure on libraries to censor books that irritated special community interests increased steadily, and librarians began to reconsider their defenses, with uneasy recollections of similar events in the early years of the totalitarian states, in Europe and elsewhere. The Ford foundation gave the American Library Association Intellectual Freedom committee \$15,000 with which to sponsor a two-day conference on the problem of censorship in libraries.

On the international scene, librarians from the United States participated in the tenth birthday celebration of the Bibliotheca Benjamin Franklin in Mexico City, Mex., and in the seminar series on U.S. libraries and librarians, held in Rome, Florence and Naples, It., with the co-operation of the Italian Library association and the ministry of public instruction. The centennial anniversary of José Medina was celebrated by the Pan American Union.

An American library was established at the University of Dijon, Fr., in memory of John Erskine. A bomb was exploded in the U.S. Information Services Lincoln library in Buenos Aires, Arg. A serious fire in the Library of Parliament, Ottawa, Ont., disrupted extensive exchange relations with other American libraries and caused irreparable damage.

In the public library field, important but unspectacular progress was made in strengthening organized adult educational activities, including increased use of films and other audiovisual aids. The Newark, N.J., Public library opened an extensive science and technology division. Salina, Kan., established a *vocarium* for children, with spectacular success.

New public library buildings were opened, or were near completion, in Scarsdale, N.Y.; Newton, Mass. (an addition); Juneau, Alsk.; Tacoma, Wash. (new building started); and Garden City, N.Y. Many branch libraries were completed, were several buildings in smaller towns.

The national archives established four new centres, in Denver, Colo., Dallas, Tex., Atlanta, Ga., and St. Louis, Mo.—the latter was to contain personnel records of former civilian employees of the federal government. Other centres were located in Washington, D.C., New York city, Chicago, Ill., and San Francisco, Calif. The Army Medical library assumed the new title of the Armed Forces Medical library.

The Library of Congress released three long-playing records of American Indian music. These consisted of songs of the Sioux, Yuma, Cocopa, Yaqui, Pawnee and Ute tribes. Along with the volumes of Oscar Jacobson of the University of Oklahoma at Norman they constituted an important recognition of native American Indian culture.

An outstanding publication of the year was the 54-vol. set of "Great Books of the Western World," published by the *Encyclopædia Britannica* and The University of Chicago. (See GREAT BOOKS OF THE WESTERN WORLD.) Yale university issued the first of Gertrude Stein's unpublished manuscripts. The Library of Congress began publishing catalogue cards for motion pictures and film strips, five new albums of recorded poetry read by the poets themselves, and a monumental catalogue of 50,000 motion pictures registered in copyright 1912-39.

The Association of College and Reference Libraries established a new monographic series and the University of Illinois Urbana, began a new library quarterly, *Library Trends*.

Three new techniques of general significance were announced: the state of Michigan installed a state-wide teletype network for the public libraries; the Midwest Inter-Library centre teletype network began operation; and experimentation on Ralph Shaw's photoclerical process reached the point of demonstrated success.

Faulkner Studies, a new quarterly, announced its intention of increasing the reading and the understanding of William Faulkner's published works.

Many new college and university library buildings were reported during the year. The State University of Iowa dedicated its new modular building and the University of North Carolina dedicated a large addition. Youngstown college, O.; Lycoming college at Williamsport, Pa.; the College of St. Rose at Albany, N.Y.; and the New Orleans Baptist Theological seminary completed their buildings. Baylor university, Waco, Tex., opened its new Armstrong-Browning library and Queens college, Flushing, N.Y., started a new library to be named the Paul Kapper library in honour of the founder and president of the college. Kansas State Teachers college, Emporia, dedicated its William Allen White Memorial library.

Cornell university, Ithaca, N.Y., established a new rare book and manuscript department as did the State University of Iowa. Kent State university, Kent, O., offered a new undergraduate curriculum in library training, integrating library education with the student's field of specialization.

Among the special collections acquired by libraries were the following: Bryn Mawr college—the H. L. Goodhart mediaeval library of 1,000 volumes; Yale university—the papers of Henry L. Stimson, and the 1,000-vol. W. R. Coe library of ornithology; Library of Congress—a collection of Maxim Gorky's letters; the papers of Pres. William Howard Taft and 10,000 manuscript papers from Mrs. Woodrow Wilson; Columbia university—1,100 volumes on copyright law; Northwestern university—2,000-vol. collection of Africana; the University of California at Los Angeles—the Michael Sadleir collection of Victorian

novels; the University of Pittsburgh—a gift of \$75,000 for books from the Hartman estate; Dartmouth college—the deposit of the Vilhjalmur Stefansson library on the polar regions; West Virginia university—the Drylan Shakespearian collection of 7,000 volumes; Massachusetts Institute of Technology—the library of radio history from George H. Clark and the Radio Corporation of America; Princeton university—papers from the firm of Henry Holt & Co.; Wisconsin State Historical society—the McCormick collection of agricultural history; the University of Virginia—a complete set of the first edition of Edgar Allan Poe's works and manuscripts, letters, etc., from Clifton Barrett; Brown university—a \$100,000 gift from Mr. and Mrs. John D. Rockefeller, Jr., as a memorial to Arthur M. Allen, a classmate of Rockefeller; the University of Rochester—the papers of William H. Seward, secretary of state in Lincoln's administration; Brandeis university, Waltham, Mass.—a special Lincoln collection from Alfred W. Stern; the University of New Mexico—the 10,000-vol. library of Julia W. and T. B. Catron, specializing in the territorial law of New Mexico and the history of Spanish and Mexican literature; the University of North Carolina—a large collection of Thomas Wolfe's letters; the Bancroft library of the University of California—the letters of John C. Fremont and his family for the periods of 1877–84 and 1873–90, to add to Fremont materials already there. (See also AMERICAN LIBRARY ASSOCIATION; SOCIETIES AND ASSOCIATIONS, U.S.)

(R. E. EL.)

International.—The work of the Libraries and Documentation division of the United Nations Educational, Scientific and Cultural organization (U.N.E.S.C.O.) in 1952 fell into three main sections: public library development, bibliography and documentation, and the group of activities carried on by the Clearing House for Publications. The last-named issued the *Handbook on the International Exchange of Publications* (printed 1950, publication delayed), developed an information service on methods of documentary reproduction, and continued to publish the *UNESCO Bulletin for Libraries*. Within the technical assistance program the following projects were in existence or preparation: the development of the library of the Syrian State university, Damascus; the development of the university libraries of Iran, starting (in 1951) with the faculty libraries of science and medicine in Tehran; the creation of a Turkish national bibliographical centre in the National library, Ankara, primarily to supply scientific documentation to the institutes of seismology and hydrogeology established in Turkey by the technical assistance program but later to be extended to cover all subjects; the creation of a similar centre for Uruguay in the National library, Montevideo.

The Provisional International Consultative Committee on Bibliography met in Paris in April. It awarded contracts amounting to about \$5,000 to various individuals and library and documentation associations for a number of tasks.

Works issued or prepared for publication by the Libraries division in 1952 included, in addition to those already mentioned, volumes 1 and 2 of the revived *Index Bibliographicus* compiled by Theodore Besterman (published jointly by U.N.E.S.C.O., Paris, and the Fédération Internationale de Documentation, The Hague). Two supplements to the *UNESCO Bulletin for Libraries* (vol. 6, no. 2–3 and 5–6) were issued separately as a pamphlet entitled *UNESCO Survey of Microfilm Use 1951*.

The U.N.E.S.C.O. Department of Social Sciences organized a meeting of the Co-ordinating Committee on Documentation in the Social Sciences in March, which allocated money granted by U.N.E.S.C.O. as subsidies to various bibliographical publications in this field. The first issue of a new bilingual quarterly, *Current Sociology*, planned to consist of bibliographies and



KINDERGARTEN children with a rabbit borrowed from an animal lending library of the California Junior museum in Sacramento. Designed to let children learn first hand about U.S. wildlife, the library's pets were lent to children and schools at the rate of about 20 per week in 1952

trend reports in alternate issues, comprised an international bibliography of sociology from January 1 to June 30, 1951. A statistical pamphlet, *Basic Facts and Figures*, included useful information on libraries, book production and newspapers. Among other publications were an *International Repertory of Social Science Documentation Centres and Theses in the Social Sciences*, an *International Analytical Catalogue of Unpublished Doctorate Theses, 1940–1950*.

Great Britain and Ireland.—Statistics collected by the Library association showed that in the financial year 1950–51 £2,305,000, or 11d. per head of population, was spent on books for public libraries. The total cost of the service was £9,130,000 or 3s. 7d. a head—a rise of about £500,000. The population served totalled 50,100,000 and the number of books lent for home reading was 314,100,000—an increase of 8,000,000. The number of full-time staff employed was 11,300. In Northern Ireland the number of people still without library service was reduced to 1,500 by the opening in County Antrim of county library branches at Ballycastle and Lisburn. The building of the National Central library in Malot Place, London, the

greater part of which was destroyed in an air raid on April 16, 1941, was reopened on June 20 by the earl of Elgin, who had in 1933 handed to King George V the key of the same building at the original opening ceremony. Interlibrary loans through the National Central library, the Scottish and Irish Central libraries, and the regional library systems totalled 292,000 volumes in 1950-51 (compared with 291,000 in the preceding year).

Replies received up to June to a questionnaire circulated by the Library association to 582 public libraries in April gave the following information on postwar library building: permanent buildings, including prefabricated structures designed as libraries: 4 central libraries and 40 branch libraries completed; extensions and alterations of existing buildings: 77 schemes completed; adaptations as permanent libraries, including conversion of shops, etc.: 109 schemes completed; adaptations as temporary premises: 225 schemes completed; buildings started: 68 schemes, mostly extensions and alterations; buildings projected: 17 schemes licensed; 49 schemes deferred because of refusal of licence. Incomplete figures of real or estimated cost gave a rough total of £1,100,000. The Library association celebrated its 75th anniversary at the annual conference at Bournemouth in April and May under the presidency of L. R. McColvin.

The Library association published in London vol. 15 (1948) of the *Year's Work in Librarianship*. Butterworth Scientific Publications published the third edition of the *World List of Scientific Periodicals Published in the Years 1900-1950*. The Oxford University Press issued Sir Herbert E. Crastor's *History of the Bodleian Library, 1845-1945*.

Commonwealth.—The prime minister's bill for the establishment of the National library of Canada was passed unanimously by the Canadian parliament on May 20. The site itself was still under consideration, but preliminary work was well advanced at the Canadian Bibliographic centre in Ottawa, where the national union catalogue already contained more than 500,000 cards by the end of 1951. A seminar for library training was held in Australia from February to June, attended by librarians from Australia, India, Indonesia and the Philippines. A temporary extension of the overcrowded buildings of the University of Melbourne library, Melbourne, Austr., was opened in Dec. 1951, at a cost of about £30,000. The National Library centre of New Zealand, forming part of that country's National Library service, completed preliminary work on its union list of serials in New Zealand libraries and expected to send the copy to press at the end of 1952.

Other Countries.—The Direction des Bibliothèques de France initiated a scheme for a union catalogue of foreign acquisitions in French libraries, to be established in Paris with regional union catalogues in the provincial university libraries. Leon Carnovsky, professor of library science, The University of Chicago, Ill., made an extensive study tour of European—particularly French—libraries in 1951-52. A seminar on American libraries and librarianship was held in Rome, Florence and Naples, It., from March 24 to April 3 by the Fulbright Commission for Italy and certain other bodies in co-operation with the Italian Library association. Italian statistics classified the libraries of Italy at the beginning of 1952 as follows: state, 37, including 2 national central, 5 national and 12 university libraries; provincial and municipal, 193; public, 1,922; total, 2,152. Martin Bodmer, vice-president of the International Red Cross, bought for his private library in Geneva, Switz., the Rosenbach collection of more than 70 Shakespeare folios and quartos. The Stadtbibliothek (Vadiava), St. Gallen, Switz., celebrated its 400th anniversary. From Vienna, Aus., appeared the first issue of *Biblos*, an Austrian journal of librarianship, edited by J. Stummvoll. The Deutsche Gesellschaft für Doku-

mentation arranged conferences in Hamburg and Kiel, Ger., in September.

Statistics in the Jan. 1952 issue of *Bibliotekar'* gave the holdings of the Lenin State library in Moscow, U.S.S.R., as 14,500,000 vol. (1,000,000 in 1914; 9,600,000 in 1940). The library receives by law three copies of every book published in the union; the statistics presumably include duplicate copies.

The Turkish Library association issued the first number of *Türk Kütüphaneciler Derneği Bülteni*, edited by Adam Ötügen, a well-produced journal covering a wide field of interest. The library of the Greek patriarchate at Alexandria celebrated its millenary. The foundation stone was laid on Jan. 28 of a new Cuban National library building in Havana, and preliminary plans were made in Japan for a new national diet library in Tokyo to house 10,000,000 vol. (F. L. K.)

Libya. An independent kingdom in North Africa, the United Kingdom of Libya is bounded north by the Mediterranean, west by Tunisia and Algeria, south by French West Africa and French Equatorial Africa and east by Egypt and Sudan. Area: 679,340 sq.mi. Pop. (1951 est.): 1,124,000; Berbers, with Arab admixture. Language: Arabic. Religion: mostly Moslem. Chief towns (pop., 1950): Tripoli (140,000); Benghazi (62,300). Ruler: King Idris I; prime minister in 1952: Mahmud Bey Muntasser.

History.—Libya applied for membership in the United Nations on Jan. 3, 1952, but by the end of the year was still on the "waiting list." The U.N. commissioner's task ended with the proclamation of sovereignty on Dec. 24, 1951; in his report to the sixth session of the U.N. general assembly he stated his belief that the machinery devised for the achievement of independence had proved adequate, but that it had not stressed the economic, financial and social problems. The general assembly subsequently requested the Economic and Social Council



LIBYAN WOMAN carrying a prized possession with her to safeguard it from looters during rioting in Tripoli, which followed the general elections of Feb. 1952

to consider the grant of additional assistance to finance Libyan development programs.

General elections were held in each of the three provinces in February. In each the provisional government was confirmed in power and only in Tripolitania was there any disorder. There 17 people were killed in rioting apparently engineered by the opposition. This led to the dissolution of the Congress party, the deportation to Egypt of the well-known politician Bashir Sa'adawi and three of his associates, and the trial and conviction of those who had organized the disturbances. The Libyan parliament met in Benghazi in March and the speech from the throne read by the prime minister, Mahmud Muntasser, paid a tribute to the work of the former administering authorities and the United Nations, and made friendly references to foreign interests. The necessity to improve relationships between the three provinces was recognized; they still tended to regard themselves as separate entities. The king added "amir of Cyrenaica" to his title to show his special relationship to that province. The first meeting of the Libyan council of governors took place in Cyrenaica in August.

The political events in Egypt had no repercussions in Libya although general approval of them was expressed. Titles were abolished in keeping with the action taken in other Arab states. There was some general discussion about treaties with the British and U.S. governments, particularly concerning the military forces of those powers in Libya, but nothing definite in this direction had happened by the time parliament adjourned in August.

The exodus of Jews from the country continued.

Apart from the political disturbances in Tripolitania the kingdom was peaceful. It was still feeling its way while the democratic machinery designed for it was beginning to operate. It could still count on the parental sympathy of the United Nations in finding a way to overcome the lack of financial and material resources and to attain viability and complete independence.

(F. E. ST.)

Education.—(1950). Schools (excluding Italian): primary 141, pupils 23,915, teachers 840; elementary (Cyrenaica only) 45, pupils 5,399, teachers 190; secondary (boys only) 3, pupils 650, teachers 47; community (mixed; Cyrenaica only) 3, pupils 156, teachers 14; Koranic 413 (approximately), pupils 1,930, teachers 413; trade school 1, pupils 30, instructors 17; instructional centres in *zawais* (monasteries) 39, pupils 760, instructors 39. Italian schools: primary 97, pupils 7,279, teachers 347; post-primary 8, pupils 1,152, teachers 104. The number of government Jewish schools decreased rapidly because of emigration. Teachers' training colleges 2, students 120, lecturers 12.

Finance.—Budget (1950–51, actual): revenue £2,574,590, expenditure £2,950,590. Monetary unit: Libyan pound, at par with sterling, divided into 100 piastres.

Foreign Trade.—*Tripolitania* (1951 est.): imports £6,884,000; exports (including re-exports) £2,411,000. *Cyrenaica* (1949): imports £1,894,400; exports £1,565,400. Main imports included: metals; manufactured goods; tea; wine and spirits. Main exports included: esparto grass; hides and skins; goat and camel hair; wool and woollen goods; cattle, sheep and goats; vegetable oils; cigarettes and tobacco; dried and fresh fruit and vegetables; tunny fish; worked aluminum.

Lie, Trygve (1896–), Norwegian diplomat and United Nations official, was born on July 16 in Oslo. Between 1922 and 1940 he was identified with the Norwegian Labour party as its legal adviser and later as a member of its national council. From 1935 to June 1939 he was minister of justice, then minister of commerce; after the German invasion of Norway he went with the exile government to London, serving as its minister of foreign affairs. He was reappointed minister of foreign affairs of Norway in 1945. He served as chairman of the commission that drafted the charter for the Security council at the United Nations organization conference at San Francisco, Calif., and at the London meeting of the U.N. general assembly he was elected secretary-general on Feb. 1, 1946.

In his capacity as top U.N. administrative official Lie sought constantly to steer a neutral course between the aims of the

U.S.S.R. and its satellites and those of the western nations. He was instrumental in the application of U.N. sanctions against the North Koreans when they invaded South Korea, but his principal U.N. role was that of mediator in the effort to bring about peace in Korea. In Feb. 1951 Lie began serving a three-year extension of his original five-year term as secretary-general of the U.N., although he was not recognized by Russia.

Reviewing accomplishments of the U.N. general assembly session held at Paris, Fr., from Nov. 6, 1951, to Feb. 5, 1952, Lie declared on Feb. 8 that the danger of general war was "much less" than it had been a year before. Later, however he expressed pessimism about the outlook for a truce agreement in Korea. On July 3, 1952, he addressed the Austrian parliament in Vienna, pledging that he would do all he could to bring about Austria's admission to the U.N.

On Nov. 10 Lie submitted his resignation as secretary-general and proposed that a successor be selected who had the support of all the permanent members of the Security council and could therefore expedite a truce in Korea. Lie's resignation, however, would not become effective until the successor was agreed upon.

Liechtenstein. A small independent principality between Switzerland and Austria, Liechtenstein has an area of 61.4 sq.mi. Pop. (1951 est.): 14,000. Language: German. Religion: Roman Catholic. An elected *Landtag* of 15 members appoints the government. Capital: Vaduz (pop., Dec. 1950, 2,700). Ruler: Landesfürst (sovereign prince) Franz Josef II; prime minister (from Sept. 3, 1945): Alexander Frick.

Education.—Schools (1950–51): primary 14, pupils 1,658, teachers 50; secondary 2, pupils 156, teachers 8.

Finance.—Budget: (1950 actual) revenue 5,031,751 fr., expenditure 6,108,807 fr.; (1952 est.) revenue 5,540,500 fr., expenditure 5,560,600 fr. Public debt (Dec. 31, 1950): 8,033,800 fr. Included since Jan. 1924 in the Swiss customs union, Liechtenstein uses Swiss currency. The exchange rate in Aug. 1952 was 4.289 fr. to the U.S. dollar.

Agriculture.—Chief products: wheat, fruit, wine. Livestock (April 1950): cattle 5,658; pigs 3,397; sheep 699; goats 694; horses 340; chickens 32,160.

Industry.—Cotton weaving and spinning, leather goods, pottery, artificial teeth.

Life Insurance: see INSURANCE.

Life Statistics: see BIRTH STATISTICS; DEATH STATISTICS; INFANT MORTALITY; SUICIDE STATISTICS.

Limes: see FRUIT.

Linen and Flax. Flax fibre production increased in most producing countries of the world during 1951. In western Europe, the largest producer, France, increased its output by 31%; while Belgium, the second largest producer, enjoyed an increase of 40%. Although the Netherlands was the third largest producer, it recorded the largest percentage increase, 62%; whereas the United Kingdom, fourth largest producer, had an increase of only 12%. There were no reports on production in U.S.S.R. which, in the period 1934–38, accounted for four-fifths of total world production of flax fibre.

The British linen industry shared in the general European textile recession in 1951. Government contracts for linen fabrics in connection with the rearmament program offered some relief, but the rapid advance in raw material prices in 1951 aggravated by wage increases in all sectors of production led to higher prices and decreasing international demand. Exports of linen piece goods from the United Kingdom during July 1952 were valued at £870,121, compared with £1,153,171 for the cor-

Table I.—Flax Fibre Production in the Principal Producing Countries

Country	(Thousand metric tons)				
	1951	1950	1949	1948	1934–38
France	37.4	28.6	25.6	22.0	20.7
Belgium	28.5	20.3	22.1	19.4	21.7
Netherlands	25.4	15.7	20.6	18.4	12.0
United Kingdom	12.0	10.1	11.2	10.2	5.0
U.S.S.R.	—	—	—	—	640.0

Table II.—Principal Importing Countries of British Linen Goods

Country	(Thousand sq.yd.)		
	1952*	1951*	1950*
U.S.A.	10,747	16,703	14,444
Brazil	2,284	2,328	2,166
Australia	1,637	3,687	2,212
Cuba	1,390	1,767	1,090
Union of S.A.	1,246	1,815	1,138
New Zealand	1,156	1,038	898

*First nine months only.

responding month of 1951. Exports to the United States during July 1952 were valued at £207,838, compared with £404,794 in July 1951. Exports to Australia also registered a substantial decline, but those to Brazil, valued at £107,227 in July 1952, were almost double those of the same month of the previous year. The principal importing countries of British linen goods in order of importance are shown in Table II.

Promotional activities of the linen industry continued in 1952 with an estimated payment of \$42,000 by the Northern Ireland ministry of commerce to the Irish Linen guild as a grant-in-aid to support the cost of publicity in the United States during the first eight months of 1952. This supplemented the guild's main source of income, the linen industry itself. (I. L. BL.)

Lions Clubs, International Association of: see SOCIETIES AND ASSOCIATIONS, U.S.

Liquors, Alcoholic. Federal excise taxes on distilled spirits were increased from \$9.00 to \$10.50 per proof gallon effective Nov. 1, 1951. After that date, gallonage sales declined sharply and as a result the new tax rate failed to meet revenue expectations. Congress premised its \$1.50 increase in rate on the assumption of an estimated gallonage sales level of 174,000,000 tax gallons which was to yield \$1,822,000,000 in the first full year of the tax. In the first ten months of its operation, ending Aug. 1952, revenue collections amounted to \$1,291,400,000 and it appeared that the full year's revenue might fall below 1950-51 collections at the \$9.00 tax.

During the same period sales declined sharply. Total gallonage tax paid for the first ten months at the higher rate was 14.2% less than that for the corresponding months ending Aug. 1951 and 2.8% below the average for the same months in the years before the Korean war. Declining gallonage sales also caused a reduction in state tax collections from distilled spirits as well as in federal and state income tax collections. The \$10.50 federal excise tax alone amounted to 43% of the average selling price for a fifth of 86.8 proof blended whisky. Combined federal, state and local taxes on the bottle amounted to 56% of the selling price.

Consumption, withdrawals and production of distilled spirits fell off sharply in the fiscal year 1952 from levels established in the preceding year. To develop inventories large enough to ensure adequate whisky supplies in the event of another full-scale war, spirits production was stepped up in fiscal 1951 by 68%. By the close of fiscal 1951, distilled spirits in government-bonded warehouses amounted to 901,000,000 gal. compared with 708,000,000 original entry gallons at the close of fiscal 1950.

Production of distilled spirits was accordingly curtailed dur-

Table I.—Production of Distilled Spirits

	(In proof gallons)		Per cent change 1951 to 1952	Average, fiscal 1948-50	Per cent change, 1948-50 to 1952
	Fiscal 1952	Fiscal 1951			
Whisky	103,544,171	205,702,460	-49.7	132,650,931	-22.0
Neutral spirits	98,387,710	173,025,280	-43.1	86,271,768	+14.0
Brandy	9,521,040	11,584,486	-17.8	14,664,740	-35.1
Gin	8,148,666	8,962,289	-9.1	4,121,516	+97.7
Rum	1,911,838	2,030,180	-5.8	1,926,009	-0.7
Vodka	362,007	148,101	+144.0	*	*
Total	221,875,432	401,452,796	-44.7	239,634,964	-7.4

*Previously included in spirits.

Table II.—Taxpaid Withdrawals of Distilled Spirits

	(In tax gallons)		Per cent change 1951 to 1952	Average, fiscal 1948-50	Per cent change, 1948-50 to 1952
	Fiscal 1952	Fiscal 1951			
Whisky	64,909,086	76,442,149	-15.1	55,592,499	+16.8
Neutral spirits	65,469,233	86,588,794	-24.4	82,573,653	-20.7
Brandy	2,674,788	2,822,047	-5.2	1,913,263	+39.8
Gin	8,217,305	8,375,304	-1.9	3,974,707	+106.7
Rum	302,724	289,340	+4.6	296,120	+2.2
Vodka	219,214	107,554	+103.8	*	*
Total	141,792,350	174,625,188	-18.8	144,350,242	-1.8

*Previously included in spirits.

ing fiscal 1952. Total output amounted to 221,875,432 gal., a reduction of 44.7% from the 401,452,796 gal. turned out in fiscal 1951, and of 7.4% from the average of 239,634,964 gal. produced in the fiscal years 1948-50. Despite cutbacks in production, however, stocks of distilled spirits remaining in internal revenue bonded warehouses as of June 30, 1952, amounted to 937,155,887 original entry gallons—4% more than the record inventory of fiscal 1951.

Taxpaid withdrawals of all distilled spirits in fiscal 1952 were 141,792,350 gal., 18.8% less than the 174,625,188 gal. withdrawn in fiscal 1951, and 1.8% less than the average of more than 144,000,000 gal. in the fiscal years 1948-50. These declines were attributable both to the excessive inventories accumulated by wholesalers and retailers in fiscal 1951, and to declining consumption.

In fiscal 1952, bonds and straights accounted for 30.2% of total whiskies bottled, while spirit blends accounted for 69.8% of the total. Whiskies of all types amounted to 85% of total distilled spirits bottled in fiscal 1952. Gins accounted for 8.3% of bottled output, brandy for 1.7%, cordials and liqueurs for 3.3%, vodka for 1%, and other items, including rum, for .7%.

Table III.—Bottled Output of Distilled Spirits

	(In wine gallons)		Per cent change 1951 to 1952	Average, fiscal 1948-50	Per cent change, 1948-50 to 1952
	Fiscal 1952	Fiscal 1951			
Whisky					
Bonds and straights	41,118,381	44,416,572	-7.4	23,750,672	+73.1
Blended	94,958,096	123,092,191	-22.9	120,089,107	-9.3
Total	136,076,477	167,508,763	-18.8	143,839,779	-5.4
Brandy	2,671,726	2,832,056	-5.7	1,778,807	+50.2
Gin	13,319,943	17,494,804	-23.9	12,093,482	+10.1
Cordials and Liqueurs	5,353,617	5,411,974	-1.1	4,062,053	+31.8
Vodka	1,540,910	995,696	+54.8	*	*
Miscellaneous	1,052,577	1,121,064	-6.1	1,152,702	-7.7
Total	160,015,250	195,364,357	-18.1	162,926,823	-1.8

*Previously included in miscellaneous. †Not comparable.

Scotch whisky, imported from the United Kingdom, amounted to 9,600,000 gal. in fiscal 1952, Canadian whisky imports totalled 7,200,000 gal., and imports of brandy amounted to 902,362 gal. Imports of rum in fiscal 1952 amounted to 1,960,000 gal., of which 1,400,000 gal. originated in Puerto Rico.

(A. J. LI.)

Liquor Control.—The most dramatic, and perhaps the most important development in the field of liquor control in the United States during 1952, was the passage, by congress, and approval by the president, of the so-called McGuire act, which legalized fair trade. Fair trade is the name of the system under which a distiller or brand owner makes a contract with a retailer for sales by the retailer at not less than a minimum price; in other words it puts a floor under prices to the consumer. Under this system a contract with one retailer, with proper notice, binds all retailers.

Prior to the passage of this act, the supreme court of the United States had declared, in the so-called New Orleans Schwegman case, that a minimum price contract made by a distiller with one retailer did not bind all retailers. This made separate contracts with each retailer necessary. The McGuire act gave to the individual states the power to pass fair trade laws, thus restoring the situation to its original status.

Fair trade may be either compulsory or voluntary. If compulsory the state control authority has power of enforcement. If voluntary, the distiller may enforce his contracts through the courts.

The passage of the McGuire act did not, however, end the controversy. The constitutionality of the new law had yet to be passed upon, and the opponents of the system had not given up. Difficulties arose in enforcement. Some distillers listed as many as 60 items in their contracts while others listed only 3 or 4. Enforcement was not only difficult when a variety of items was involved, but was also difficult with respect to a strong retailer whose business added materially to total volume.

Federal price control in the liquor field antedated 1952, but was greatly modified in that year. Freeze controls (prices frozen as of a certain date) were succeeded by formula controls. Controls were lifted, after the early months of the year, on off-premise sales (package sales) of hard liquor and wine. On all alcoholic liquors sold by the drink, however, prices remained under control, and posting of prices was required. Enforcement was not too difficult, since in most areas prices were below ceiling prices. However, many retailers complained of difficulty in figuring the allowable markups. Confusion was caused by formulas which were of necessity somewhat complicated. (See also BREWING AND BEER; INTOXICATION, ALCOHOLIC; WINES.)

(M. Lb.)

Literary Prizes.

The following is a selected list of literary prizes awarded during the year of

1952.

UNITED STATES.—ACADEMY OF AMERICAN POETS.—\$5,000 fellowship to Padraic Colum.

AMERICAN ACADEMY OF ARTS AND LETTERS and NATIONAL INSTITUTE.—Gold medal for fiction to Thornton Wilder; gold medal for history and biography to Carl Sandburg.

AMERICAN ACADEMY OF ARTS AND LETTERS.—Prix de Rome fellowship of \$3,000 to William Styron.

AMERICAN POLITICAL SCIENCE ASSOCIATION, WOODROW WILSON FOUNDATION AWARD.—For the best book on government and democracy, to Samuel Lubell for *The Future of American Politics*.

AMERICAN POLITICAL SCIENCE ASSOCIATION, FRANKLIN D. ROOSEVELT FOUNDATION AWARD.—For an outstanding book on government and human welfare, to Josué de Castro for *The Geography of Hunger*.

AMERICAN POLITICAL SCIENCE ASSOCIATION, WILLKIE MEMORIAL-FREEDOM HOUSE AWARD.—For the best book in the field of international relations, to George Kennan for *American Diplomacy, 1900-1950*.

ANISFIELD-WOLF AWARDS.—Two awards of \$1,000 each, administered by the *Saturday Review of Literature*, focusing attention on racial relations, to Laurens van der Post for *Venture to the Interior* and Brewton Berry for *Race Relations*.

ATHENAEUM OF PHILADELPHIA AWARD.—For an outstanding literary achievement by a Philadelphian, to Arthur Hobson Quinn for *The Literature of the American People*.

BANCROFT PRIZES.—\$2,000 each annually for the best two books on American history, American diplomacy or American international relations, to Merlo Pusey for *Charles Evans Hughes* and C. Vann Woodward for *Origins of the New South*.

BOLLINGEN PRIZE IN POETRY.—\$1,000 prize awarded annually by Yale University library, to Marianne Moore for *Collected Poems*.

JOHN BURROUGHS MEDAL.—For a book of literary and scientific merit which stirs public interest in natural history, to Rachel L. Carson for *The Sea Around Us*.

CAREY-THOMAS AWARD.—Sponsored annually by *Publishers' Weekly* for the most distinguished publishing achievement of the year, to Houghton Mifflin Co. for *Life in America* by Marshall B. Davidson.

CATHOLIC WRITERS GUILD OF AMERICA, GOLDEN BOOK AWARDS.—To Richard Sullivan for *Fresh and Open Sky* (fiction), Thomas Merton for *Ascent to Truth* (spiritual) and Edmund Walsh for *Total Empire* (non-fiction).

CHRISTOPHERS' AWARD.—\$5,000 for works of enduring spiritual significance, to Fulton Oursler for *The Greatest Book Ever Written*.

COMMONWEALTH CLUB OF CALIFORNIA.—Gold medals to William Saroyan for *Tracy's Tiger* (fiction) and to Eric Hoffer for *The True Believer* (nonfiction).

FRIENDS OF AMERICAN WRITERS.—A \$1,000 annual award for the encouragement of young authors from the midwest, to Vern Sneider for *The Teahouse of the August Moon*.

GUGGENHEIM FELLOWSHIPS.—Among those awarded \$3,000 fellowships were Douglas Southall Freeman, Julian Boyd, Wallace Stegner, Hannah Arendt, F. W. Dupee, Jay Leyda, Frederick A. Pottle; and for creative writing, André Gide, Edgar A. Mitchell, John Berryman, Hortense Calisher, Robert S. Fitzgerald, William Goyen, Vladimir Nabokov, Byron Herbert Reece, Adrienne Rich and Richard P. Wilbur.

HARPER'S EUGENE F. SAXTON FELLOWSHIPS.—Edith Stuurman, for the completion of a volume of verse; Katherine E. Baccaro and Evan S.

Connell, Jr., for the completion of novels; Philip L. Ralph for the completion of a study of western civilization; and Eugenie Clark for the completion of a work in popular science.

HILLMAN FOUNDATION.—A \$500 award to Alan Barth for *The Loyalty of Free Men*. Similar awards in fields of journalism and magazine publication to Carl T. Rowan of the *Minneapolis Tribune* and Arthur D. Morse for an article in *McCall's Magazine*.

HOUGHTON MIFFLIN LITERARY FELLOWSHIP.—\$2,400 for financial assistance to promising writers, to Madison A. Cooper, Jr., for a first novel.

JEWISH BOOK COUNCIL.—Samuel H. Daroff fiction award, \$250 to Zelda Popkin for *Quiet Street*. Isaac Siegel Memorial award, \$250 for the best juvenile to Mrs. Sydney Taylor for *All-of-a-Kind Family*. Harry Kovner Memorial awards, \$100 each to A. M. Klein for *Hath Not a Jew and Poems*; to Mordecai Jaffe for *Anthology of Hebrew Poetry*; and to Hillel Bavli for his cumulative contributions to Hebrew poetry.

LAUTERBACH AWARD.—\$1,000 for the most substantial contribution to the cause of civil liberties, to William O. Douglas for his lecture "The Black Silence of Fear" published in the *New York Times Magazine*.

LIPPINCOTT FICTION PRIZE FOR YOUNG NOVELISTS.—To Eugene Walter for the manuscript of *The Untidy Pilgrim*.

LIVING CATHOLIC AUTHORS AWARD.—To Jacques Maritain for *Man and the State* (nonfiction) and to Graham Greene for *The End of the Affair* (fiction).

MYSTERY WRITERS OF AMERICA AWARDS.—Honorary "Edgars," busts of Edgar Allan Poe, awarded for mystery writing: for best first mystery, to Mary McMullen for *Strangle Hold*; for outstanding short story, to John Collier for *Fancies and Goodnights*; for true crime writing, to St. Clair McKelway for *True Tales from the Annals of Crime and Rascality*.

NATIONAL BOOK AWARDS.—Gold medals awarded by the entire book industry for distinguished fiction, to James Jones for *From Here to Eternity*; for nonfiction, to Rachel L. Carson for *The Sea Around Us*; and for poetry, to Marianne Moore for *Collected Poems*.

NATIONAL INSTITUTE OF ARTS AND LETTERS.—\$1,000 grants each to six nonmember writers for encouragement to young artists of ability and as practical recognition for more established authors: Saul Bellow, Alfred Hayes, Theodore Roethke, Elizabeth Spencer, Peter Taylor and Yvor Winters. (See also under *American Academy of Arts* for gold medal winners.)

NEW YORK DRAMA CRITICS CIRCLE AWARD.—Honorary awards given by the New York metropolitan critics for best play, to John Van Druten for *I Am a Camera* (based on Christopher Isherwood's *Berlin Stories*); best musical, *Pal Joey*; best foreign play, to Christopher Fry for *Venus Observed*.

PARENTS' MAGAZINE MEDAL.—For the outstanding book for parents, to Edith G. Neisser for *Brothers and Sisters*.

POETRY AWARDS.—Harriet Monroe Memorial prize of \$500, to Robert Lowell.

POETRY AWARDS OF CALIFORNIA.—\$1,250 to Carleton Drewry for *A Time of Turning*.

POETRY SOCIETY OF AMERICA AWARDS.—Gold medal and Alexander Drouzkoy Memorial award of \$100 to A. M. Sullivan; William Rose Benét Memorial award of \$100 to David McCord; Edna St. Vincent Millay Memorial award of \$100 to Sara Henderson Hay for *Delicate Balance*; Ridgely Torrence Memorial award of \$100 to Charles E. Eaton for *The Shadow of the Swimmer*; Poetry Chap-Book award of \$100 to Phyllis Bartlett for *Poems in Process*; Reynolds Lyric award of \$200 to Marcia Lee Anderson and Oliver Evans; annual awards, first prize, \$100, to Edna L. S. Barker and second prize, \$50, to Kimball Flaccus.

RUNG AWARD.—\$5,000 for novel emphasizing Christian living, to Elizabeth Patton Moss for *The Iranian*.

TAMIMENT AWARDS.—\$500 each to Whittaker Chambers for *Witness* and Merlo Pusey for *Charles Evans Hughes*.

NOBEL PRIZE FOR LITERATURE.—(See article NOBEL PRIZES.)

PULITZER PRIZES.—(See article PULITZER PRIZES.)

U.S. Children's Books.—CALDECOTT MEDAL.—For the year's most distinguished American picture book for children, to Nicolas Mordvinoff for illustrations of *Finders Keepers*.

CHILD STUDY AWARD.—No award in 1952.

CHARLES W. FOLLETT AWARD.—A prize of \$3,000 and a gold medal given by Wilcox and Follett, publishing company, for a worthy contribution to children's literature, to Reba Paef Mirsky for *Thirty-One Brothers and Sisters*.

HERALD TRIBUNE SPRING BOOK FESTIVAL AWARDS.—Three prizes of \$200 each: for a picture book, to Ann Nolan Clark for *Looking-for-Something*; for ages 8 to 12, to Natalie Savage Carlson for *The Talking Cat*; for older children, to John Reese for *Big Mutt*.

JUNIOR BOOK AWARDS.—Presented by the Boys' Clubs of America to authors of books which were favorites of boys in Boys' clubs throughout the United States. Medals to Wilbur J. Granberg for *Johnny Wants to Be a Policeman*; Sydney E. Fletcher for *The Cowboy and His Horse*; Alfred Powers for *A Long Way to Frisco*; Michael Gross for *Phil Sterling, Salesman*; Katherine B. Shippen for *Passage to America*; Hy Turkin and S. C. Thompson for *The Official Encyclopedia of Baseball*; Bob Allison and Frank Ernest Hill for *The Kid Who Batted 1,000*; Malcolm Johnson for *Bullard of the Space Patrol*; Holling C. Holling for *Minn of the Mississippi*; and Leland Silliman for *Bucky Forrester*.

JOHN NEWBERRY MEDAL.—For the year's most distinguished contribution to American literature for children, to Eleanor Estes for *Ginger Pye*.

ZONDERVAN JUVENILE AWARD.—\$1,000 prize for Juvenile Christian Fiction contest, to Craig Massey for *Flaming Valley*.

Canada.—GOVERNOR GENERAL'S AWARDS.—Silver medals awarded to Morely Callaghan for *The Loved and the Lost* (fiction); Josephine Phelan for *The Ardent Exile* (creative nonfiction); Frank MacKinnon for *The Government of Prince Edward Island* (academic nonfiction); Charles Bruce for *The Mulgrave Road* (poetry); John Hayes for *A Land Divided* (juvenile).

LEACOCK MEDAL FOR HUMOUR.—To Jan Hilliard for *The Salt Box*.

LORNE PIERCE MEDAL.—Awarded by the Royal Society of Canada for achievement of special significance and conspicuous merit in imaginative

or critical literature, to Hugh McLennan, author of *Each Man's Son*.
PRESIDENT'S MEDAL.—To Farley Mowat for "Lost in the Barrens" (best short story by a Canadian citizen in an English-language magazine).

TYRRELL MEDAL.—Awarded by the Royal Society of Canada for research in Canadian history, to C. B. Sissons, author of *Egerton Ryerson: His Life and Letters*. (A. J. RR.)

Great Britain.—Among the awards during 1952 were: the JAMES TAIT BLACK MEMORIAL PRIZES (about £250 each) to Noel G. Annan for *Leslie Stephen* (biography) and to W. C. Chapman-Mortimer for *Father Goose* (fiction); the CARNEGIE MEDAL (awarded by the Library association for an outstanding book for children) to Cynthia Harnett for *The Wool-puck*; the ROSE MARY CRAWSHAY PRIZE (£100, for a critical or historical work on English literature by a woman) to Ethel Seaton for her edition of Abraham Fraunce's *Arcadian Rhetorike*; the SOMERSET MAUGHAM AWARD (about £250 for a British writer under 30, to be used mainly for foreign travel) to Francis King for his novel *Dividing Stream*; and the DENYSE CLAIRON MEMORIAL PRIZE for the year's best translation from the French, to Denise Floliot for her translation of *Maira* by Julien Green. The Arts Council of Great Britain offered two prizes of £225 each for a first book of original English verse by a living poet published during the period Jan. 1, 1951, to June 30, 1953, and for a book of original English verse by a living poet published during the same period. (X.)

France.—Among the numerous literary prizes awarded in France during 1952 were: GENS DE LETTRES to Claude Aveline for his work as a whole and to Michiel de Saint Pierre for *La Mer à boire*; CRITIQUES to Georges Borgeaud for *Le préau*; VILLE DE PARIS to Jean Rostand for his work as a whole; MONACO to Henri Troyat for his work as a whole; AMBASSADEURS to André Billy for *Saint-Beuve*; GRAND PRIX DE LA MER ET DE L'OUEST-MER to Joseph Peyré for *Sang et Lumière* and *Guadalquivir*; GUILLAUME APOLLINAIRE to Alain Bosquet; ALBERT LONDRES to Georges Menant; COURTELINE to Pierre Daninos; CHRONIQUE PARISIENNE to Carmen Tessier; DEUX MAGOTS to René Jean Clot; ROMAN D'AVENTURES to Jean Kery; and PRIX DES NEUF DE DEAUVILLE to Emmanuel Berl. (A. PR.)

Literature: see AMERICAN LITERATURE; BOOK PUBLISHING; CANADIAN LITERATURE; ENGLISH LITERATURE; FRENCH LITERATURE; GERMAN LITERATURE; ITALIAN LITERATURE; LATIN-AMERICAN LITERATURE; LITERARY PRIZES; NOBEL PRIZES; PULITZER PRIZES; RUSSIAN LITERATURE; SPANISH LITERATURE.

Lithuania. From Feb. 16, 1918, to Aug. 3, 1940, when it was annexed by the U.S.S.R., Lithuania, one of the Baltic states of northeastern Europe, was an independent republic. Area (including Klaipeda or Memel and Vilnius or Wilno territories): 25,173 sq.mi. Pop.: (Oct. 1939 est., including Vilnius, but excluding Klaipeda) 2,970,000; (1950 est., including Klaipeda) c. 3,000,000. Language: Lithuanian, Polish and Russian. Religion: Roman Catholic and Greek Orthodox. Chief towns (pop., 1938 census): Vilnius (cap., Oct. 1939 est., 207,800); Kaunas (152,365); Klaipeda (47,189); Siauliai (31,299). Chairman of the presidium of the supreme soviet in 1952: Justas I. Paleckis; chairman of the council of ministers, Mečislovas A. Gedvilas.

History.—On the 12th anniversary of the incorporation of Lithuania into the U.S.S.R., the Communist press published articles emphasizing the "historic changes in the life of the Lithuanian people." The Communist party membership amounted to 36,000. During the first five-year plan, 1946–50, wartime ruins were fully restored and production was higher than in 1940. The output of industry in 1950 was 87.5% larger than in 1940. In 1951 industry's share in the national economy amounted to 56%, compared with 35% in 1945. For the first time Lithuania began to produce metalworking machine tools, turbines and electrical equipment. There were three times as many employed in industry as in 1940.

As part of the five-year plan, 1950–55, a hydroelectric power station was to be built on the Niemen river at Kaunas and the port of Klaipeda was to be enlarged to accommodate larger sea-going vessels. As a result of the merger of small collective farms into bigger ones, the number of *kolkhozy* was reduced between July 1950 and July 1952 from 6,549 to about 3,000.

On May 10 *Izvestia* reported that a "Defense of Peace" conference of churchmen of the Soviet Union had been called at Zagorsk by the patriarch of Moscow. The presence of Mgr. Kazys Paltarokas, Roman Catholic bishop of Panevezys, refuted the rumour of April 1950 that he had died in a soviet prison.

The Soviet Telegraphic agency, Tass, reported from Wilno on Feb. 26 that in "districts with a Polish majority" Polish public libraries existed, lectures in Polish were being organized and Polish talking pictures were shown in theatres. According to *Sovietskaya Litva* there were 277 schools in the province of Wilno in which teaching was in Polish. (See also ESTONIA. LATVIA.)

Education.—Schools (1951): primary c. 3,200, pupils 459,000; secondary and technical c. 200, pupils 135,000; institutions of higher education 12, students 12,000.

Finance.—Budget (1952 est.): balanced at 1,471,051,000 roubles. (K. SM.)

Liver Disorders: see STOMACH AND INTESTINES, DISEASES OF THE.

Livestock. U.S. farms reported an increase in livestock at the beginning of 1952, compared with a year earlier, in all classes except dairy cows and, as usual, horses and mules. Value of livestock on U.S. farms reached a record of \$19,600,000,000 on Jan. 1, 1952, up from the 1951 record of \$17,100,000,000.

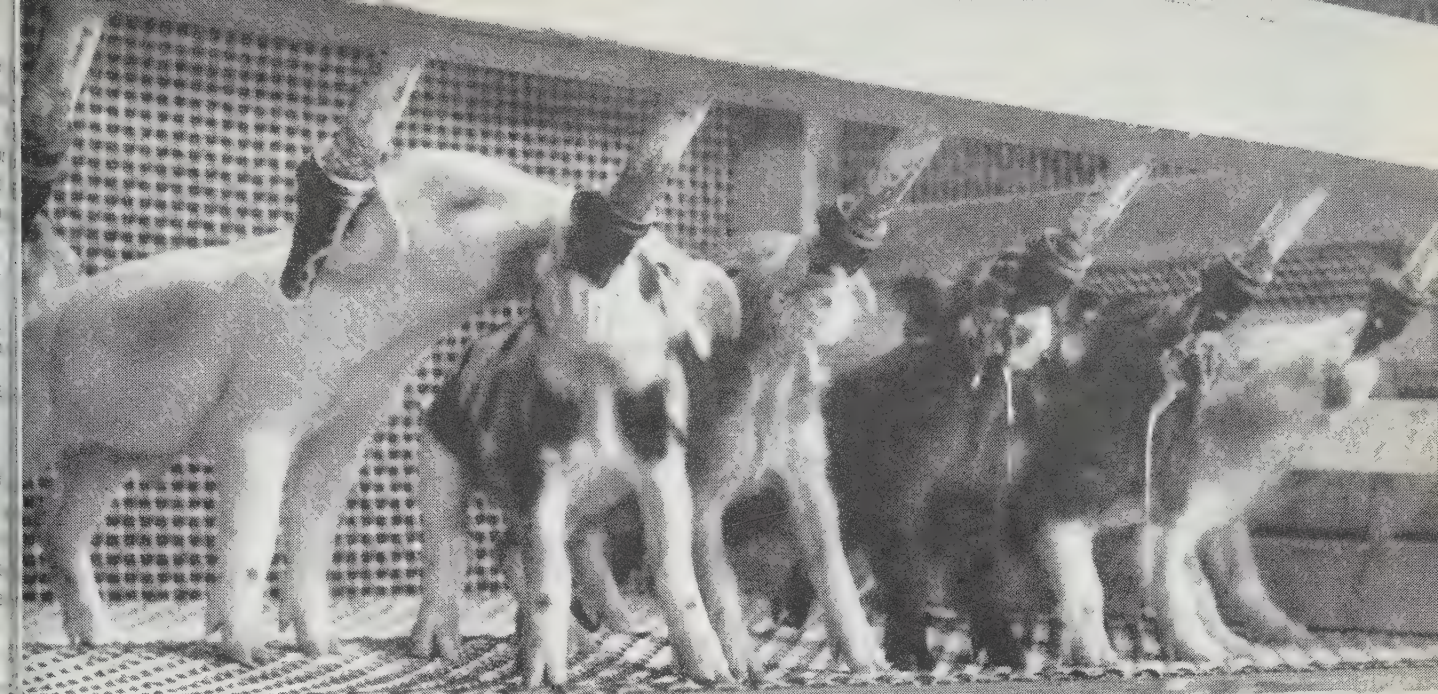
Cattle of the beef type, however, were outstanding in that they increased by about 6,000,000 head, and a further increase of significant magnitude to a total cattle level of approximately 93,000,000 occurred in 1952, leaving farmers, packers, meat consumers and economists with a major question, after four years of expansion, as to the nearness of the peak of the cattle cycle. There was agreement that cattle slaughter increased in 1952, with larger numbers to be marketed in 1953. Record numbers were on feed in midwestern feed lots during the year but the high price paid for feeder cattle late in 1951 or early in 1952, along with decline in fat cattle prices, meant little profit to feeders in 1952. It did mean, however, that the price which farmers were willing to pay for replacement feeder and stocker cattle was sharply lower with a widening margin compared with fat cattle, thus making more likely profitable feeding operations in 1953. The average price to farmers for beef cattle in September was \$23.80 per hundredweight compared with \$29.20 per hundredweight a year earlier.

U.S. cattlemen were very uneasy after an outbreak of foot-and-mouth disease in Canadian cattle in Saskatchewan in February, with recurrence in April. Though it was brought under control and trade in livestock was restored within Canada in late summer, strict exclusion of movement to the U.S. continued. Moreover, \$10,000,000 was appropriated for a laboratory to study the disease, to be located on Plum Island, off the Connecticut coast. The ban on importing cattle from Mexico was lifted in September and Mexico set an export quota of 500,000 head per year. Mexico in September reduced the 15% ad valorem surtax on live steers by about two-thirds.

The 1952 pig crop consisted of 56,607,000 spring pigs and an indicated 36,500,000 fall pigs, or a total of about 93,100,000 head, a sharp decline from the 102,189,000 head of 1951. Preliminary indications suggested a total of less than 90,000,000 head in 1953. The continued decline was associated with an unfavourable corn-hog ratio; i.e., relatively high corn prices and increasingly weak prices for hogs, a situation which it was anticipated would be little improved by the larger corn crop of 1952. Hog prices behaved in an abnormal manner in 1952.

Table 1.—Livestock on U.S. Farms
(In 000 head)

	Jan. 1, 1952	Jan. 1, 1951	Average 1941–50
Horses	4,370	4,993	8,130
Mules	1,923	2,074	3,100
Cattle (including calves)	88,062	82,025	79,460
Milk cows	23,407	23,722	25,900
Sheep	31,725	30,635	43,750
Hogs	63,903	62,852	61,990
Chickens	453,498	442,657	486,800
Turkeys	5,835	5,091	6,320



INFANT PIGS feeding on a synthetic sow's milk which made it possible to remove piglets from the sow 48 hr. after birth and reduce mortalities to 5% from an average of 18% to 35%. The new food was developed at the laboratories of Charles Pfizer & Co., Brooklyn, N.Y., in 1952

Table II.—Number of Livestock in Specified Areas
(in 000 head at beginning of year)

Areas	Cattle		Hogs		Sheep	
	1952	1951	1952	1951	1952	1951
North America . . .	123,100	116,500	82,000	80,000	40,300	38,900
Europe	100,600	99,500	75,700	72,300	120,700	118,400
U.S.S.R.	58,800	57,200	26,700	24,100	93,000	86,000
Asia	291,200	287,100	78,000	77,700	161,100	153,600
South America . . .	131,900	132,400	36,600	36,500	125,700	120,800
Africa	95,200	95,200	4,100	4,200	113,500	110,900
Oceania	20,300	20,600	1,900	1,800	154,000	149,900
Estimated world total.	821,100	808,500	305,000	296,600	808,300	778,500

The usual recession of late winter was deeper and more prolonged than usual, followed by very abrupt recovery in late spring without, however, the usual late summer peak and with deeper declines in the autumn than were expected considering the decreased numbers for market.

Sheep made slow progress in their comeback from record low numbers. Though lamb and mutton prices continued favourable, wool prices declined sharply.

World cattle, which numbered an estimated 821,100,000 head at the beginning of 1952, as compared with 743,100,000 before World War II, increased further during 1952. Reductions were mostly in some drought areas, chiefly in the southern hemisphere. The Australian cattle industry had a bad year, particularly in the Northern Territory. Large increases, other than in the U.S., were in India (4,000,000) and Brazil (4,000,000).

World hog numbers were estimated at 305,000,000 head at the beginning of 1952, 3% more than a year earlier and 5% above prewar levels. Western Europe had recovered prewar levels, but Argentinian pork production was reduced by drought damage to feed crops. No increase was anticipated in 1952, mostly because demand was not sufficient to provide incentive prices to counterbalance higher feed costs.

As of the beginning of 1952 the sheep population of the world was 808,300,000 head, 4% more than in 1951 and 3% more than the previous record number of 782,000,000 head in 1942. It was considered probable that the upward trend in numbers existing since 1947 ended in 1952, partly because of drought but also as a result of the sharp break in wool prices. (See also AGRICULTURE; MEAT.)

(J. K. R.)

Livestock Shows: see SHOWS.

Local Government: see MUNICIPAL GOVERNMENT.

Lodge, Henry Cabot, Jr. (1902–), U.S. senator, Mass., the grandson of Sen. Henry Cabot Lodge who led the opposition to U.S. entry into the League of Nations. He was graduated from Harvard university in 1924 and worked first with the *Boston Evening Transcript*, then with the *New York Herald Tribune* until 1932. He was a representative to the Massachusetts general court from 1933 to 1936 and in the latter year was elected U.S. senator from Massachusetts on the Republican ticket. Re-elected for another term in 1942, he resigned in Feb. 1944 to go on active duty with the U.S. army, and saw combat in North Africa and Italy. He was re-elected to the senate in 1946 for the term 1947–53. His voting record there revealed no clear trend, although he was generally typed as a "liberal Republican" and supported a number of New Deal and Fair Deal legislative measures.

In Nov. 1951 Lodge was picked by a group of Republican leaders to direct the Eisenhower-For-President drive. He directed the strategy that defeated Robert A. Taft on the key issue of disputed delegations at the Chicago, Ill., convention in July 1952 and led directly to Dwight D. Eisenhower's nomination on the first ballot. Lodge himself was defeated in the election for the senate on Nov. 4, but on Nov. 29 President-elect Eisenhower named him as U.S. representative to the United Nations, to succeed Warren R. Austin.

London. The early part of the year 1952 in London was inevitably overshadowed by the sudden death of King George VI at Sandringham in the early hours of Feb. 6. Grief and shock at the loss of the king did not exclude lively sympathy and eager loyalty for the new queen; and the pleasure of the crowds that witnessed the splendid ceremonial of the accession proclamation on Feb. 8 by garter king of arms, in company with the pursuivants and other heralds, at St. James's palace, Charing Cross, Chancery lane and the Royal exchange was not at all incompatible with a genuine feeling of personal loss. While the king's body lay in state for three days at Westminster hall, long queues waited to pay their homage, and vast crowds lined the route of the funeral procession from Westminster to Paddington. On June 7 the coronation proclamation for the holding of the coronation in 1953 was made by the officers of arms at the traditional stations at Westminster and the City.



ACCESSION of Queen Elizabeth II being proclaimed at Chancery lane, London, on Feb. 8, 1952, by a king of arms. First reading of the proclamation was at St. James's palace earlier in the day

In September the county council approved the County of London Development plan (1951). The plan would entail an expenditure of £540,000,000 and would take 20 years to execute.

The work of demolishing the exhibition buildings of the Festival of Britain proceeded briskly, and a broad riverside walk was constructed between Charing Cross and Waterloo bridges. The station-gate buildings of the exhibition were acquired by British European airways for a passenger terminal.

The net tonnage of shipping using the port of London for the year ending March 31, 1952, was 57,692,297 tons, in excess of 3,000,000 tons more than in the previous year, and only 4,000,000 tons less than in 1939. The total tonnage of goods passing through the port, 39,938,762 tons, was about 4,000,000 tons more than in 1951 and about 6,000,000 tons more than in 1939. Repairs to war-damaged wharves and locks continued.

Further explorations into Roman London resulted in a clearer conception of the date and dimensions of the fort recognized in 1950 in the Cripplegate-Aldersgate area; it was regarded as definitely older than the Roman wall in which it was incorporated. Excavations for the foundations of the new Lloyd's building in Lime street located the remains of an imposing Roman building, itself built over the burned remains of an earlier structure, testifying perhaps to the rebuilding of Roman London after the devastation of Boadicea's rebellion.

A notable exhibition was held at the Royal academy in celebration of the 500th anniversary of the birth of Leonardo da Vinci. An unusual exhibition, sponsored by the Arts council, was that of copies by Italian craftsmen of figures from the 5th- and 6th-century mosaics at Ravenna. An addition to London's museums was made in July by the opening of Apsley house, a residence of the duke of Wellington from 1817, as a permanent Wellington museum.

The Battersea pleasure gardens reopened experimentally for the summer months on May 24 and closed on Oct. 18, the attendance having reached only 2,500,000, compared with more than 8,000,000 in 1951.

(D. NN.)

Lords, House of: see PARLIAMENT, BRITISH.

Los Angeles. In 1952 Los Angeles adopted an official city flower, the bird of paradise (*Strelitzia regina*), and an official pronunciation of its name (loss an' ju less).

On the basis of figures for the first nine months of the year it appeared that Los Angeles county would (1) exceed its record in investments for industrial development, (2) set a record in the number of conventions held during any one year of its history, (3) set a new high in department store sales, and (4) come up with its third greatest residential and commercial building period in history.

Through the first three quarters of the year, dollar investments in Los Angeles county industrial expansions totalled \$293,187,456, or 21% greater than the \$230,669,808 spent during the same quarters of 1951. The year's investment total in industry, with three months yet remaining, was within \$15,000,000 of the record of \$308,349,871 established for the year 1951.

The number of conventions held during 1952 was 203, a total exceeding by 13 the previous high of 190 conclaves held in 1950.

Department store sales during the first nine months of the year exceeded by 5% the previous record established in 1948.

Construction valuations of \$677,042,839 for 138,613 permits during the first nine months of 1952 were 4% greater than the \$648,391,242 spent on building during a corresponding period in 1951. Enough residential permits had been issued at the end of nine months to house 178,400 persons.

During 1952 the area had its greatest rainfall in 63 years, at a time when this rain was badly needed. There were also several earthquakes, none of which caused much serious damage.

While Los Angeles county showed a 23% increase in farm production valuations, it lost, for the first time since 1910, its rank as the leading farm county in the nation. The area was passed by the other California counties of Tulare, Kern and Fresno.

Concern was expressed by civic leaders about the lagging freeway program within the metropolitan Los Angeles area. Original 1947 estimates of the length of time and the cost necessary to finish 165 mi. of minimum freeway construction were expanded. Nevertheless progress continued on the badly needed highway strips.

(T. C. D.)

Louisiana. One of the west south central states of the United States, admitted to the union in 1812 as the 18th state, Louisiana is popularly known as the "Pelican state," "Creole state" or "Bayou state." Area 48,523 sq.mi., of which 45,162 sq.mi. are land. Pop.: (1950 census) 2,683,516, of which 1,796,548 or 67% were white and 886,968 or 33% non-white; 1,471,696 or 54.8% urban and 1,211,820 or 45.2% rural. Capital, Baton Rouge (125,629). Other important cities: New Orleans (570,445), Shreveport (127,206), Lake Charles (41,272), Monroe (38,572), Alexandria (34,913), Lafayette (33,541).

History.—The year 1952 opened with the keenly contested Democratic gubernatorial primary campaign in its final stages. Unique features of this campaign were: (1) an unprecedented number of candidates (nine); (2) a Negro candidate, for the first time since Reconstruction days; (3) the first woman candidate; (4) a split in the "Long" ranks, with Gov. Earl K. Long supporting Judge Carlos G. Spaht, and his nephew, United States Sen. Russell B. Long, supporting Congressman Hale Boggs. In the first primary, Jan. 15, Spaht was first and Boggs third, with Judge Robert F. Kennon, an independent, second. Most of the candidates defeated in the first primary threw their support to Kennon in the second primary, Feb. 19, in which Kennon defeated Spaht by a large majority. The April general election was a mere formality, although for the first time in half a century a Republican candidate for governor made an active

ampaign.

The legislature met in regular 60-day biennial session on May 5, and on May 12 Robert F. Kennon was inaugurated as governor along with the other newly elected state officers. The session was relatively harmonious, and most of the Kennon "reform" program was speedily enacted into law. The state gasoline tax, highest in the nation, was reduced by two cents per gallon; exemptions on state income tax were raised to \$2,500 for single persons and \$5,000 for heads of families; claims of recipients of public welfare payments were required to be published; salaries of many state and local officials were increased; and larger appropriations than ever before were made for most state departments, agencies and institutions. Much of the Kennon program necessitated constitutional amendments, and 34 proposed amendments were submitted to the voters in the November election. Most important amendments were: reinstatement of state civil service, which had been established in 1942 and repealed in 1950; placing the state's largest spending agencies under nonpolitical boards of prominent citizens serving long, staggered terms, so as to prevent any future governor from politicalizing them; and reallocating certain state gasoline taxes to provide funds for constructing a Mississippi river bridge at New Orleans, a Red river bridge at Greenvale and badly needed access roads into New Orleans and other cities of the state.

On the national political scene Louisiana attracted some attention. Members of the state delegation to the Democratic National convention were at first denied seats because they refused in advance to agree to support the party nominees in the November election; but they were later seated under a compromise arrangement. The Democratic party in Louisiana was strongly "anti-Truman" because of the tidelands and FEPC issues. Governor Kennon announced his support of the Republican candidate for president, but most of the Democratic political leaders remained quiet or openly supported the Democratic nominee. In October for the first time in nearly a century both presidential candidates campaigned in Louisiana.

State officers in 1952 (after May 12) were: Robert F. Kennon, governor; C. E. Barham, lieutenant governor; Wade O. Martin, Jr., secretary of state; A. P. Tugwell, treasurer; Allison Kolb, auditor; Fred S. LeBlanc, attorney general; Shelby M. Jackson, superintendent of education; Ellen Bryan Moore, register of land office; Dave Pearce, commissioner of agriculture and immigration.

Education.—In the 1951-52 session the 797 public schools for whites enrolled 236,249 elementary and 72,862 high school pupils and employed 1,984 teachers; the 1,151 public schools for Negroes enrolled 168,388 elementary and 25,173 high school pupils and employed 5,577 teachers. The 173 private schools for whites enrolled 48,371 elementary and 10,244 high school pupils and employed 1,847 teachers; the 93 private schools for Negroes enrolled 18,448 elementary and 1,986 high school pupils and employed 493 teachers. The state operated 15 public trades schools in 1951-52, with 10 additional ones nearing completion. Total state expenditures for public education for the fiscal year 1951-52 were about \$95,000,000, of which \$15,000,000 was for institutions of higher learning; total educational budget for fiscal year 1952-53, \$115,000,000, of which more than \$20,000,000 was for institutions of higher learning.

Social Insurance and Assistance, Public Welfare and Related Programs.—Total benefit payments under the Louisiana unemployment compensation law were \$13,985,422 for the fiscal year 1951-52, compared with \$14,915,207 for the fiscal year 1950-51. Louisiana expended more than \$95,000,000 on public welfare in the fiscal year 1951-52, and appropriated \$15,000,000 for the 1952-53 fiscal year, the increase being the result

Table II.—Principal Crops of Louisiana

Crop	Indicated 1952	1951	Average 1941-50
Cotton (bales)	715,000	760,000	524,000
Cottonseed (tons)	290,000	309,000	215,000
Corn (bu.)	13,116,000	16,307,000	17,493,000
Rice (bu.)	25,822,000	25,164,000	23,810,000
Sugar cane (tons)	6,153,000	4,828,000	5,247,000
Sweet potatoes (bu.)	8,400,000	6,400,000	9,453,000
Irish potatoes (bu.)	693,000	744,000	2,035,000
Oats (bu.)	2,240,000	1,204,000	2,719,000
Hay (tons)	377,000	342,000	387,000
Pecans (lb.)	15,400,000	15,700,000	10,805,000
Peaches (bu.)	66,000	63,000	201,000
Pears (bu.)	110,000	70,000	168,000
Citrus fruits (boxes)	57,000	50,000	314,000
Truck crops (value)	\$ 9,000,000	\$ 8,450,000	—

Source: U.S. Department of Agriculture.

of higher old-age pensions and payments in other categories.

In 1952 the state maintained eight charity hospitals, in addition to rental of beds in several private hospitals; three hospitals for mental patients; three tuberculosis sanitariums; a school for white blind, a school for white deaf and a school for Negro blind and deaf; a training school for spastic children; a training school for the feeble-minded.

The state maintained two prison farms for its 2,500 adult offenders, separate training institutes for about 200 delinquent white boys and girls and a training institute for about 100 delinquent Negro boys. The training institute for delinquent Negro girls authorized by the 1950 legislature was under construction.

State expenditures for maintenance, expansion and improvement of charitable and correctional institutions were \$26,400,000 for the fiscal year 1951-52, \$21,000,000 of which was expended on the charity hospitals and mental institutions.

Communications.—In 1952 Louisiana had 18,200 mi. of public highways, 14,800 mi. of which were state-maintained, 4,800 mi. paved with concrete or black top and the remainder gravelled. Total state expenditures for public highways were \$39,388,600 for the fiscal year 1951-52, exclusive of federal grants-in-aid, compared with \$38,107,460 appropriated for the 1952-53 fiscal year.

There were 4,400 mi. of railways and 4,800 mi. of navigable waterways. About 100 land airports and 10 seaplane bases were in operation in 1952. About 570,000 telephones were in service at the end of 1952.

Banking and Finance.—On Jan. 1, 1952, Louisiana had 36 national banks, with total deposits of \$1,382,833,000 and resources of \$1,469,986,000; and 130 state banks, with total deposits of \$639,111,000 and resources of \$679,704,000. There were 62 savings and loan associations, with total assets of \$227,178,188; 219 small loan companies, with total assets of \$34,359,533; and 89 credit unions, with total assets of \$3,555,184. Total state income for the 1951-52 fiscal year, exclusive of federal grants-in-aid, was \$257,925,125; expenditures for the same period were \$235,911,464. State bonded debt on July 1, 1952, was \$215,000,000.

Agriculture.—The total value of agricultural and truck crops in 1952 was estimated at \$300,000,000, compared with \$290,000,000 in 1951; total acreage harvested was 3,400,000, compared with 3,360,000 in 1951. The total cash income from crops, livestock and poultry and their products was estimated at \$450,000,000 in 1952, compared with \$445,000,000 in 1951; from government payments \$12,000,000, compared with \$11,584,000 in 1951.

Manufacturing.—More than 2,400 industrial establishments, employing 165,000 workers and paying \$360,000,000 in wages and salaries, produced finished products worth \$1,600,000,000 in 1952, compared with \$1,500,000,000 in 1951. During the year about \$150,000,000 of capital investments in new plants and expansions of existing ones was made, under the state law exempting new industrial plants from taxation for ten years.

Forest Products, Furs, Fisheries.—Louisiana forests produced about 1,150,000,000 bd.ft. of lumber and 998,000 cords of pulpwood in the 1951-52 fiscal year, compared with 1,164,940,000 bd.ft. and 941,754 cords in 1950-51 fiscal year.

The Louisiana fur harvest for the 1951-52 season was valued at about \$5,000,000, compared with \$5,957,248 for the 1950-51 season.

The total catch of Louisiana commercial fisheries—fish, oysters, shrimp, crabs and frogs—was valued at \$30,000,000 in 1951, compared with \$28,000,000 in 1950. It provided employment for about 30,000 men, and approximately 115,000 persons were dependent on the industry for a livelihood. (W. Pr.)

Mineral Production.—Table III shows the tonnage and value of those mineral commodities produced in Louisiana in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Louisiana ranks second among the states in the production of

Table III.—Mineral Production of Louisiana

(Short tons, except as noted)

Mineral	Quantity 1950	Value 1950	Quantity 1949	Value 1949
Clays	209,000	\$ 185,000	134,000	\$ 107,000
Natural gas (000,000 cu.ft.)	831,771,000	44,084,000	732,845,000	32,025,000
Natural gasoline (bbl.)	14,603,000	44,548,000	13,936,000	45,259,000
Petroleum (bbl.)	208,965,000	554,520,000	190,826,000	507,730,000
Petroleum gases (bbl.)	6,165,000	7,991,000	5,318,000	9,733,000
Salt	2,279,000	6,903,000	2,030,000	5,838,000
Sand and gravel	5,505,000	6,310,000	5,050,000	6,107,000
Sulphur	1,406,000	23,700,000	1,244,000	20,000,000
Other minerals		5,336,000		5,174,000
Total		\$693,607,000		\$631,813,000

natural gas and sulphur, and third in petroleum, and stands fifth in the value of mineral output, with 5.85% of the U.S. total.

Table I.—Louisiana Public Welfare Programs, 1951-52

Type of assistance	Average number on rolls	Cost for the fiscal year
Old-age pensions	119,500	\$68,435,821
Deaf-blind	2,450	1,020,373
Dependent children	85,600	15,760,698
Disability assistance	17,350	6,721,811
General assistance	7,140	2,735,418
Foster children	1,394	777,270
Totals	233,434	\$95,451,391

Source: Louisiana Department of Public Welfare Reports.

Lovett, Robert Abercrombie

(1895-), U.S. government official, was born on Sept. 14 in Huntsville, Tex. He studied at Yale and at Harvard, served in the naval air arm during World War I and afterward became a partner in the banking firm of Brown Brothers, Harriman & Co. He was appointed special assistant to the secretary of war in Dec. 1940, and assistant secretary of war for air in April 1941. He returned to private business in 1945, but in May 1947 was appointed undersecretary of state. During absences of State Secretary George C. Marshall in 1947 and 1948, he was acting secretary of state, and as such helped further co-ordination of western Europe's political and economic activities. His resignation from the department was accepted along with Marshall's on Jan. 7, 1949.

Lovett again served under Marshall when, in Sept. 1950, he was appointed deputy secretary of defense, and Marshall was made secretary of defense. Upon the latter's resignation a year later, Lovett was elevated to that position. He was sworn in Sept. 17, 1951.

In his first semiannual report on U.S. defense, issued March 15, 1952, Lovett declared that the United States would tolerate no appeasement in return for a truce in Korea.

Lumber. **United States.**—Lumber production in the United States during 1952 was maintained at the relatively high level shown in 1951. The major factors in this production were continued housing activity, industrial construction and requirements for the military and preparedness programs. Other factors were rural building and construction, railroad requirements, export trade and an active furniture, radio and television cabinet market. Total lumber production for 1952 was estimated at 37,500,000,000 bd.ft.

The leading lumber species cut were, in order of importance, southern pine, Douglas fir and ponderosa pine, which together comprised about 64% of the total volume. Other leading species, in order, were oak, hemlock, eastern white pine, red gum, white fir, yellow poplar, redwood, spruce, maple, tupelo, cedar, sugar pine, cottonwood (including aspen), beech, larch, Idaho white pine, cypress, birch and lodgepole pine.

About 81% of the total cut was of softwoods (pine, spruce, fir, etc.) and 19% was of hardwoods such as oak, maple, red gum, beech, etc.

White fir, larch, lodgepole pine, red gum and tupelo advanced in relative importance and some other species such as spruce, Idaho white pine, cypress and birch decreased in relative volume production.

About 46% of the total lumber production came from west of the Great Plains and 54% from the eastern states. This was true in spite of the fact that the three leading lumber producing states, in order, were Oregon, California and Washington. California lumber production was greatly increased by the activity of about 600 relatively new sawmills in the Douglas fir forests of the northern counties. Vast quantities of this species were shipped by rail and truck to the active building areas in the San Francisco bay region and in the Los Angeles and other districts of southern California. Other important species cut in California were ponderosa pine, redwood and the red and white firs. The greatest volume of Douglas fir came from Oregon and Washington.

The south continued as an active producing region in all states from Virginia to Texas. Both southern pine and hardwoods came from these states. North Carolina continued as an important lumber state in spite of the fact that its virgin timber had been largely cut more than 40 years before.

Maine continued as the most important white pine state. Very little virgin timber was cut anywhere in the United States

except in the Rocky mountains and on the west coast. The timber reserves of the United States were growing up at a surprisingly rapid and satisfying rate, largely because of fire protective and prevention measures and excellent management policies, especially on the part of the larger timber-owning concerns. The timber famine so widely predicted 40 to 50 years before had not arrived, nor was it threatening. A large share of the country's lumber supply, probably 60% to 70%, was by 1952 coming from regrowth timber. Some forests, notably in parts of Maine, New York and Pennsylvania, had been supplying continuous crops of timber for from 100 to 300 years. Many sections of the south had also produced successive crops for the past 60 to 100 years or more.

The tree farm movement sponsored by the lumber, plywood, pulp and paper and other timber-owning interests was active, continued and expanded. This movement had been responsible for a reawakening of interest in practising efficient and successful forest management on more than 25,000,000 ac. of productive forest.

More lumber was cut in 1952 by the small sawmills, that is, those cutting up to 10,000 bd.ft. per day, than by the larger sawmills. There were, however, some mills that had a capacity of from 300,000 to 1,000,000 bd.ft. per eight-hour day. Most of them were on a sustained-yield basis of continuous and perpetual production, since there were sufficient timber supplies, including current volume and prospective growth, to maintain these mills in constant production.

Prices for lumber were well maintained through the spring and summer, especially in the case of the better grades. Stumpage prices paid for standing timber were also well maintained compared with 1951 and previous years. This was notably true for national forest and Indian reservation timber. Delivered lumber prices continued at high levels because of higher freight rates and labour charges.

Substantial appropriations were made by congress to build and maintain access logging roads in the national forests, which were producing about 4% of the total annual lumber cut, compared with about 1% to 2% a few years before.

The year was marked by more intensive utilization of raw materials in all parts of the country. These practices included: (1) improved and enlarged prelogging and salvage or relogging, especially on the west coast where yields were 5% to 20% greater; (2) prebarking of logs prior to their sawing in the mill in order to obtain bark for conversion into materials such as adhesives, soil conditioners, cork substitutes and other products, as well as to produce cleaner logs for cutting into lumber, pulpwood or other products; (3) increasing use of chipped hogged slabs, edgings, trimmings and other mill refuse formerly lost or wasted, for paper pulp, fibreboards, hard board, fuel and other purposes; and (4) increasing use of low grades of lumber for pallets, boxes and crates and furniture cores; also for knotty panelling and interiors of dwellings. Some forms of knotty lumber and that with heart centres formerly considered defective or undesirable were recognized as architecturally desirable and beautiful. This was especially true of certain heartwood centres of Douglas fir, cypress, white pine, oak and chestnut.

(N. C. B.)

British Commonwealth and Europe.—The year 1952 saw the end of the long sellers' market in the timber-exporting countries of Europe and the commonwealth. The free-on-board prices of softwood, hardwood and plywood all fell considerably and c.i.f. (carried insurance free) values experienced an even greater setback because of a severe fall in freight rates. Among European exporters, Finnish shippers started the ball rolling by lowering their price for average redwood in May to £72 per standard f.o.b. When the Russians issued their stock sheet

shortly afterward, it was found that their price for unsorted redwood was £60 per standard f.o.b. The Finns made further cuts and by midsummer their price stood at £58 per standard f.o.b. This fall in prices was undoubtedly helped by the fact that the United Kingdom, through financial stringency, cut its softwood import quotas to about 450,000 standards as against 1,750,000 standards imported in 1951. The board of trade granted a measure of freedom to private importers of softwood by permitting them to buy direct, but under a very restricted global quota. The combined effect of all this was not only to shake down prices in other softwood-exporting countries in Europe such as Yugoslavia, Poland and Czechoslovakia, but also seriously to affect the Canadian export market. There matters were complicated by the fact that the British Timber control had made forward contracts with Canadian exporters, covering a large part of 1952, and in the spring of the year their commitments were about 170,000 standards. These contracts were sold on c.i.f. terms to British importers at steadily reduced prices during the year, thus still further weakening the market position.

For the hardwood trade 1952 was also a period of considerable price adjustment. Prices for practically all the tropical hardwoods produced within the commonwealth fell sharply, helped in many cases by the fall in freight already mentioned which applied equally to hardwoods and softwoods. The market for west African timbers suffered particularly heavy falls, because under boom conditions production there had expanded beyond the capacity of normal consumption. For instance, Obechi, which at one time had been selling at more than £20 a ton f.o.b., fell during the year to a low level of £13 a ton f.o.b. Beech, one of the stable productions of the European hardwood trade, suffered falls ranging up to 20%. In the spring the French government announced the following export quota: sawn poplar, 25,000 cu.m., sawn oak, 15,000 cu.m., sawn beech, 8,900 cu.m., sawn ash, 1,500 cu.m., miscellaneous hardwoods, 15,000 cu.m. A large trade developed in soft hardwoods mainly from west Africa, Malaya and Borneo, which were used as substitutes for softwoods. Exports from these countries had a setback during 1952. In the first six months of 1952, 18,668,000 cu.ft. of hardwoods, both logs and lumber, were imported into the United Kingdom, compared with 26,675,000 cu.ft. for the same period in 1951.

Prices of plywood fell considerably in all the main producing countries. Gaboon plywood, one of the standard productions of France and its colonies, experienced falls in price ranging up to 33½%. British home-manufactured plywood was seriously reduced in price to meet competition from abroad. Finnish birch, which from its popularity for general utility purposes might almost be called a standard plywood, joined the general setback with a fall in price, according to grade, up to 20%.

A feature of 1952 was the holding of the sixth British Commonwealth Forestry conference at Ottawa, Ont., during August and September. This conference was attended by delegates from all the principal commonwealth timber-producing and consuming countries. (See also FORESTS.) (B. L.)

Lutherans. In 1952 the most important event among Lutherans was the Lutheran World Federation assembly at Hanover, Ger., where delegates, alternates and official visitors from 52 member churches in 25 countries on all continents met for ten days. They represented in excess of 46,000,000 of the more than 60,000,000 Lutherans in the world.

Bishop Hanns Lilje of Hanover, Ger., was elected the new president and Carl E. Lund-Quist of the United States was chosen executive secretary, both for five-year terms. The permanent office of the federation is in Geneva, Switz. Lutherans

of the United States invited the assembly's next meeting in 1957 to be held in the United States.

Three new departments of work were set up by the Lutheran World federation: (1) theology, to foster international understanding and appreciation of doctrine, (2) world missions, to co-ordinate global foreign missions, (3) world service, to strengthen joint work all over the world for refugees and people and churches in need.

Johannes Smemo replaced Bishop Eivind Berggrav as Bishop of Oslo, the primate of Norway. In the United States, the year 1952 saw initial steps toward organic merging of five Lutheran conference synods: the Evangelical, American, Augustana, Lutheran Free and United Evangelical Lutheran Churches.

The sum of \$500,000 was spent by the National Lutheran council and five national church bodies associated with it for the production of a feature-length dramatic film on the life of Martin Luther. Filming was done in Germany.

The Lutheran Television Productions committee of the Lutheran Church, Missouri Synod, produced a series of family films, *This Is the Life*, which began to be telecast on major networks and stations in Oct. 1952. With a budget of \$750,000 and much volunteer service, it was the most ambitious church undertaking in television up to that time. The National Council of Churches of Christ in the U.S.A. was to be the distributing agency.

Lutherans in the United States increased to somewhat more than 6,500,000. According to the National Lutheran council, which compiles these figures annually, this was an increase of approximately 4% over the previous year. The last five-year-average increase was 2.4%. (See also CHURCH MEMBERSHIP.)

(Jo. St.)

Luxembourg. An independent grand duchy in western Europe. Luxembourg is bounded south by France, northwest by Belgium and northeast by Germany. Area: 1,010 sq.mi. Pop.: (Dec. 31, 1947, census) 290,992; (mid-1951 est.) 300,000. Language: Luxembourgian (idiomatic) and (officially) French. Religion: Roman Catholic, 98%. Capital: Luxembourg (pop., Aug. 1949 est., 62,000). Ruler, Grand Duchess Charlotte; prime minister in 1952, Pierre Dupong.

History.—On May 13, 1952, the chamber of deputies ratified the treaty establishing the European Coal and Steel Community by 47 votes to 4 (Communist). On Aug. 10 a nine-member high authority of the E.C.S.C. was established in the city of Luxembourg. Albert Wehrer, Luxembourg minister to France, was appointed member of the high authority.

On May 27 Joseph Bech, minister of foreign affairs, signed in Paris the treaty establishing the European Defense Community. It was announced at the same time that the Luxembourg four battalions would be integrated with the Belgian armed forces. (See also EUROPEAN UNION.)

The output of iron ore increased during the first half of the year by almost one-quarter; it reached 658,000 tons in May 1952. The steel output slowed down slightly and the best month was January with 266,000 tons. In March only 13 people were registered as unemployed.

About 500 Soviet-built "Moskvich" cars and a considerable quantity of manganese ore were delivered during the year to Luxembourg by the U.S.S.R. in exchange for raw steel and rails. During the fiscal year ending June 30, 1952, the U.S. armed forces placed \$300,000 worth of orders in Luxembourg for "off-shore" purchases.

Education.—Schools (1949-50): elementary 944, teachers 1,012; higher elementary 22; secondary 10; technical 6; teachers' colleges 2; and an academy of music.

Finance.—Monetary unit: Luxembourg franc, at par with the Belgian franc, with an exchange rate of 50.50 fr. to the U.S. \$1 in 1952. Budget: (1951 est.) revenue 3,477,700,000 fr., expenditure 3,446,200,000 fr., (1952 est.) revenue 3,637,600,000 fr., expenditure 4,009,300,000 fr.

Luxembourg Industrial Production
(In thousand metric tons except as noted)

Product	1937-39	1945	1949	1950	1951	1952 (6 mo.)
Iron ore (metal content 30%)	6,252	1,404	4,152	3,828	5,628	3,498
Pig iron	1,968	312	2,376	2,496	3,158	1,553
Crude steel	1,908	264	2,268	2,448	3,072	1,512
Gas (million cu.m.)	—	11.6	17.8	17.3	17.8	8.9
Electricity (million kw.hr.)	507.6	177.6	620.4	697.2	809.0	421.0

Transport and Communications.—Railways (1950): 340 mi. (including 90 mi. narrow-gauge). Roads (1950): 2,673 mi. Motor vehicles registered (June 30, 1950): cars 9,204, commercial 4,525, motorcycles 4,880. Telephones: 20,287.

Agriculture.—Main crops: wheat, oats, potatoes. Livestock (Dec. 1951): cattle 124,230; pigs 119,680; horses 13,910; sheep 2,700; goats 1,240.

Industry.—Production is shown in the table.

Macao: see PORTUGUESE OVERSEAS TERRITORIES.

MacArthur, Douglas

(1880—), U.S. general of the army, was born on Jan. 26 at Little Rock barracks, Ark. (For his early career, see *Encyclopædia Britannica*.) After the Japanese attack on Pearl Harbor, MacArthur led U.S. and Filipino forces in defense of the Philippines until March 17, 1942, when Pres. Franklin D. Roosevelt ordered him to Australia. From this point he led the combined United Nations drive that ultimately led to a successful reinvansion of the Philippines. MacArthur himself accepted the Japanese surrender in Tokyo bay on Sept. 2, 1945, and as supreme commander of the Allied powers in Japan he carried out the occupation policies determined by the 11-nation far eastern commission. When the North Koreans invaded South Korea in June 1950, MacArthur was placed in charge of the United Nations forces opposing the aggression. When the Chinese Communists entered the war, MacArthur promptly informed the world that it was confronted by a new war.

When in March 1951 General MacArthur by implication threatened to bomb and blockade red China, in calling upon the red field commanders to discuss armistice terms, the first of a series of disagreements on policy with officials in Washington, D.C., emerged. The eventual outcome was MacArthur's removal by Pres. Harry S. Truman in April, and this led to an investigation of the background of such action, and of over-all U.S. foreign policy, instituted by the U.S. senate.

As keynote speaker of the Republican national convention at Chicago on July 7, 1952, MacArthur attacked the Truman administration's foreign and domestic policies for having brought the United States "fiscal instability, political insecurity and military weakness." He was nominated for the presidency at the convention but received only ten votes on the first ballot. On July 31, 1952, he became chairman of the board of Remington Rand, Inc., New York city, at a reported annual salary of \$100,000.

McCarran, Patrick Anthony

(1876—), U.S. senator, was born at Reno, Nev., on Aug. 8. He graduated from the University of Nevada, Reno, in 1901 and was admitted to the state bar in 1905, meanwhile (1903) serving in the Nevada legislature. At Tonopah, Goldfield and Reno he built a lucrative law practice, particularly during mining booms. From 1913 to 1917 he was associate justice of the Nevada supreme court and in 1917-18 chief justice. He resumed his law practice thereafter until 1932, when he was elected U.S. senator from Nevada on the Democratic ticket. He was re-elected for his fourth consecutive term (1951-57) in Nov. 1950. As chairman of the senate judiciary committee and the joint congressional ("watchdog") committee on foreign aid, McCarran wielded considerable influence in 1950-52 on domestic and foreign policy. He helped write the Internal Security (McCarran) act of 1950, and on Jan. 18, 1951, became

chairman of a senate subcommittee appointed to investigate administration of the act. The subcommittee later became a focus of national attention when it conducted hearings on U.S. policy in the far east. During these hearings McCarran became increasingly alarmed at the administration's methods for safeguarding internal security. On Aug. 5, 1951, he charged that Communist agents and sympathizers had ready access to top U.S. defense secrets.

McCarran was co-sponsor of the controversial immigration bill (McCarran-Walter Immigration and Nationality act) passed by the U.S. senate on June 27, 1952, over Pres. Harry S. Truman's veto. This act retained the quota basis of immigration fixed in proportion to nationalities in the existing U.S. population.

McCarthy, Joseph R.

(1909—), U.S. senator, was born Nov. 14 in Grand Chute, Wis. He graduated from Marquette university, Milwaukee, Wis., and practised law until 1939 when he was elected circuit judge. From 1942 to 1945 he served overseas with the U.S. marines, and during this time his name was put up by friends for nomination to the U.S. senate. Although he received 100,000 votes, he ran second. In 1945 he was re-elected circuit judge, and in 1946 he was elected to the U.S. senate. In the senate he was especially known for his investigations of communism in high places in government, and his frequent sweeping accusations caused his enemies to use the word "McCarthyism" to describe his type of investigations. He repeatedly scored the Truman administration for what he termed the failure of its policy in Asia, and called for the ouster of Gen. Douglas MacArthur "perhaps the greatest victory the Communists have ever won." Sen. William Benton (q.v.) (D., Conn.) in Aug. 1951 introduced a resolution calling for investigation of McCarthy's activities to decide whether he should be expelled from the senate. Senator Benton termed "McCarthyism" unjust and dangerous, and on Sept. 28, 1951, told the senate privileges and elections subcommittee that McCarthy should be ousted on the basis of ten charges that Benton detailed. On March 26, 1952, McCarthy instituted a \$2,000,000 libel suit against Benton.

In the national election of Nov. 4, 1952, he was returned to the U.S. senate for the term 1953-59.

McCormack, John William

(1891—), U.S. congressman, was born on Dec. 21 at Boston, Mass., and was educated in the public schools of Boston. He studied law in a private law office, was admitted to the Massachusetts bar in 1913 and began practice in Boston. He was a member of the Massachusetts constitutional convention in 1917-18, a member of the state house of representatives from 1920 to 1922, and state senator from 1923 to 1926, serving as Democratic floor leader for the last two years of his term. In 1928 he was elected to fill a vacancy in the U.S. congress (1927-29), and was returned to the house in each succeeding election. McCormack served as majority floor leader of the house from 1940 to 1947 and as minority whip from 1947 to 1949, when the Republicans controlled congress. After the Democratic victory in the national elections of 1948, McCormack was again elected majority leader (1949) and was re-elected to that post on Jan. 2, 1951. At the Democratic national convention in Chicago, Ill., in July 1952, he was named chairman of the committee on platform and resolutions.

McCormick, Lynde Dupuy

(1895—), U.S. naval officer, was born on Aug. 12 at Annapolis, Md. Graduating from the U.S. Naval academy at Annapolis in 1915, he rose through the grades to admiral. He

specialized in submarine warfare, and was made assistant war plans officer for the U.S. Pacific fleet in 1941. In 1943 he assumed command of the battleship "South Dakota" in the Atlantic, and later that year was transferred to Washington, D.C., where he held several administrative posts. He was a member of the staff of advisers at the Yalta conference of 1945. After World War II, Admiral McCormick was vice-chief of naval operations until his appointment, on Aug. 1, 1951, as commander of the U.S. Atlantic fleet to succeed Adm. William M. Fechteler. On Jan. 30, 1952, Pres. Harry S. Truman announced the appointment of Admiral McCormick as supreme commander of Allied naval forces in the Atlantic.

On April 10, 1952, he established the naval headquarters of NATO at Norfolk, Va.

Macedonia: see YUGOSLAVIA.

McGranery, James Patrick (1895-), U.S. cabinet member, was born on July 10 at Philadelphia, Pa. During World War I he was an observation pilot with the U.S. air corps. He was graduated from the Temple university law school at Philadelphia in 1928 and was admitted to the bar that year. After a period in private practice of law, he was elected to the U.S. congress as a Democrat from the 2nd Pennsylvania district, serving from 1937 until his resignation in Nov. 1943 to accept appointment as assistant U.S. attorney general in Washington, D.C. In 1946 he was appointed federal judge for the eastern district of Pennsylvania. After Pres. Harry S. Truman's dismissal of Attorney General J. Howard McGrath on April 3, 1952, McGranery was nominated to succeed McGrath. He was confirmed by the senate May 20 after Republican opposition. On June 10 McGranery began an investigation of the department of justice by ordering all U.S. attorneys under his jurisdiction to report all delays of prosecution and to reveal any time they spent in private law practice.

Machinery, Farm: see AGRICULTURE.

Machinery and Machine Tools. Machine tool building enjoyed good times during 1952 and notable progress was made in developing new machining techniques and in perfecting processes already in existence. The defense tooling programs in the United States and in England greatly stimulated the machine tool industries in those countries and in western Europe, and much of the technical advancement during the year stemmed from attempts to solve manufacturing problems connected with armament items, especially aeroplanes and jet engines.

The U.S. machine tool industry's output rose well over the 1,000,000,000 mark for the year, reaching that level for the first time since 1943. The demand for defense purposes was so great that in February builders were forbidden to ship any machines except to users with defense-rated orders. Those restrictions were relaxed late in the year, when the defense load in the machine tool industry began to lighten. Meanwhile the supply of machine tools available to users in the United States had been enlarged by importation of a sizable volume from England and western Europe. It was estimated that during the complete year about \$50,000,000 worth of foreign machine tools were imported, many going to defense contractors.

During the year the federal government created an advisory committee on production equipment which was headed by Harold Vance, chairman of the Studebaker corporation. It was given the task of studying what should be done to broaden the base of industrial mobilization in readiness for a national emer-



HIGH-SPEED CAMERA manufactured by the Eastman Kodak Co., filming the motions of a machine operator in the firm's plant in 1952. This technique was used to detect wasted motions which could be eliminated by improving the operating designs of machinery, thus saving labour costs

gency and of recommending measures for keeping a healthy machine tool industry at hand for service in time of war. Toward the end of the year the Vance committee came up with the idea that enough new machine tools should be put into defense factories, such as jet-engine plants, to enable a large expansion of production quickly if an emergency should arise. The committee also suggested that enough large machine tools (popularly called the "elephants") should be produced during the following year or two to provide a comfortable supply for reserve purposes. These machines normally take 9 to 18 months to build.

The spectacular recovery of the German machine tool industry came to light at the second European Machine Tool exhibition at Hanover, Ger., in September. German builders had redesigned many of their machines and had gone into competition with United States builders in offering so-called "production" machines and even special-purpose machines, such as the transfer-type machines used by the automobile industry. The Hanover show also revealed notable progress in the design of machines produced by other European builders. More than 5,000 machine tools were displayed by 800 exhibitors from 13 countries. About 500 exhibitors were Germans.

Copying attachments had become standard equipment on European lathes, even on standard models, and they had been extended to milling machines, boring mills and shapers. At least two lathe builders arranged the copying slide and templet holder to be turned through 90 degrees to permit profile facing operations with the same attachment. Electromagnetically operated multidisk clutches, sliding rotor motors and program-switching devices were much in evidence at Hanover. They were used for preset speed and feed selection, automatic rapid approach and return and similar applications on turret and centre lathes, millers, grinders, boring machines and gear cutters.

One German builder came out during the year with sliding rotor motors for braking unit heads of multiway drilling machines, tool heads of a large planer, the automatic chucking mechanism of a production lathe and the electrohydraulic control of a vertical broach. Another German company brought out a pneumatic superfinishing device which reciprocates the stones at a rate of 2,500 strokes per minute by means of air cylinders. It was supplied as an attachment for lathes and grinders, but could be applied to other types of machines. Several European

builders designed vertical or inclined bed profiling lathes. One knee-type vertical miller had a horizontal spindle built into the column for simultaneous face milling. A German company built a hydraulic universal grinder with three spindles, one each for cylindrical, surface and internal work. But European machines, in general, were still underpowered by U.S. standards.

Trying to machine so-called "unmachinable" materials had been one of the foremost problems in the United States. In 1952 a new process—the ultrasonic method—came to light. The process consists of vibrating at high frequency and low amplitude a soft tool having an end shaped to the desired contour against a workpiece, while a mixture of finely divided abrasive and water flows around and under the end of the tool on top of the work. Under light but continuous pressure, the tool sinks into the workpiece, which may be tungsten carbide, titanium carbide, zirconium boride, hardened tool steels, molybdenum, alnico or other metals, as well as nonmetals such as diamond, quartz, aluminum oxide, flint, glass, boron carbide and others. With this process, carbide dies can be solid instead of being made in weak sections conventionally required for complex shapes. Cutting rates vary with the material being worked, the volume of material removed and the power of the machine. For example a $\frac{1}{8}$ -in.-thick carbide drawing die for producing six fluted splines was made in about three minutes with a spline used as the tool. One of the most unusual applications of the process was for producing curved holes.

"Flame plating" was another process developed during the year. By this process, tungsten carbide and other powdered metals could be coated on any metal in thicknesses from 0.0005 in. to 0.020 in. The coating was neither diluted nor alloyed with the base metal. Bond was mechanical, similar to that created by metal spray; and the coating was very ductile, heat resisting and shock resisting, particularly when thin. Its application was limited to areas up to 6 x 40 in. The new process provided top abrasion resistance with such contrasting properties as lightness, flexibility or electrical conductivity. Irregular objects could be coated, providing surfaces could be covered from the horizontal plane to 45 degrees above it.

Abrasive belt taper grinding was a new method of tapering aircraft wing and fuselage skins which was unveiled during 1952. A 36-grit, 126 x 50-in. waterproof cloth belt was used for all heavy rough-grinding tests. Belt speed was 6,200 surface feet per minute. Between 200 and 250 lb. of material was removed before the belt lost its grinding efficiency. Then it was used as a finishing belt, resulting in satisfactory surface finishes.

Two tracer-controlled, right-angle lathes were developed during the year for fast, accurate machining of jet-engine parts. They were equipped with right and left power angular slides and air-gauge tracer units for contouring operations on outside and inside diameters or faces. Five blade surfaces were ground in a single operation on a new grinding machine with 24-in.-diameter wheel which was announced during the year. A new abrasive-belt grinder removed up to $1/32$ in. of stock on jet-engine bucket airfoils in less than eight seconds. This contour grinder employed a 12-ft. belt driven through a nine-speed transmission by a 15-h.p. motor. Both convex and concave surfaces were ground by clamping the work between upper and lower dies that had the required form.

(B. Fv.)

McIntyre, James Francis Aloysius (1886-), U.S. Catholic prelate, was born in New York city on June 25. He attended New York city's public schools, Harlem evening high school and the College of the City of New York. His first job was that of errand boy in the Wall street section of New York city. In the

employ of the H. L. Horton company (1902-15), he rose to the position of office manager, from which he resigned to study for the priesthood. He was a student at Cathedral college and Joseph's seminary (1915-21) and was ordained a priest of the Roman Catholic church on May 21, 1921.

He was an assistant at St. Gabriel's church, New York city (1921-23), and was appointed assistant in the chancery office (1923), chancellor (1934) and a domestic prelate (1936). He served as auxiliary bishop of New York and titular bishop of Cyrene (1946-48) and became archbishop of Los Angeles in 1948. On Nov. 29, in Vatican City, Pope Pius XII named Archbishop McIntyre a cardinal-designate.

McKay, Douglas (1893-), U.S. government official, was born on June 24 at Portland, Ore., and received his bachelor's degree in agriculture at Oregon State college, Corvallis, in 1917. He served overseas as an infantry officer in World War I. He was an automobile salesman in Portland, Ore., from 1920 to 1927, then set up his own automobile dealership at Salem, Ore. Mayor of Salem for one term (1933-34), he was later Oregon state senator for four separate terms (1935-37, 1939-41, 1943-45 and 1947-49). In 1948 he was elected governor of Oregon on the Republican ticket; he was re-elected for a second term in 1950.

Although a staunch opponent of such vast public power developments as the projected Columbia Valley authority and the Missouri Valley authority, McKay became known in the west as a supporter of local governmental development of natural resources. He was named for the post of U.S. secretary of the interior by Dwight D. Eisenhower on Nov. 20, 1952.

Madagascar. The fourth largest island in the world, situated off the southeast coast of Africa, Madagascar is an overseas territory of the French union. The Comoro archipelago is administered as a separate territory. Areas and populations are shown in the table.

	Area (sq.mi.)	Population 1936 est.	1950 est.
Madagascar (with dependencies)	228,589	3,669,328	4,181,800
Comoro archipelago	849	128,608	168,400
Total	229,438	3,797,936	4,350,200

Population: many indigenous racial and tribal groups, the Merina being the most numerous (c. 900,000); 64,429 Europeans (1950), including 44,517 French; Hindu, Chinese and Arab minorities. Language: Malagasy, related to the Malay, Polynesian and Melanesian groups. Religion: Madagascar, Christian and pagan; Comoro archipelago, Moslem. Chief towns (pop., 1950 est.): Antananarivo or Tananarive (cap., 174,153); Majunga (32,163); Tamatave (28,747); Diégo-Suarez (28,865). High commissioner in 1952: Governor General Robert B. B. B. Comoros, administrator: Pierre Coudert.

History.—The moderates polled the most votes in the elections to the provincial assemblies on March 30, 1952; out of 93 seats, only 3 (in the town of Antananarivo) fell to the nationalists. The poll was heavier than in any previous elections. The elections to the senate resulted in no change.

Teaching was made to conform more to metropolitan standards, but the use of the Malagasy language was permitted for those learning to read.

It was decided to begin exploitation of the Sakoa coal deposits, with a target of 100,000 metric tons a year for local use. The plan also envisaged new sugar, sisal and vegetable-oil cultivation in the western plains, where soil conditions were still being investigated. There was a slight increase in the quantity of rice exported (particularly to the Mascarennas) because of the shortage of rice from Asia.

In September and October there was a big exhibition in Tananarivo to demonstrate modern techniques and to outline Madagascar's potentialities.

Education.—(1952) Pupils: primary 236,000; secondary 11,500; technical 4,300; undergoing higher education 200; bursaries in France 135.

Finance and Banking.—Note circulation 7,500,000,000 fr. C. F. A. Monetary unit: franc C. F. A. (Colonies Françaises d'Afrique)=2 metropolitan francs. In 1952 the exchange rate was 350 metropolitan francs to the U.S. \$1.

Foreign Trade.—(1951) Imports 22,400,000,000 fr. C. F. A. (including 1,400,000,000 fr. from the French union and 1,350,000,000 fr. from the British Commonwealth); exports 13,500,000,000 fr. C. F. A. (including 1,000,000,000 fr. to the French union and 1,300,000,000 fr. to the British Commonwealth), mainly coffee (5,300,000,000 fr.), cloves 1,000,000,000 fr., meat (1,000,000,000 fr.), hides (800,000,000 fr.), tobacco 600,000,000 fr.), fibres (700,000,000 fr.), graphite (500,000,000 fr.). (Hu. De.)

Magazines and Periodicals: see NEWSPAPERS AND MAGAZINES.

Magnesium: see MINERAL AND METAL PRODUCTION AND MINES.

Maine. The extreme northeastern state of the United States, Maine was admitted as the 23rd state in 1820, and is popularly known as the "Pine Tree state." Land area 31,040 sq. mi.; water area 2,175 sq. mi.; population (1950 census) 913,744, an increase of 7.9% over 1940. The population of the principal cities (1950 census) was: Augusta (cap.) 20,913; Portland 14,634; Lewiston 40,974; Bangor 31,558; Auburn 23,134; South Portland 21,866; Biddeford 20,836; Waterville 18,287.

History.—The first year of Maine's 2% sales and use tax brought the state \$11,212,242. The state property tax ended June 30, 1952, but brought in \$5,576,922 in its last year, thus counting for a large portion of the \$9,073,269 excess of revenues over expenditures for the fiscal year 1951-52. The legislative research committee worked on a heavy docket including investigations of the state liquor monopoly, the state Indian tribes and Maine county government, and prepared its reports for the 1953 legislature. Hearings in May and June produced sensational charges of graft and corruption regarding liquor purchases by the state. The "evidence," much of it hearsay, was used by the state attorney general and grand juries in two counties. By mid-October one man had been convicted of conspiracy and the former chairman of the liquor commission acquitted of the same charge.

The June primary and election in September were tinged with the liquor episode at the U.S. senate and gubernatorial levels. Gov. Frederick G. Payne was able to win the U.S. senate seat from incumbent Owen Brewster by defeating him in the June primary. Republican representatives Robert R. Hale (1st dist.), Charles P. Nelson (2nd dist.) and Clifford G. McIntire (3rd dist.) were re-elected.

The chief officers of Maine during 1952 were: governor, Frederick G. Payne; secretary of state, Harold I. Goss; attorney general, Alexander A. LaFleur; treasurer, Frank S. Carpenter; auditor, Fred M. Berry; commissioner of agriculture, Fred J. Nutter. The governor is the only elected state official in Maine.

Education.—The net enrolment in the public schools on April 1, 1951, as 159,269 compared with 158,247 in 1950 and 162,821 in 1949. The state granted \$6,035,207 from the general fund for public education to cities and towns for the year 1951-52, compared with \$5,424,114 in 1950-51. Teaching positions in 1950-51 numbered 6,384, compared with 323 in 1949-50. Expenditure per pupil based on average daily attendance in 1950-51 was \$177.89, compared with \$166.84 the previous year. The commissioner of education, Harland A. Ladd, died during the year, and was succeeded by William O. Bailey.

Social Insurance and Assistance, Public Welfare and Related Programs.—As of Dec. 31, 1952, there was an estimated balance in the Maine employment security fund for unemployment benefits of \$41,700,000, compared with \$39,007,558 a year earlier. Total estimated benefit payments for 1952 were \$5,500,000, compared with payments of \$5,558,694 in 1951 and \$9,125,833 in 1950. The state expended for health, welfare and charities for the fiscal years ending June 30, 1952, and June 30, 1951, \$16,365,808 and \$16,270,261, respectively. The 1952 expenditures in-

cluded \$7,470,267 in old-age assistance and \$3,879,901 for dependent children. Thirteen state institutions (correctional, hospitals for the insane, sanatoria) as of Sept. 30, 1952, had a total inmate population of 5,671 and 1,498 employees, and the totals expended for the fiscal years 1952 and 1951 were \$5,551,045 and \$5,080,811, respectively.

Communications.—Highways of the state in 1952 were: state highway system, 3,167 mi.; state-aid system, 7,922 mi.; local system, 10,765 mi.; total 21,854 mi. In the year ended June 30, 1952, the state expended state and federal funds for highway and bridge purposes, exclusive of debt and interest charges amounting to \$22,049,553, compared with \$21,085,465 for 1951. Total highway expenditures for the same years were \$25,665,878 and \$24,828,883. Steam railway mileage on eight railroads was 1,881 line miles (Dec. 31, 1951). Maine had 34 licensed commercial airports in 1952, and one regularly scheduled air line. There were 15 AM and 2 FM radio stations operating in 1952, and 11 daily newspapers. There were 305,558 motor vehicles registered in 1951, and 311,640 estimated for 1952, with 349,163 operator's licences issued in 1951 and 359,635 estimated for 1952.

Banking and Finance.—During 1952 the Maine banking department supervised 32 savings banks, 31 trust companies and 30 building and loan and savings and loan associations. The following figures are for June 30, 1952: deposits of savings banks, \$252,341,000; total assets, \$291,162,000; trust company deposits, \$259,122,000; total assets, \$284,383,000; building and loan and savings and loan associations, total resources, \$39,351,338. There were 32 national banks in the state with combined assets on June 30, 1952, of \$259,829,000, demand deposits of \$83,113,000 and time deposits of \$149,251,000. Receipts, expenditures and bonded debt of the state government for the year ending June 30, 1952, were, respectively: \$78,571,693; \$69,498,424; \$5,554,500. For the year ending June 30, 1951, they were, respectively: \$64,759,416; \$65,451,912; \$6,973,500.

Agriculture.—Rainfall was subnormal, especially during June and July, with resulting crop damage. The state was designated a "disaster area" by the U.S. department of agriculture, thus qualifying for help from the Farmers Home administration.

Table I.—Principal Crops of Maine

Crop	Indicated 1952	1951	Average 1941-50
Corn, bu.	540,000	540,000	490,000
Oats, bu.	2,349,000	5,016,000	3,243,000
Barley, bu.	126,000	192,000	129,000
Buckwheat, bu.	32,000	63,000	107,000
Hay, tons	867,000	796,000	790,000
Potatoes, bu.	51,000,000	45,835,000	61,882,000
Apples, bu.	715,000	1,154,000	861,000
Beans (dry), 100-lb. bags	58,000	80,000	67,000

Source: U.S. Department of Agriculture.

Table II.—Principal Industries of Maine, 1951

Type of Industry	Value of Product	Employees	Wages
Food and kindred products	\$ 147,382,788	19,490	\$ 20,767,202
Textile mill products	318,093,657	26,386	75,492,891
Apparel and other finished products made from fabrics and similar materials	10,188,882	1,678	2,809,752
Lumber and wood products (except furniture)	117,633,792	20,468	41,125,107
Furniture and fixtures	4,456,775	689	1,385,428
Paper and allied products	298,998,358	17,640	62,773,785
Printing, publishing and allied industries	13,429,780	1,836	5,191,943
Chemicals and allied products	11,030,063	641	1,463,421
Leather and leather products	141,852,954	18,867	39,970,223
Stone, clay and glass products	8,546,444	1,111	2,995,019
Primary metal industries	3,405,889	280	681,816
Fabricated metal products (except ordnance, machinery and transportation equipment)	28,820,421	2,435	6,992,396
Machinery (except electrical)	49,178,897	5,808	19,592,191
Transportation equipment	36,598,553	11,935	45,648,493
Professional, scientific and controlling instruments; photographic and optical goods; watches and clocks	764,856	72	210,364
Miscellaneous manufacturing industries	3,917,535	562	982,896
Not elsewhere shown	1,162,572	197	326,995
Total	\$1,195,462,216	130,095	\$328,409,922

Source: Maine Department of Labor and Industry.

Fisheries.—During 1951 there were 220,922,749 lb. of fish landed at Maine ports, valued at \$15,606,047 to the fishermen. Corresponding figures for 1950 were 353,279,886 lb. and \$14,688,742, respectively. This represents a decrease in quantity of 37%, but an increase of 6% in value. The value of the principal species, with weight in pounds in parentheses, included: lobster, \$7,214,107 (20,759,471); rosefish or ocean perch, \$3,428,816 (73,941,835); clams, \$1,372,803 (5,689,604); herring, \$913,689 (59,738,075). The pack of Maine sardines in 1951 amounted to 1,676,764 standard cases, valued at \$14,635,352 to the packers. This was a decrease of 50% in volume and 31% in value from 1950.

Manufacturing.—The average number of weekly hours worked in manufacturing by production workers (Aug. 1952) was 41.1 and average hourly earnings were \$1.346. The nonagricultural labour force of the state employed in Aug. 1952 was 286,400, which was 3,500 or 1.2% more than a year previous. There were 1,691 manufacturing establishments in Maine in 1951, with production valued at \$1,195,462,216 and 130,095 employees, of whom 38,542 were women. Average annual earnings were \$2,524 in 1951. (E. F. D.)

Mineral Production.—Table III shows the tonnage and value of those mineral commodities produced in Maine in 1949 and 1950, listing all items with value exceeding \$100,000. Data for 1951 were not yet avail-

Table III.—Mineral Production of Maine, 1949–50

Mineral	(Short tons)			
	1950	Value	1949	Value
Cement	1,127,000	\$2,705,000	1,057,000	\$2,526,000
Feldspar	19,000	125,000	20,000	130,000
Sand and gravel	4,897,000	1,726,000	4,605,000	1,394,000
Stone	310,000	2,214,000	259,000	2,026,000
Other Minerals		691,000		666,000
Total		\$7,461,000		\$6,742,000

able. Maine ranks 44th among the states in the value of mineral production, with 0.06% of the U.S. total.

Maize: see CORN.

Makins, Sir Roger Mellor (1904–), British diplomat, was born in London, Feb. 3. He was educated at Winchester and at Christ Church, Oxford, was called to the bar in 1927 and a year later entered the foreign office, subsequently serving in Washington, D.C. (1931–34), and Oslo, Nor. (1934). As an economist he was assistant adviser on League of Nations affairs, foreign office, 1937 (adviser in 1939); adviser to the British delegation, International Labour conference, New York city, 1941; and to the U.K. delegation to the first conference of the Food and Agriculture organization, 1945.

Makins was British minister, Washington, from 1945 to 1947 when he returned to England to become, until 1948, assistant undersecretary of state, foreign office, in charge of the economic and North American political departments. In November he succeeded Sir Oliver Franks as British ambassador in Washington. He was knighted in 1949.

Malan, Daniel François (1874–), South African prime minister, was born at Riebeck West, Cape Province, May 22. He was educated at Victoria college, Stellenbosch, and at the University of Utrecht, Neth., where he obtained the degree of doctor of theology. He returned to South Africa as a minister of the Reformed Church and in 1915 became editor of *Die Burger*, shortly afterward being elected chairman of the newly formed Nationalist party in the Cape. He was elected to the house of assembly in 1917 and during 1924–33 was minister of the interior, health and education.

At the outbreak of World War II Malan supported Gen. James Hertzog's policy of neutrality, and on the general's death in 1942 became leader of the opposition. In the 1948 election the Nationalist party obtained a majority and Malan succeeded J. C. Smuts as prime minister.

His government carried out a policy of *apartheid* (racial segregation) but in 1952 a constitutional crisis arose over a decision of the appeal court in March which invalidated the Separate Representation of Voters act. Maintaining the sovereignty of parliament, his government introduced the High Court of Parliament bill. Speaking in his constituency on Feb. 29, he said that the government's policy was to keep white and white together and black and black together and described the colour problem as the most important in the country. On May 13 he stated that the nontransference of the three British territories to the union had become an acute problem and could not continue indefinitely.

After the high court had revalidated the Voters act in August, and the Cape supreme court had declared the high court's act itself invalid, Malan on Aug. 30 described South Africa as being at the crossroads: "the choice is between life and death of the nation."

Malaria: see TROPICAL DISEASES.

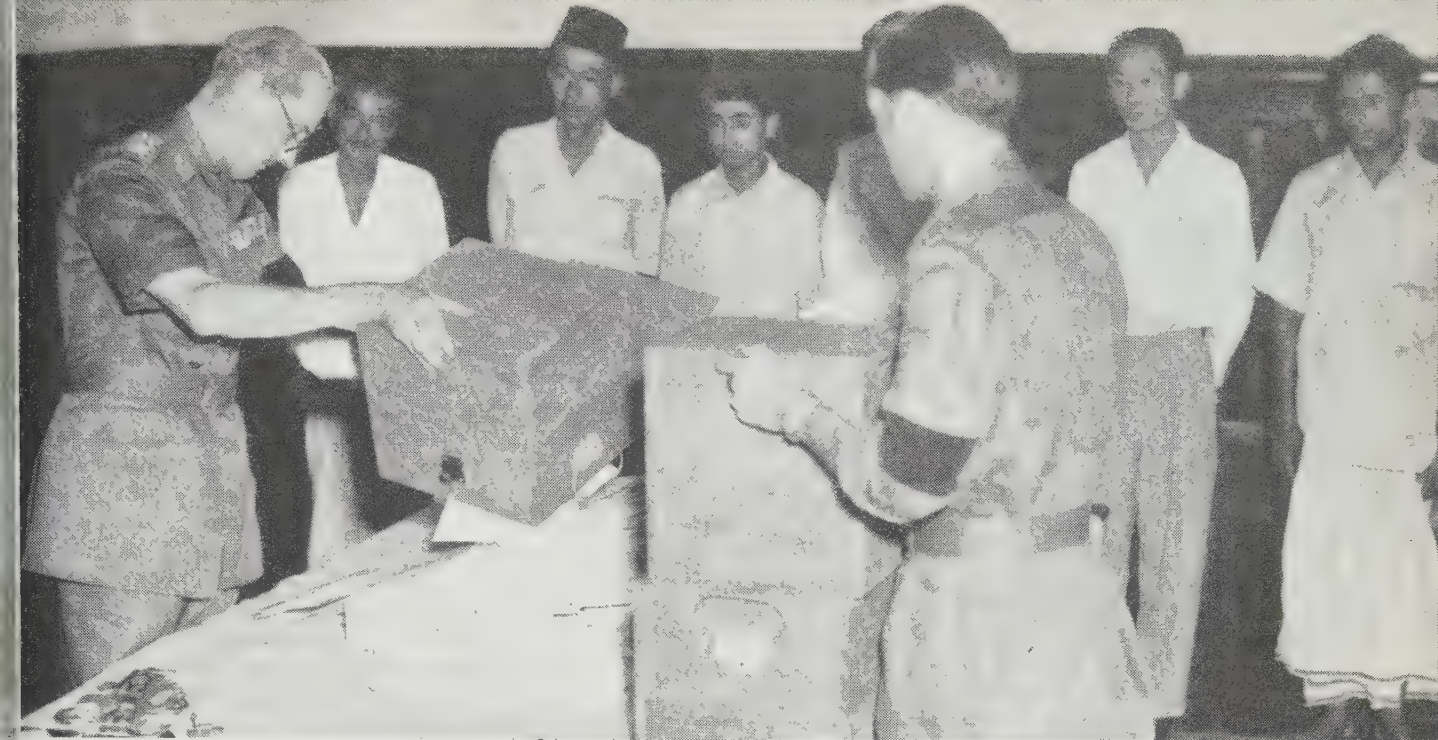
Malaya, Federation of. The Federation of Malaya consists of the British settlements of Malacca and Penang and the protected states of Johor, Kedah, Kelantan, Negri Sembilan, Pahang, Perak, Perlis, Selangor and Trengganu. Area: 50,680 sq.mi. Pop.: (1947 census) 4,908,086, including 2,427,834 Malays, 1,884,534 Chinese (38.4%), 530,638 Indians and Pakistanis; (1951 est.) 5,337,240. Religion: Malays are Moslem; Indians mainly Hindu; Chinese Buddhist, Confucian and Taoist. Chief towns (pop. 1947 census): Kuala Lumpur (federal cap., 175,961); Penang or Georgetown (189,068); Ipoh (80,894); Malacca (54,507); Taiping (41,361). High commissioner in 1952, Gen. Sir Gerald Templer. Commissioner-general for the U.K. in southeast Asia, Malcolm MacDonald.

History.—The struggle against the Communist terrorist forces in the Malayan jungle and villages entered its fifth year in 1952. The sharp rise in the number of casualties inflicted on the terrorists continued. The number killed in 1950 had been 639; in 1951 it was 1,025; and between March and August 1952 it was 648. Casualties among security forces and civilians were fewer. The increasing effectiveness of the campaign against the Communists was mainly the result of the resettlement under police protection of about 500,000 Chinese "squatter" cultivators carried out by the former high commissioner Sir Henry Gurney and by Lieut. Gen. Sir Harold Briggs (director of operations, 1950–51); this had denied sources of supply to the terrorists. Measures taken by the new high commissioner, Gen. Sir Gerald Templer, who took over in February, to improve police training and reorganize intelligence services were a contributory cause. There were 70,000 regular and special constables and about 250,000 home guards operating against the Communists. A special drive was made to recruit more Chinese to the police and home guard. One important step taken by the new high commissioner was the establishment of the Malayan Federation regiment, open to all racial communities. Arrangements were made to add a sixth battalion to the Malay regiment (which was open only to Malays). In July a law was passed making all able-bodied men in Malaya liable for two years' service in the armed forces, the police or civil defense organizations; and the federal legislative council adopted a resolution favouring the early introduction of conscription.

The background to the military and police struggle against Communist terrorism in 1952 was the continuing effort to transform the triracial society of Malaya into a unified nation. In September, after nationality laws had been passed in the nine Malay states, a new federal law was enacted under which 60% of the Chinese and 30% of the Indians in the country automatically became citizens.

The holding of local elections went forward gradually. In February 12 members (out of 18) were elected to the Kuala Lumpur municipal council. The terms of the franchise (still confined to Malayan citizens) disqualified about half the adult population, and out of the 60,000 qualified to vote only 11,600 had registered. But 70% of the registered electors went to the polls after a lively election campaign. In May an ordinance providing for elected village boards was referred to a select committee of the legislative council. It enabled such boards to be constituted both in new Chinese villages in resettlement areas and also in Malay villages. The new boards were to be corporate bodies with power to raise local rates up to limits to be fixed by resident commissioners or prime ministers of states, and their main tasks were to be the establishment and upkeep of schools, playgrounds and community centres, village roads and sanitary works.

Another political development was the formation of the Pan-Malayan Labour party, an amalgamation of existing Labour parties in Singapore, Penang, Malacca and Selangor; by the en-



SIR GERALD TEMPLER, Malayan high commissioner (left), examining responses to an appeal for information on Communist guerrillas in a Malayan town in 1952. Opened in the presence of town witnesses (background), the replies resulted in the arrest of 28 collaborators

of the year it had about 10,000 members. The panracial Independence for Malaya party which had been formed under the chairmanship of Dato Onn in 1951 made only slow progress, after a defeat in the municipal elections at Kuala Lumpur where it secured only 2 seats out of 12, all but 1 of the remainder being won by an electoral alliance between the two communal parties, the United Malays National organization and the Malayan Chinese association.

World economic developments had a serious effect on Malaya's social and economic progress in 1952. The price of rubber, upon which the economy of the country depended, fell during the year, and in June the wages of the 350,000 rubber workers were reduced. In August the Malayan Planting Industries Employers' association announced further cuts of 11% to 14%; these were rejected by the trade union on the grounds that the cost of living to the workers had fallen very little. In October both sides agreed to accept the decision of an arbitration board appointed by the Malayan government. The fall in rubber prices also had serious consequences for the progress of the six-year development plan that had been launched in 1950. Expenditure on the antiterrorist war had in any case priority and in the estimate for 1952 this amounted to about half the total outlay. The yield from the export duty on rubber, Malaya's principal source of revenue, during the first half of 1952 was about Mal. \$20,000,000 less than expected; a budgetary deficit at the end of the year seemed likely. The expansion of housing and the educational and health services was retarded.

The Rural and Industrial Development authority, which had made a slow start in 1951, succeeded in allocating nearly twice as much money in the first half of 1952 as it had expended in the whole of the previous year. (See also SINGAPORE.)

Education.—(1951) Government-maintained and aided schools: Malay 1,704 (285,864 pupils); Chinese 1,171 (206,343 pupils); Indian 881 (37,164 pupils). English-instruction schools: 111,354 pupils. Junior technical schools 4; agricultural colleges 1; teachers' training colleges 2. University of Malaya (1950-51): 850 students.

Finance.—Monetary unit: Malayan dollar, valued at 32.67 cents U.S. in 1952. Budget: (1951 revised est.) revenue Mal. \$733,268,678, expenditure Mal. \$534,474,066; (1952 est.) revenue Mal. \$640,951,250, expenditure Mal. \$660,605,065.

Foreign Trade.—(1951) Imports Mal. \$1,131,000,000, exports Mal. \$1,978,000,000. Main sources of imports: U.K. Mal. \$335,000,000;

Indonesia Mal. \$196,000,000; Thailand Mal. \$187,000,000; Australia Mal. \$51,000,000. Main destinations of exports: U.K. Mal. \$609,000,000; U.S. Mal. \$403,000,000; France Mal. \$155,000,000; Italy Mal. \$90,000,000; Germany Mal. \$79,000,000.

Transport and Communications.—Registered motor vehicles (1951): private 30,750; commercial 9,193. Railways (1951): passenger train miles 1,194,000; passenger journey miles 6,735,000; freight train miles 2,268,000; paying freight ton-miles 243,097,000. Air transport: passengers carried (1951) 186,532. Shipping: ships (75 tons and over) entered and cleared (all federal ports, 1951) 6,729; total tonnage 19,359,176 net registered tons. Telephones (1951): 28,086.

Agriculture.—Main crops (metric tons, 1951): rubber 605,300; rice (1950-51) 702,923; copra 160,042; coconut oil 86,469; copra cake 55,661; tea 3,684,158 lb.; pineapple (canned exports) 16,913. Livestock (1951): buffaloes 228,300; oxen 248,600; goats 251,800; sheep 22,300; pigs 280,200; horses 500. Fisheries (1951): total catch 159,179 tons, value Mal. \$239,825.

Mining.—Production (1951): tin in concentrates 57,167 tons; coal 382,539 tons; iron ore 846,803 tons; gold 17,018 troy oz. (D. A. SN.)

Malenkov, Georgi Maximilianovich (1901-), soviet politician, was born at Orenburg (Chkalov), Russia, Jan. 8. He joined the Communist party in April 1920. After the civil war, he studied at Moscow Higher Technical college and was secretary of the Communist students' organization. In 1925 he was appointed personal secretary to Joseph Stalin. In March 1934, before the purges of 1936-38, Stalin appointed him member of the Orgburo and head of the personnel department. The 18th congress of March 1939 elected him member of the central committee of the All-Union Communist party which, in turn, appointed him one of the five secretaries. On Feb. 21, 1941, he became a substitute member of the Politburo and on June 30, 1941, a member of the State Defense committee. For organizing aircraft production during World War II he was awarded in 1943 the title of Hero of Socialist Labour and the Order of Lenin. On March 19, 1946, he was appointed one of 10 full members of the Politburo and one of 8 (there were 14 by 1952) deputy chairmen of the council of ministers. Besides Stalin, only Malenkov was simultaneously a member of the government and of the three key party bodies: Politburo, Orgburo and secretariat. On Sept. 22-23, 1947, he and A. A. Zhdanov were soviet delegates at the conference in Wilcza Gora, Pol., at which the Cominform was created. At the 19th congress of the Communist Party of the Soviet Union (as it was now called), Malenkov read the main report (Oct. 5, 1952) and was elected member of a commission of 11 to revise the party program (Oct. 13) as well as of the new central committee of 125 (Oct. 14). The

last-named elected him on Oct. 16 to the new key party bodies: a 25-member presidium and a 10-member secretariat.

Malta. This British colony consists of a group of Mediterranean islands about 58 mi. south of Sicily; only Malta and Gozo are important. Area: Malta 94.9 sq.mi.; Gozo 25.9 sq.mi. Pop.: (1948 census) 305,991; (1951 est.) 313,000. Language: Maltese and English; Italian also spoken. Religion: Roman Catholic. Principal towns (pop. 1948): Valletta (cap., 57,156 including suburbs), Sliema (24,294), Hamrun (17,124), Birkirkara (16,070). Governor in 1952, Sir Gerald Creasy; prime minister, G. Borg Olivier.

History.—The year 1952 began inauspiciously with a strike of 10,000 admiralty, war office and air ministry employees during a dispute about an increase in the cost of living bonus. Rioting occurred on March 6, and 29 people, mostly strikers, were injured. The strike ended when a trade union delegation was sent to negotiate with the service departments in London. Activity at Valletta and the movement of military and naval forces increased during the early part of the year because of the disturbed situation in the Suez Canal Zone. Early in June G. Borg Olivier, the prime minister, led a delegation to the colonial office in London which discussed the continuing economic difficulties of the island and sought financial aid. After prolonged negotiations the secretary of state for the colonies announced in the house of commons on Aug. 1 that Olivier had not accepted the assistance offered, which included £500,000 in 1952 and up to £200,000 a year for five years starting in 1953 to assist emigration. Next day Olivier stated that he had, in fact, accepted the offer. (K. G. B.)

Education.—Primary schools (1949–50) 111 (attendance 38,708); state-aided secondary 4 (attendance 587); technical 3 (attendance 353); private elementary and secondary 64 (attendance 15,877); university, 300 students, 65 professors and lecturers.

Finance and Trade.—Currency: sterling. Budget (1951–52): revenue £6,402,045; expenditure £6,856,975. Foreign trade (1951): imports £19,040,000; exports £1,878,000.

Manchuria: see CHINA.

Mandated Pacific Islands: see TRUST TERRITORIES.

Mandates: see TRUST TERRITORIES.

Manganese. There is a long list of minor producers of manganese ore, but the few major producers listed in Table I account for more than 90% of the world total, according to the reports of the U.S. bureau of mines.

United States.—The salient statistics of the manganese

industry in the United States are shown in Table II.

Domestic ore production in the early months of 1952 showed little change from the 1951 level, with 44,300 tons through May, but receipts of foreign ore increased to 1,027,679 tons of general imports and 855,466 tons of imports for consumption. Consumption of ore was 764,416 tons and of ferromanganese 368,057 tons in the five months. (G. A. Ro.)

Manitoba. Central province of Canada, Manitoba was established as a province on July 15, 1870; area 246,512 sq.mi. (26,789 sq.mi. water); pop. (1951 census) 776,541, approximately 60% urban. Capital, Winnipeg, 235,710. Other cities: St. Boniface, 26,342; Brandon, 20,598; Flin Flon, 9,899; Portage la Prairie, 8,511.

History.—The lieutenant governor (representing the crown) in 1952 was Hon. R. F. McWilliams; the premier, Hon. Douglas L. Campbell. In Dec. 1951 Ronald D. Turner and Edmond Prefontaine were appointed provincial treasurer and minister of municipal affairs in the government, respectively. The political issues decided by legislative action during the year were the completion of the Pine falls power site, the awarding of contracts for the development of McArthur falls power site, both on the Winnipeg river, and the purchase of the Winnipeg Electric company power and distribution system by the government's Manitoba hydroelectric board; decision on the routes of the Trans-Canada highway through the province; the franchise to the Indians; provision for women to sit on juries; and the power taken by the government for civil defense operation.

Education.—In 1951 there were 108,625 elementary and 20,243 secondary school pupils in 4,900 classrooms. The University of Manitoba, Winnipeg (state supported), with six colleges affiliated, celebrated its 75th anniversary in Oct. 1952 with an enrolment of 4,652 in all faculties. Total public expenditure on education by the government in 1951–52 was \$7,025,000, with an estimate for 1952–53 of \$7,800,000. The government increased its support for public schools by increasing its guaranteed grant from \$1,600 to \$1,700 per elementary room and to \$750 for secondary-school rooms, and aided in the capital cost of new schools.

Public Health and Welfare.—Mental institutions at Selkirk, Brandon and Portage la Prairie and a psychopathic hospital in Winnipeg had a total registration of 2,902 and total under treatment during the year of 3,759. Under the Manitoba health plan there was an increase from two to three laboratory and X-ray units (diagnostic). Thirteen local health units served a population of 281,546 and there were 31 district hospitals and 30 medical nursing units, 4 each being additions. A federal health survey was completed and it recommended a national voluntary health insurance plan, and of the total of 60 recommendations the priority was for the expansion of the Manitoba health service program. As of March 31, 1951, four provincial jails administered by the attorney general reported 2,635 admitted, with \$291,279 expended upon maintenance. There were 504 cases of poliomyelitis reported in 1952 to Oct. 15.

Communications.—At Dec. 31, 1951, the all-weather road mileage was 9,244. A \$4,000,000 highway construction program was under way in 1952. Trans-Canada highway routes were approved by Manitoba and Canadian governments in 1952, both east and west of Winnipeg. There were 4,837 mi. of railway, exclusive of yard tracks and sidings. There were seven radio stations and two short-wave outlets. Stevenson field, adjacent to Winnipeg, was the air centre for both civilian and military use and training. The government-owned telephone system at the close of 1951 had 155,663 subscriber stations, with 146 exchanges and radio telephonic service to northern Manitoba centres.

Finance.—The estimated revenue for 1952–53 was \$49,588,639 and expenditures were \$49,099,606. The total gross debt at March 31, 1952, was \$158,389,962, of which \$93,777,048 was self-sustaining, with sinking funds held of \$16,072,680. A new five-year tax rental agreement with Canada was expected to produce \$24,725,000 for 1952–53 and a guarantee of \$18,634,954 during its tenure.

Agriculture.—In 1952 wheat, oats, barley and flax reached a record in volume. The 1951 gross production reached a value of \$306,725,000 and an estimated net of \$245,179,000. The Canadian wheat board had not completed payment of deferred and final amounts to farmers for 1951, and these would increase the agricultural values for the year.

Fishing and Fur.—Commercial fishermen numbered 6,578 in 1951–52, catching 35,457,600 lb. valued at \$4,263,187 (market value \$7,664,503), and consisting of pickerel, whitefish, saugers, pike and tullibees. Fur trappers numbered 9,630 in 1951–52, of whom 2,574 operated registered trap lines; the wild catch was valued at \$2,384,745. Furs valued at \$1,936,845 were produced on 516 fur farms.

Manufacturing.—The estimated gross production of 1951 totalled \$596,000,000. Pay rolls approximated \$116,000,000 in about 1,650 establishments employing 44,000 persons. In 1951, 25 new industries were established.

Mineral Production.—Production in 1951 was estimated at \$28,397,000, of which \$21,048,000 represented metals. Of the 62 oil wells drilled in Manitoba during the five-year period, 28 were drilled in the first eight months of 1952. Production was limited by marketing facilities.

(J. L. J.)

Table I.—World Production of Manganese Ore

	(In thousands of short tons)					
	1945	1946	1947	1948	1949	1950
Brazil	269.7	164.4	156.7	155.7	165.2	163.5
Chile	8.2	22.6	21.3	24.4	?	37.0
Cuba	218.5	144.2	55.5	32.0	68.9	87.3
Egypt	?	?	?	66.0	152.7	167.7
Fr. Morocco	49.0	63.9	126.0	236.3	257.8	316.7
Gold Coast	675.9	857.2	560.7	705.6	830.0	796.7
India	235.5	283.5	505.2	589.0	723.3	988.9
Japan	94.5	32.4	38.0	60.6	110.2	147.6
South Africa	126.2	262.1	317.7	304.7	722.2	871.9
U.S.S.R.	2,480.3	1,870.2	1,980.2	1,980.2	1,650.2	2,200.2
United States	182.3	143.6	131.6	131.1	126.1	134.4
Total	4,670	4,050	4,250	4,620	5,240	6,390

Table II.—Data of Manganese Industry in the U.S.

	(In thousands of short tons)					
	1945	1946	1947	1948	1949	1950
Mine shipments . .	182.3	143.6	131.6	131.1	126.1	134.5
Metallurgical ore .	174.3	134.4	125.4	119.8	110.9	122.9
Battery ore . . .	8.0	8.3	6.2	10.8	15.0	11.5
Imports, general . .	1,461.9	1,749.2	1,541.8	1,256.6	1,544.5	1,834.9
Imports for consumption	1,311.3	1,514.5	1,298.0	1,473.5	1,423.8	1,925.1
Brazil	242.3	86.0	157.8	160.5	201.6	136.3
Chile	91.3	143.5	42.1	10.3	14.7	7.8
Cuba	293.6	158.7	57.1	32.8	60.8	96.9
Gold Coast	208.7	279.7	217.3	217.8	281.8	378.1
India	210.5	321.3	284.5	314.8	357.2	642.5
Mexico	51.6	39.8	50.9	53.8	53.6	34.5
South Africa	62.0	243.7	192.9	283.4	275.6	510.0
U.S.S.R.	151.3	241.9	289.0	384.1	151.0	65.6
Consumption	1,485.9	1,136.7	1,419.1	1,538.4	1,360.0	1,650.4

Mao Tse-tung (1893–), chairman of the Chinese Communist party and of the Chinese People's Republic, was born in Shao Shan, Hunan province, and educated in Changsha. He helped found the Chinese Communist party in Shanghai in 1921; became political commissar of the 4th Red army in 1931; and in 1934 at the second All-China Soviet congress became the unchallenged leader of the Chinese Communists. He led his forces into northwest China to escape the Chiang Kai-shek "annihilation campaigns" in 1934–35. Between 1937 and 1943 he led his forces against the invading Japanese, but after the Japanese surrender in 1945 supervised the Communist armies that drove Chiang's nationalists back until, by the autumn of 1949, the Communists were strong enough to launch their People's regime. Early in 1951 Mao was quoted by the Indian delegate to the United Nations as threatening an irreconcilable break with the west if the Chinese should be branded aggressors in Korea. After the extended truce negotiations began in Korea, however, Mao was reported in western press dispatches as being the centre of a rift with the U.S.S.R. Subsequent events of 1951 and 1952 did not tend to bear out these reports. An indication of internal unrest in China was given by Mao, however, in a new year's message of Jan. 2, 1952, in which he declared that the Chinese should "launch vigorously and uncompromisingly a large-scale struggle against (domestic) corruption, waste and bureaucracy."

Maple Sugar: see SUGAR.

Maps: see CARTOGRAPHY.

Margarine: see VEGETABLE OILS AND ANIMAL FATS.

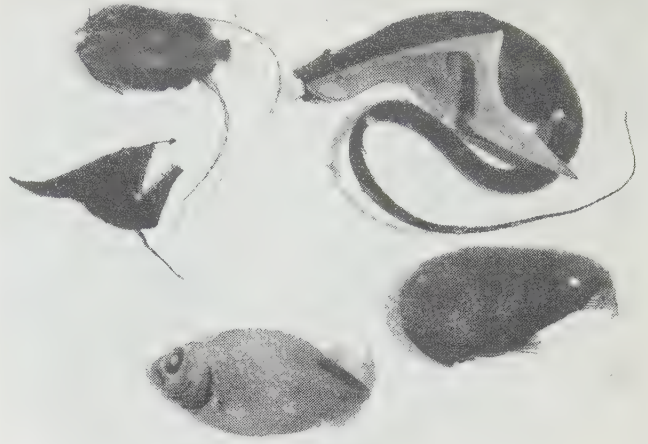
Mariana Islands: see MARSHALL, CAROLINE AND MARIANA ISLANDS; TRUST TERRITORIES.

Marine Accidents: see DISASTERS.

Marine Biology. In most ocean areas where sonic apparatus has been used, a layer of uncertain origin, the "scattering layer," has been observed to reflect and scatter the sound waves. This layer is found closer to the surface at night than during the day, when it frequently descends to more than 1,000 ft. In the North Atlantic several workers have attributed it to swarms of the shrimplike euphausiids. An interesting study by Hilary Moore of the Marine laboratory of the University of Miami, Coral Gables, Fla., developed a relation between the sea temperatures and the distribution of these animals. In an earlier paper, Moore had postulated that the temperatures encountered at the extremes of its vertical diurnal migration were the limiting factors in the geographical distribution of a species. He now considered the effects of temperature in greater detail and arrived at a theoretical relationship with these two temperatures which fit the known distributions very well.

Although diving apparatus had been used for many years to observe the larger marine organisms, it was only in 1952 that a serious effort was made to use such means to study the movements of small planktonic animals. Richard Baimbridge, who had been studying the swimming behaviour of planktonic animals in laboratory apparatus, made a number of descents at Milford Marine station in Scotland to observe copepods. He found that the population occupied two zones: an upper 12 in. where the movement was generally a "hop and sink" one and a deeper one where individuals were found swimming in equal numbers vertically upward or downward. He concluded that the diurnal vertical migrations are a direct and straight swimming up and down and not, as had been suggested by some authors, the result of random movements.

The annual cycles of weekly observations of open ocean plankton were completed at the United Nations Weather Station



CREATURES FOUND at one-mile depths in the Pacific ocean in 1952 by scientists of the Scripps Institution of Oceanography. At top left are two sea devils which have lights to lure prey, and at top right, a gulper with a mouth several times larger than its head

Baker (56° 30' N., 51° 00' W.) in boreoarctic waters between Labrador and Greenland and Station Easy (35° 30' N., 48° 00' W.) in a subtropical area of the Central Atlantic. The zooplankton collections were being analyzed at the University of Rhode Island, Kingston.

For several years depth finders had been used to locate schools of fish, particularly in the North sea, and a new instrument, the "Fischlupe," especially made for this purpose, was released during 1952 by a German firm. A new program was started at the Woods Hole Oceanographic institution to evaluate the echo characteristic of schools of fish in order to tie together fishery biology and modern underwater acoustics. Similar studies, which were being continued during the 1952 season, were reported upon by the Marine laboratory in Aberdeen, Scot. When the sound echos are to be used for some purpose other than detecting fish, the fish-produced reflections are often very troublesome. Experiments conducted at the University of Hawaii, Honolulu, resulted in the discovery of a chemical irritant which completely breaks up schooling patterns of fish within two minutes in dilutions as great as 1 part in 100,000,000.

Underwater sounds of biological origin were being investigated by the University of Rhode Island, where records were made of the sound produced by 27 species of North Atlantic coastal fish and 26 species from Bermuda waters. The analysis included frequency range and the principal frequency components. Particular attention was also given to the mechanisms involved in the character of the sound and the significance of its production.

The use of underwater photography was extended at the Woods Hole Oceanographic institution by the successful photography of a two-mile strip of the sea scallop bed on the Nantucket shoals at a depth of 150 ft.

The Scottish Marine association announced the receipt of a grant from the Development fund of the British government for the development of underwater television for biological observation. The association had already published a recognizable figure of an euphausiid shrimp taken with a prototype of the apparatus.

At the University of Hawaii two species of tuna were for the first time penned and subjected to experimental procedures. The behaviour of these fish toward various chemicals indicated that chemical attraction might be well within the practicality of use on schools in the open ocean.

The blue-fin tuna was studied at the University of Miami in

co-operation with other Atlantic coast organizations. Plane spotting and serological studies were used in addition to the more conventional methods. It was suggested that these tuna originate in the Caribbean.

Experimental fishing cruises were conducted by the Woods Hole Oceanographic institution off the coast of New England beyond the usual range of the commercial fisheries in depths between 150 and 550 fathoms. Many lobsters were taken not only from relatively shallow water but also from depths where they had never before been reported. William Schroeder, in charge of the operation, came to the preliminary conclusion that these may occupy deep water at all times and that the inshore populations may originate in part from the deeper grounds. Schroeder estimated that about 5,000 lb. of lobsters might be taken with a trawl within several days of fishing. Large quantities of redfish (sold as "ocean perch" after filleting) were obtained southeast of Halifax, N.S., and it was believed that they also represented a population separate from those in shallower water.

The University of Miami was experimenting with the use of electric currents to drive shrimp and fish out of rough ground into areas accessible to the trawling apparatus used by the commercial fishermen.

A study of the quahog or hard clam (*Venus mercenaria* L.) conducted at the Woods Hole Oceanographic institution showed that clam farming would not be profitable in the open sand flats because of the action of predators. While the attempt was abandoned, a great deal was learned about the biology of the principal predators, the boring snail and the horseshoe crab. The possibility of growing clams in artificial ponds in salt marshes was being investigated. Growth studies of these clams were being carried out in Narragansett bay by the University of Rhode Island. The Woods Hole Oceanographic institution also investigated the causes of the failure of the blue point oysters in one of the large bays on the south shore of Long Island and found the cause to be pollution from the numerous duck farms on the tributaries to the bay. The results were so interesting to those working with the more general problems of pollution that the study in the area was to be continued even though the original task had been completed.

Although shipworms every year damage piles and other wooden structures having in sum an enormous replacement value, it had never been certain whether they actually digest the wood or merely cut it away to make a burrow to lie in. Investigations at the Marine laboratory of the University of Miami showed that shipworms definitely digest the wood, an important piece of information in planning how to poison the boring organisms. (See also OCEANOGRAPHY; ZOOLOGY.) (J. C. AG.)

Marine Corps, U.S. During 1952 the status of the United States marine corps was restated and confirmed by the passage of public law 416, which set the minimum strength of the corps at three divisions and three aircraft wings. This law, an amendment to the National Security act of 1947, provides that the commandant has co-equal status with members of the joint chiefs of staff on all matters directly concerning the corps.

In Jan. 1952 the 3rd marine brigade, which was organized the previous summer, was redesignated the 3rd marine division and the 3rd marine aircraft wing was recommissioned at Cherry Point, N.C. The division was located at Camp Pendleton, Calif., and the wing was based at Miami, Fla.

The strength of the corps at the beginning of the year was about 217,000, and at the end of the year was more than 230,000.

Basically specialists in amphibious operations, marines continued to participate in manoeuvres throughout the world. In

"Mainbrace," a NATO (North Atlantic Treaty organization) naval exercise, 2,000 marines made a landing in Denmark. The Nevada atomic bomb tests in May allowed marines from every major unit within the corps to gain practical experience in atomic warfare.

The fostering of "Vertical Envelopment," or the landing of shock troops by helicopter, continued to be a prime project of marines in the U.S. and in Korea. Speed, flexibility and surprise, available through the utilization of helicopters, are essential in carrying out one of the primary functions of the corps—that of providing fleet marine forces of combined arms, for service with the fleet in the seizure or defense of advanced naval bases and for the conduct of such land operations as may be essential to the prosecution of a naval campaign.

The 1st marine division and the 1st marine aircraft wing continued to play a major role in the Korean conflict. The 1st division, as a part of the 8th army, served on the eastern front during early 1952, but was moved to the extreme western front during the summer. Most of the squadrons of the 1st marine aircraft wing remained under the operational control of the 5th air force, while others operated from aircraft carriers of naval forces, far east.

The United States marine corps is a separate service within the department of the navy. It was headed in 1952 by Gen. Lemuel C. Shepherd, Jr., who took office on Jan. 1 of that year for a four-year term as commandant of the marine corps.

(L. C. SD.)

Marriage and Divorce. Generally, marriage and divorce rates declined throughout the world during 1952, continuing the trend discernible during the last half of 1951. Birth rates in many countries were near the high levels that had prevailed since 1946. In a report issued by the United Nations there were tabulated about 50 different types of aid provided by 19 nations to defray costs of bringing up a family or to encourage large families.

United States.—With a marriage licence rate of only 9.6 per 1,000 population based upon the first six months of the year, a total of 1,450,000 marriages was estimated for 1952, a decrease of 9% from the preliminary total of 1,594,900 marriages for 1951, which represented a loss of 6% from the revised total of 1,667,200 marriages for 1950. Median ages for marriage in 1951 were 22.6 years for men and 20.4 for women. It was believed that births during the year might approach the 3,833,000 registered in 1951, since the total births for the first half of 1952 were estimated at 1,852,000, a birth rate of 24 per 1,000 population. Including annulments, the number of divorces was not expected to exceed 375,000—a possible increase of 1% above the 371,000 divorces granted in 1951 but a decrease of nearly 3% from the 385,100 divorces of 1950. In comparison with the record divorce peak of 1946, the rate of 2.4 divorces per 1,000 population in 1951 was about 44% lower.

From studies and surveys during 1951, there were reports that more married women and fewer single women were taking jobs outside the home than was true during the peak years of World War II. Babies born to college graduates of 1942, according to the Population Reference bureau, Washington, D.C., were sufficiently numerous to replace their parents (average for men 1.51, for women 1.23, babies). In 1950, according to the bureau of the census, there were 966 males to each 1,000 females in the population, with males outnumbering females in 16 states. The University of Chicago began full operation of its Family Study centre and the Yale university medical school established a marriage counselling service.

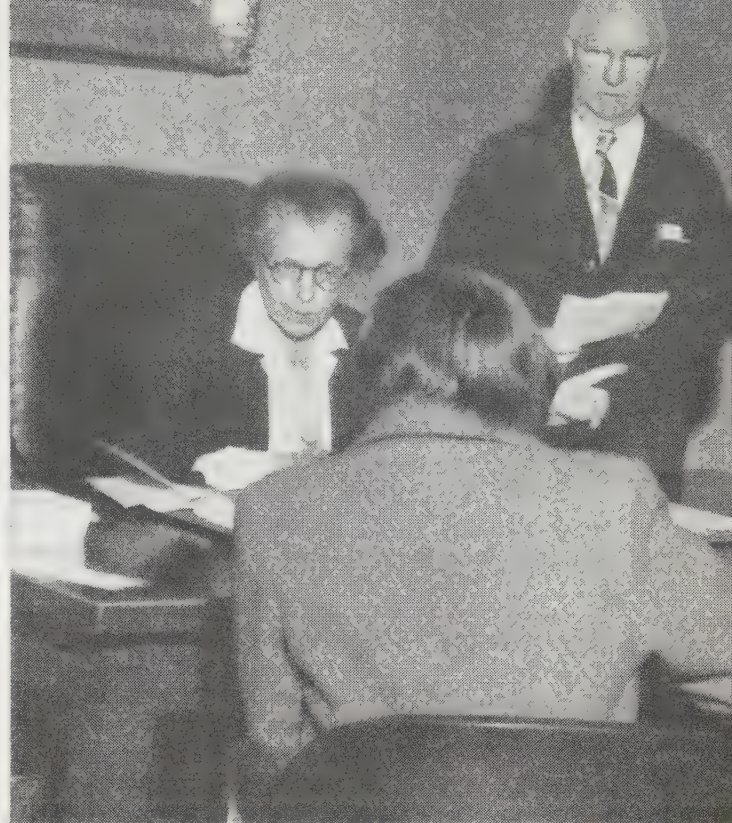
Great Britain.—In England and Wales a study disclosed that the mean ages of men and women at marriage were 29.5 and

6.5 years, respectively, in 1952 with more men marrying at age 23 and more women at age 21 than any other years. The estimated marriage rate of 8 per 1,000 population indicated a slight decline from the rates of 8.1 for 1951 and 8.2 for 1950. Of 11,000,000 married couples, about 300,000 had solved the housing problem with trailers. It was believed that the divorce rate would be approximately one-half that of 1947 when about 60,190 divorces were granted (*see* Table). The total number of births probably would not exceed 725,000. The Catholic Marriage Advisory Council opened new counselling centres at Birmingham, Bristol and Liverpool. The National Marriage Guidance Council held its sixth annual conference at Bournemouth May 22-25.

In Northern Ireland, where the marriage rate had decreased more than one-half since 1852, by royal assent on Dec. 20, 1951, the minimum ages at marriage of 14 years for boys and 12 years for girls were raised to 16 years for both. The Belfast Marriage Guidance Council, organized in 1947, reported continuing growth.

Canada.—A more liberal plan of old-age pensions (\$40 per month), for persons 70 years old and older who had lived in Canada for more than 20 years, became effective for about 1,000,000 citizens on Jan. 1, 1952. It was believed that marriage and divorce rates continued the slight decline experienced in 1951. In Quebec there was considerable pressure not only to raise the legal minimum age of marriage (12 years for girls and 14 years for boys) but also to give wives the right to own property, to have legal authority over their children and to be entitled to legal separation on the same grounds as husbands.

Other Countries.—In Czechoslovakia the government was utilizing coercive measures to increase the number of wives working in industry. Since 1950 the National (Lutheran) Church of Finland had given regular courses in marriage; in Helsinki alone nearly one-third of all engaged couples attended the courses. The Finnish Population association, through its eight clinics, offered advice and assistance in problems of subfertility, contraception and sexual maladjustment. In France the marriage and divorce rates showed a slight decline; the birth rate reflected little change although measures were taken to outlaw the sale of contraceptives and to repress abortions. The divorce rate in west Germany for 1951-52 was estimated to be about 7% lower than the rate for 1950 (1.6 per 1,000 population);



JUDGE ANNA KROSS (seated left) hearing a case at the informal home term court of New York city in 1952. Goals of the still experimental court were to keep families together by using social work methods and the authority of the court, avoiding formal court action wherever possible

16 counselling centres had been established by the German Conference for Youths and Marriage-Counselling. The Federal German government at Bonn stated that there were about 3,200,000 women, or 13% of the female population, who had been divorced or legally separated, compared with 1,900,000 in 1939.

In a public opinion poll conducted in northern Italy by the Instituto Doxa, 52% of those polled said that it was very important that timely sex education be given to both boys and girls; only 6% regarded such education as harmful. Up to Jan. 1, 1952, there were 6,454 marriages of United States citizens in Japan to Japanese women, of whom 3,240 already had been admitted to the United States. In general, marriage and divorce rates in Japan declined. Under the Eugenic Protection law, 11,403 sterilizations had been performed by 1950. Because of the widespread use of contraceptives and an increase in abortions, Japan's birth rate dropped to 25.6 per 1,000 population. From Norway came the report that 90% of women were expected to marry, with 50% of them marrying before the age of 25 years; the birth rate continued to decline.

In India, with marriage of girls under the age of 14 years legally prohibited, child marriage had virtually disappeared; the prime minister, Jawaharlal Nehru, urged wider use of sterilization, and the World Health organization, assisted by the Indian government, campaigned to popularize contraception. In Mexico, through a new clinic directed by Alfonso Seguro Albitier, eugenic marriage counselling was made available to workers in the ministry of health and welfare. A survey in Palestine of Arab women disclosed that 25% of Moslems and 12% of Christians were marrying before the age of 15 years. In Egypt the Fetwa committee of the University of Al-Azhar, Cairo, ruled that Moslem women throughout the world are not entitled to vote or to hold public office but that they have equal "private authority" with men in such matters as the guardianship of minors and administration of property. From Australia came an estimate that one in every ten marriages ended in divorce, a

Divorces per 1,000 Population in Selected Countries, 1935 to 1950

Country	1935-39	1940-44	1945	1946	1947	1948	1949	1950*
North and South America								
United States	1.8	2.4	3.5	4.4	3.4	2.9	2.6	2.5
Canada . . . . .	.2	.3	.4	.6	.7	.5	.4	.4
Dominican Republic . . . . .	.2	.2	.4	.4	.4	.5	.4	.4
Guatemala . . . . .	.1	.1	.1	.1	.1	.1	.1	.1
Mexico . . . . .	.2	.3	.4	.4	.4	.3	.3	.3
Puerto Rico	1.0	1.4	1.6	1.9	1.7	1.5	1.6	1.6
Venezuela . . . . .	.1	.1	.2	.1	.2	.2	.1	.1
Europe								
Austria . . . . .	.3	.9	.7	1.9	1.9	2.0	1.8	1.5
Belgium . . . . .	.4	.3	.4	.7	.8	.8	.7	.6
Czechoslovakia . . . . .	.4	.4	.6	1.0	.9	1.0	†	†
Denmark . . . . .	.9	1.1	1.4	1.8	1.7	1.7	1.7	1.6
England and Wales . . . . .	.1	.2	.4	.7	1.4	1.0	.8	.7
Finland . . . . .	.4	.6	1.5	1.3	1.3	1.1	.9	.9
France . . . . .	.6	.4	.6	1.3	1.4	1.1	1.0	.8
Germany . . . . .	.8	.8	†	1.1†	1.7†	1.9†	1.7†	1.6†
Netherlands . . . . .	.4	.4	.5	1.1	.9	.8	.7	.6
Norway . . . . .	.4	.4	.6	.7	.7	.7	.7	.7
Portugal . . . . .	.1	.1	.1	.1	.1	.1	.1	.1
Rumania . . . . .	.6	.6	.9*	1.3*	1.2*	†	†	†
Scotland . . . . .	.1	.2	.4	.6	.5	.4	.5	.4
Sweden . . . . .	.5	.7	1.0	1.0	1.0	1.0	1.1*	1.1
Switzerland . . . . .	.8	.7	.9	1.0	.9	.9	.9	.9
Africa, Asia and Oceania								
Australia . . . . .	.4	.6	1.0	1.0	1.1	.9	.8	†
Ceylon . . . . .	.2	.2	.3	.3	.3	.2	.2	.2
Egypt	3.4	4.0	4.3	4.3	3.9	3.9	†	†
Israel§	5.8	3.2	2.5	2.6	2.2*	1.4*	1.7*	2.1
Japan . . . . .	.6	.7	†	†	1.0	1.0	1.0	1.0
New Zealand . . . . .	.6	.7	1.1	1.3	1.2	1.1	1.1	.9
Turkey . . . . .	.2	.3	.3	.3	.4	.3	.4	†

*Provisional. †Not available. ‡Federal Republic. §Includes Jewish population only.
Adapted from "Divorces per 1,000 Population in Selected Countries, 1900 to 1950,"
Metropolitan Life Insurance Company, Statistical Bulletin, vol. 33, no. 6, p. 7.

rate thought to be slightly lower than that prevailing in New Zealand. A government grant of £500 was made toward the expenses of a marriage counselling service in Adelaide. (See also BIRTH STATISTICS.)

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Marshall, Caroline and Mariana Islands.

The Marshall, Caroline and Mariana Islands, stretching from about 1° to 20° N. lat. and from 130° to 170° E. long., constitute, with the exception of Guam (*q.v.*) in the Marianas, the Trust Territory of the Pacific Islands. The territory contains about 2,130 islands in 96 distinct island units of which 64 are inhabited, with a combined land area of about 687 sq.mi. Truk, in the centre of the territory, is 4,931 mi. W. of San Francisco, Calif., and 1,832 mi. E. of Yokohama, Jap. The population on June 30, 1952, totalled 57,205. Three-fifths of the population live on the six principal island units: Saipan, the Palaus, Yap, Truk, Ponape and Majuro. The majority of the population is Christian.

History.—The territory, over which the U.S. received a trusteeship from the United Nations in 1947, was under the administration of the U.S. navy until July 1, 1951, when control was transferred by presidential order to the department of the interior. Elbert D. Thomas, former senator from Utah, became the first high commissioner on Jan. 8, 1951, with headquarters at Honolulu, T.H. The territory is divided for administrative purposes into six administrative districts: Saipan, Palau, Truk, Ponape, Yap and Marshall Islands. Each of the districts, except Truk and Saipan, has its own native congress acting as an advisory body to the district civil administration. There are 117 municipalities in the territory; municipal officers, who are natives, are elected by the people in 86 municipalities, are hereditary officials in 19, and are appointed in 12.

A new contract was concluded in April 1952 between the high commissioner and the Phosphate Mining company of Tokyo to continue the shipment of phosphate to Japan.

Education.—On June 30, 1952, there were 146 public schools, of which 139 were elementary, 6 were intermediate, and 1 was the Pacific Islands Central school at Truk, which is an advanced, technical and normal school. These schools had 329 teachers, of whom all but 28 were native instructors, and 7,061 pupils. There were also 20 mission schools with 84 teachers and 1,695 pupils. Instruction is in English except in the first three grades where the native dialect is used. Educational expenditures were estimated at 8% of total expenditures during fiscal year 1952.

Finance.—During the fiscal year ended June 30, 1952, local revenues totalled \$602,242, and U.S. appropriated funds totalled \$4,511,509. Expenditures totalled \$5,062,639.

Production and Trade.—Phosphate production in the year ended June 30, 1952, totalled 102,290 long tons. In the fiscal year ended June 30, 1951, the value of exports totalled \$1,750,162, of which copra represented \$1,100,000 and phosphate rock \$500,000. Other exports included handicrafts, shells, fruits and vegetables, and sponges. Imports were valued at \$1,848,885; the most important imports were food, \$1,123,576; clothing, \$295,906; and tobacco, \$113,040. The U.S. and Japan were the major sources and destinations of the territory's imports and exports.

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Marshall Plan: see MUTUAL SECURITY PROGRAM.

Martin, Archer John Porter (1910—), British biochemist, was born in London, March 1. He was awarded the Nobel prize for chemistry jointly with Richard Laurence Millington Synge (*q.v.*) on Nov. 6, 1952, for his share in the evolution of their method of identifying and separating chemical elements by chromato-

graphic analysis. Martin was educated at Bedford school and at Peterhouse, Cambridge. He and Synge worked together on chemical research at Cambridge and from 1941 to 1943 at the Wool Industries Research association's laboratories at Leeds Yorkshire; Martin had come to the Leeds laboratories in Oct. 1938 and went on working there until 1946. In Oct. 1948 he went to the National Institute for Medical Research, London where he became head of the physical chemistry division.

Martin, Joseph William, Jr. (1884—), U.S. congressman, was born on Nov. 3 in North Attleboro, Mass. He worked as a newspaper reporter and later bought the *Evening Chronicle* of North Attleboro, also becoming publisher of the *Franklin Sentinel* (Mass.). He served in the Massachusetts state legislature from 1912 to 1917. In 1924 he was elected to the federal house of representatives and was re-elected consistently thereafter, being named house minority leader in 1939 and speaker of the house in 1947. He was a delegate to the Republican national convention at Chicago, Ill., in 1916 and at Cleveland, O., in 1936; chairman of the Republican national committee, July 1940 to November 1942; and permanent chairman of the Republican national convention in 1940, 1944, 1948 and 1952.

Martinique. This island, situated in the Lesser Antilles, is a French overseas *département*. Area: 427 sq.mi. Pop.: (1946 census) 261,595; (1951 est.) 276,000; mainly coloured (Negro or mixed). Language: a French patois. Religion: Roman Catholic. Capital: Fort-de-France (pop. 1946, 66,006). Prefect: Christian Laigret.

History.—Claudius Petit, French minister of reconstruction, visited the Antilles in 1952 and studied the problems of town development. Fort-de-France airport was completed: it was in the international class and had a runway of 1,700 m. An air service between Martinique and Guadeloupe was established with three flights a week. Sheds for storing bananas were built at the harbour. The road system was further extended. Reafforestation of the mahogany woods was begun.

Education.—All children of school age have primary education; there is one *lycée* and an Institute of Political, Legal and Economic Studies.

Foreign Trade.—Imports (1951): 10,910,000,000 fr. (incl. 9,500,000,000 fr. from the French union). Exports (1951): 7,500,000,000 fr. (almost all to the French union), mainly sugar (2,577,000,000 fr.), rum (2,075,000,000 fr.), bananas (2,281,000,000 fr.). The currency is the metropolitan franc. In 1952, U.S. \$1=350 fr.

Transport and Communications.—Ships entered (1951): 664.

(Hu. DE.)

Maryland. One of the original states of the United States, long known as the "Old Line State," and, in later years, as the "Free State," Maryland is bounded on the north by Pennsylvania and Delaware, on the east by Delaware and the Atlantic ocean and on the south and west by Virginia and West Virginia. The total area is 10,577 sq.mi., of which 696 sq.mi. are water. Pop. (estimated as of July 1, 1952) 2,460,397. Urban population in 1950 was 69% of the total. Annapolis (pop. 1950, 10,047) is the capital. Other cities in the state, with 1950 population figures, are Baltimore (949,708), Cumberland (37,679), Hagerstown (36,260), Frederick (18,142) and Salisbury (15,141).

History.—The general assembly, at its 1952 session, proposed a constitutional amendment to revise the state budgetary system, in order that budgets could be presented on a "performance" or "program" basis. Other companion statutes were enacted to assure that the fiscal program, including capital improvements and all other parts of the fiscal program, would be presented to the legislature at one time.

The lower house of the general assembly in 1952 began the use of an electric voting system.

The principal state officers in 1952 were as follows: governor, Theodore R. McKeldin (Rep.); comptroller, J. Millard Tawes (Dem.); attorney general, Hall Hammond (Dem.).

Education.—In 1951-52 there were 815 public elementary and occupational schools in the state (including Baltimore), with a total enrolment of 249,103 and a teaching staff of 7,415. There were 219 secondary and vocational schools, with an enrolment of 132,689 and a teaching staff of 5,916. In the elementary schools, approximately 2 students in 9 were Negro and in the higher schools, approximately 2 in 11 were Negro. The enrolment in Catholic schools for the state was 60,961 white and 2,578 Negro students. The enrolment in non-Catholic private schools was 13,711 white and 173 Negro students. Thomas G. Pullen, Jr., was state superintendent of schools.

Social Insurance and Assistance, Public Welfare and Related Programs.—As of June 30, 1952, old-age assistance was being given to 11,276 persons, with a total cost of \$5,532,513 for the fiscal year ended June 30, 1952; public assistance was being given to 461 needy blind persons, with a total cost of \$261,085 for the fiscal year; aid to dependent children was being given to 4,989 families, with a total cost of \$5,282,029 for the fiscal year; and 2,692 persons were receiving aid to the permanently disabled, with a total cost of \$1,399,403 for the fiscal year. Unemployment compensation benefits paid for the benefit year ending March 31, 1952, were \$9,175,424.

As of June 30, 1952, there were 1,611 white inmates and 2,654 Negro inmates, or a total of 4,265 inmates, in the four state penal institutions; of these, 37 were white females and 147 were Negro females.

Communications.—The state roads commission expended \$56,521,208.05 for the fiscal year ended June 30, 1952. The total road mileage in the state highway system, as of Jan. 1, 1952, was 4,736.26, in the county system 12,177.24 and in the municipalities 1,204.74. As of Dec. 31, 1951, there were 1,275 line miles and 2,740 track miles of steam railroads and 45 line miles and 60 track miles of electric interurban railways. As of June 30, 1952, there were 731,366 telephone instruments in service in the state, of which 325,656 were in Baltimore.

Banking and Finance.—As of June 30, 1952, state banks and trust companies had deposits of \$1,048,806,837.64 and total resources of \$1,141,166,849.33; mutual savings banks had deposits of \$417,282,042.55 and total resources of \$469,593,062.32. There were 59 national banks in the state with deposits of \$755,338,000 and total resources of \$814,167,000. The total resources of all state and national banks were \$2,425,526,711.65. As of Dec. 31, 1950, savings and loan and building and loan associations were computed to have assets of \$475,842,437.

State appropriations for the year ended June 30, 1952, were \$170,213,293.52 and expenditures were \$162,504,634.39. State appropriations for the year ending June 30, 1953, were \$176,576,899. The total bonded indebtedness of the state as of June 30, 1952, was \$91,531,000, and there was a general surplus of \$15,481,041.91.

Agriculture.—Maryland farmers received an estimated \$86,654,000 from the marketing of principal farm crops during the year 1951, compared with \$76,261,000 in 1950. Cash receipts from livestock and livestock products amounted to \$188,911,000 in 1951, compared with \$160,975,000 in 1950. Total cash receipts from farm marketings amounted to \$275,155,000 in 1951, compared with \$237,236,000 in 1950.

Manufacturing.—The Maryland employment security board estimated the number of manufacturing establishments as of June 30, 1952, to be 2,267 employing 243,716 persons, compared with 254,201 as of June 30, 1951, and the nonmanufacturing establishments (covered by unemployment compensation) at 37,129 employing 375,081 persons, compared with 59,211 as of June 30, 1951. The total pay roll for the three months ended June 30, 1952, was manufacturing, \$222,636,205; nonmanufacturing \$259,263,909, making the total quarterly pay rolls for the 13-week period \$481,900,114 compared with \$449,227,882 for the similar period of 1951. The amount of unemployment compensation benefits paid during

April, May and June 1952 was \$3,137,216.

(C. N. E.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in Maryland in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Maryland ranks 37th among the states in value of mineral output, with .19% of the U.S. total.

Masonic Fraternity: see SOCIETIES AND ASSOCIATIONS, U.S.: Freemasonry.

Massachusetts. A north Atlantic state of the U.S., Massachusetts was admitted to the union on Feb. 6, 1788. It is popularly known as the "Bay state." Area: 8,257 sq.mi., including 350 sq.mi. of water; population (U.S. census 1950) 4,690,514, of which 84.4% was urban. The capital is Boston (pop. 801,444); other important cities are Worcester (203,486); Springfield (162,399); Cambridge (120,740); Fall River (111,963); New Bedford (109,189); Somerville (102,351); Lynn (99,738); Lowell (97,249); Quincy (83,835); Newton (81,994); Lawrence (80,536).

History.—The Massachusetts legislature, or the general court, as it is called, holds its sessions annually. The 159th session adjourned on July 5, 1952. Outstanding among the appropriations during the session was authorization for a bond issue of \$200,000,000 to pay for the construction of a toll highway from Boston to the New York state line, linking this with the cross-state highway which New York was building from New York city to Buffalo. Another \$200,000,000 bond issue was authorized for highway purposes. An appropriation of \$35,000,000 was made for capital outlay covering the cost of the construction of new buildings.

The grand total of appropriations for the fiscal year was \$277,729,903.61, an increase of \$15,394,877.95 over the previous year.

The total number of acts enacted during the year amounted to 633; resolves numbered 107. The Little Hoover Recess commission recommended and secured a reorganization of the state department of health and the department of public welfare. The youth service board for the care, treatment and training of juvenile delinquents was also organized. The new law required the full-time services of all three members of the board, and specified that one of them must be a woman. A new housing authority law provided for the creation in every city and town in the commonwealth, except Boston, of a corporate civic body to be known as the "Redevelopment authority." The purpose of this law was to improve substandard or decadent areas, and to provide housing projects for families of low income in rural areas as well as in the cities and large towns.

Several very generous amendments were made to the pension laws, mostly in favour of members of the legislature or past members of it. After adjournment, the Taxpayers' association and the newspapers discovered that these special pension benefits were extraordinary. In the case of a former governor, the pension would amount to a payment to him of \$12,000 a year. On his death the payment would continue for the lifetime of his widow, if any. Responding to the public clamour the governor then called a special session of the legislature on Sept. 9 for the particular purpose of repealing all the legislators' pension bills from 1947 to date, and also repealing travel allowances for members of the legislature and employees of the legislature. The laws in question were repealed and the special session was adjourned on Sept. 15.

State officials for the biennium 1951-52 were: governor, Paul A. Dever; lieutenant governor, Charles F. Jeff Sullivan; secretary of state, Edward J. Cronin; treasurer, John E. Hurley; attorney general, Francis E. Kelley; auditor, Thomas J. Buckley.

Education.—In 1952, there were 1,688 public elementary schools with 429,851 pupils; 111 junior high schools with 82,564 pupils; 225 senior high schools with 125,025 pupils. The public schools of the state em-

Table I.—Leading Agricultural Products in Maryland

	1951	1950	Average, 1940-49
Barley, bu.	2,470,000	2,635,000	2,210,000
Ill Corn, bu.	20,430,000	18,832,000	16,674,000
Oats, bu.	1,980,000	1,598,000	1,237,000
Rye, bu.	5,371,000	5,162,000	6,840,000
Hay (all), tons	683,000	615,000	594,000
potatoes (Irish), bu.	1,230,000	1,396,000	1,906,000
potatoes, lb.	41,600,000	40,000,000	32,966,000
potatoes, market, bu.	1,000,000	940,000	1,114,000
potatoes, processing, tons	228,800	205,200	225,900
potatoes, sweet, bu.	800,000	946,000	1,368,000
Antaloupes, crates	312,000	301,000	467,000
sweet Corn, processing, tons	71,900	69,500	84,200
ma Beans, market, bu.	68,000	75,000	104,000
ma Beans, processing, tons	3,170,000	3,720,000	2,210,000
nap Beans, early, market, bu.	352,000	272,000	367,000
nap Beans, late, market, bu.	68,000	85,000	90,000
nap Beans, processing, tons	23,800	16,500	15,000
pples, bu.	1,127,000	1,285,000	1,413,000
peaches, bu.	476,000	389,000	51,840
strawberries, crates	288,000	180,000	228,000

Table II.—Mineral Production in Maryland

(In short tons)				
	1950		1949	
	Quantity	Value	Quantity	Value
Clays	676,000	\$ 1,158,000	586,000	\$ 923,000
Coal	648,000	3,135,000	668,000	3,505,000
Limestone	2,367,000	?	2,040,000	?
On pig*	3,525,000	?	2,932,000	?
Iron ore	65,000	692,000	64,000	618,000
Sand and gravel	5,864,000	7,790,000	4,777,000	6,029,000
Stone	1,976,000	3,459,000	1,790,000	3,036,000
Other minerals	—	6,491,000	—	6,350,000
Total	—	\$22,725,000	—	\$20,461,000

*Values for processed materials are not included in the totals.



ployed a total of 25,937 full time teachers, principals and supervisors whose average salary for the year was \$3,773. The total expenditure of the public schools for support and outlay was \$170,382,221. John Desmond, Jr., was the state commissioner of education.

Social Insurance and Assistance, Public Welfare and Related Programs.—During 1952 old-age assistance was extended to an average monthly number of 100,735 persons at an annual cost of \$83,528,078; an average monthly number of 13,100 families received assistance for the care of 31,254 dependent children at an annual expenditure of \$18,407,312; general relief was extended to an average monthly number of 17,699 persons at an annual cost of \$12,801,173.

For the year ending July 1, 1952, the commonwealth appropriated \$6,274,099.21 to maintain correctional institutions, including the state prison (611 inmates), prison colony (795 inmates), reformatory for men (701 inmates), reformatory for women (248 inmates, including babies under two years of age) and the state farm (1,935 inmates, including the criminally insane).

Banking and Finance.—Revenue receipts of the commonwealth for the year ending June 30, 1952, were \$386,513,744.73, including the sale of bonds of \$86,645,000. Expenditures for state government amounted to \$357,464,211.90. The direct gross debt was \$208,613,800, less a sinking fund of \$6,017,140.15 for a net debt of \$202,596,659.85.

The assessed valuation of the state as of Jan. 1, 1951, was \$7,517,636,132. The estimated valuation as of Jan. 1, 1952, was \$7,713,665,812.

As of June 30, 1952, bank deposits in savings banks amounted to \$3,526,353,700; total assets of commercial departments of trust companies, \$1,239,001,000; bank deposits of savings departments of trust companies \$253,061,000; total assets of credit unions, \$86,012,883 and total assets of co-operative banks, \$699,447,649.

Agriculture.—Preliminary figures of cash receipts from the marketing of farm products in 1951 totalled \$210,881,000. This included total crop cash receipts of \$57,953,000 and total livestock products of \$152,928,000.

Table I.—Principal Crops of Massachusetts

Crops	Indicated 1952	1951	Average 1941-50
Corn, all, bu.	1,692,000	1,692,000	1,690,000
Cranberries, bbl.	450,000	560,000	497,600
Apples, bu.	1,540,000	3,160,000	2,554,000
Hay, tons	534,000	540,000	552,000
Potatoes, bu.	1,820,000	1,886,000	3,157,000
Tobacco, lb.	9,171,000	10,317,000	10,694,000
Oats, bu.	216,000	200,000	181,000

Source: U. S. Department of Agriculture.

Manufacturing.—In 1951 there were 2,033 labour unions in Massachusetts. The total membership as of Jan. 15, 1951, was 605,220 (437,543 males and 167,675 females), an increase of 38,831 members over 1950 (D. A. Dy.)

Table II.—Estimated Value of Principal Products Manufactured in Massachusetts

Products	Estimated Value, 1952
Electrical machinery, apparatus and supplies	\$500,000,000
Woollen and worsted goods	490,000,000
Boots and shoes, other than rubber	390,000,000
Clothing, men's and women's, including work clothing	360,000,000
Cotton goods	235,000,000
Leather: tanned, curried and finished	225,000,000
Foundry and machine-shop products	270,000,000
Printing and publishing, book and job and newspapers	180,000,000
Rubber goods, including rubber tires and inner tubes	220,000,000
Bread and other bakery products	200,000,000
Paper and wood pulp	142,000,000
Boot and shoe, cut stock and findings	120,000,000
All other industries	3,900,000,000
Total value	\$7,232,000,000

Mineral Production.—Table III shows the tonnage and value of those mineral commodities produced in Massachusetts in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Massachusetts ranks 40th among the states in value of mineral output, with .13% of the U.S. total.

Table III.—Mineral Production of Massachusetts, 1949-1950

Mineral	(Short tons)		1949	
	Quantity	Value	Quantity	Value
Clays	155,000	\$ 139,000	156,000	\$ 136,000
Coke*	855,000	?	891,000	?
Iron, pig*	182,000	?	125,000	?
Lime	139,000	1,831,000	108,000	1,360,000
Sand and gravel	7,111,000	5,431,000	5,505,000	4,379,000
Stone	3,284,000	8,485,000	2,291,000	6,553,000
Other minerals		128,000		21,000
Total		\$16,014,000		\$12,449,000

*Values for processed materials are not included in the totals.

DRAMATIZING the death of demands for a wage increase for firemen in Chelsea, Mass., in 1952. Firemen invited the town's mayor and aldermen to a banquet at the station and then introduced their "corpse" in protest.

JOE PAYRAIS

SEPT 10 1951 - FEB. 26 1952

Massey, Vincent (1887-), governor general of Canada, was born in Toronto, Ont., on Feb. 20 and was educated at St. Andrew's college, Toronto, the University of Toronto and Balliol college, Oxford. He was president of the Massey-Harris farm implement company, Toronto, 1921-25. In 1925 he was appointed minister without portfolio in the Mackenzie King cabinet, but was defeated in the federal election of 1925. In 1926 he became Canada's first minister to the United States and served until 1930. He was high commissioner for Canada in the United Kingdom 1935-46. He returned to Canada, and in 1949 was appointed chairman of a royal commission to investigate national development in the arts, letters and sciences, presenting his report to parliament in 1951. On Feb. 28, 1952, he was installed as Canada's first Canadian-born governor general. He published *Good Neighbourhood, and Other Addresses in the United States* (1930), *The Sword of Lionheart and Other Wartime Speeches* (1942) and *On Being Canadian* (1948). (C. Cy.)

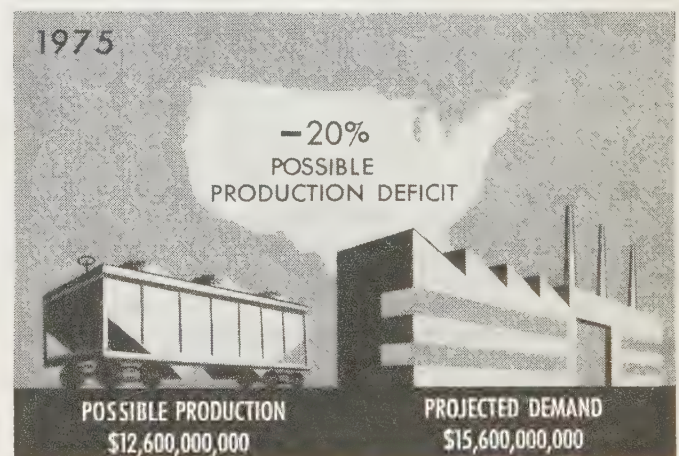
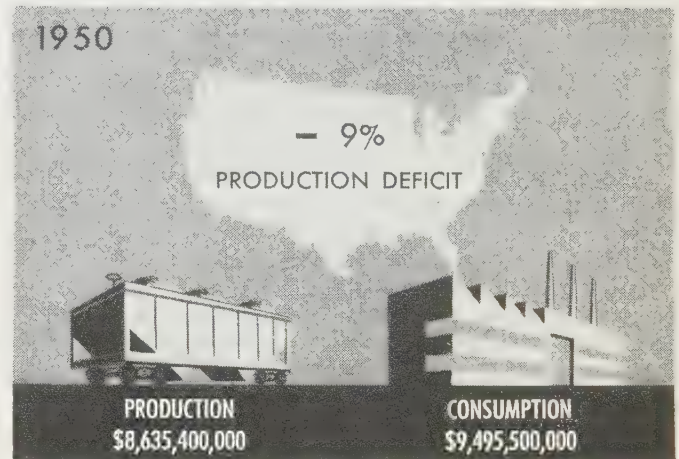
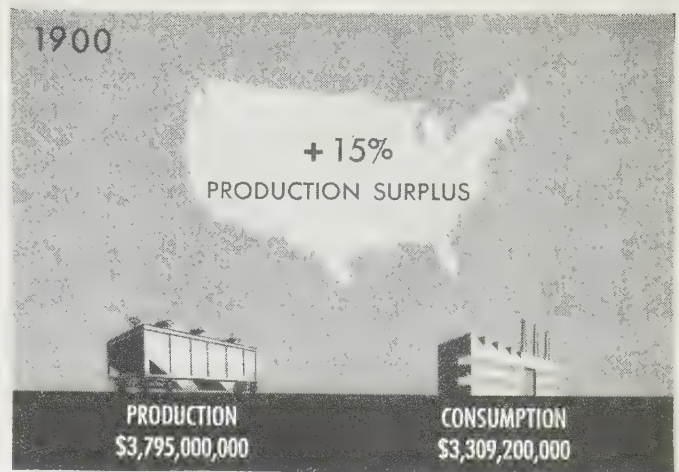
Materials Policy Commission. On Jan. 22, 1951, Pres. Harry S. Truman constituted the President's Materials Policy commission, under the chairmanship of William S. Paley, and in his letter of instructions directed the commission to make "an objective inquiry into all major aspects of the problem of assuring an adequate supply of (production) materials" for the United States' long-range needs. Specific attention was to be given to the "needs and resources of the nations with which the United States is co-operating closely on military security and economic matters."

The five-man commission including, besides Paley, George R. Brown, Arthur H. Bunker, Edward S. Mason and Eric Hodgins, selected the decade of the 1970s, with 1975 as a typical year in that decade, and made estimates of the nation's and the free world's requirements as of that date. It gauged the consistency and adequacy of private and government practices, policies and programs to supply those needs.

In its report, *Resources for Freedom*, transmitted to the president on June 23, 1952, the commission described their assignment as an "undertaking of staggering proportions." and listed some of the areas that had to be studied: a survey of a multitude of individual materials and the resources for them; a consideration of the productive forces of technology and energy and the obstacles that tend to hold them back; the special materials problems of security; the relationship of private investors to the governments of resource countries; the effects of markets on production—the scores of political and economic forces that bear upon materials in domestic and world trade. It presented its five-volume report "only as a beginning," and stated that the task of analysis, and of meeting materials needs, must be carried on co-operatively by government and private citizens day by day and year by year.

Findings.—The report summarized the United States materials position in these words: "consumption of almost all materials is expanding at compound rates and . . . pressing harder and harder against resources which, whatever else they may be doing, are not similarly expanding."

These facts were cited: Between the outbreak of World War I and the present time the United States consumed more of most metals and mineral fuels than had been used by all the world in all history. With only 9.5% of the population of the free world, the United States was using more than half of the materials produced. With only 8% of the land area of the free world, it was using its reserves much more rapidly than all the rest combined: 8% of its known petroleum reserves were used in 1950 compared with 3.2% of reserves elsewhere in the free world; 6% of its lead, compared with 4.4% elsewhere; 5.9%



THE U.S. OUTGROWS its resource base. Production and consumption of materials other than food and gold in 1935-39 dollars (Source: President's Materials Policy Commission)

of its iron ore compared with 0.18% elsewhere.

As a result of these pressures and circumstances, the United States had crossed the great industrial divide. It formerly produced more than it consumed; by 1952 it was consuming more than it produced. In 1900 the United States exported a net surplus equal to 15% by value of what it consumed; in 1950, it had to import a net of 9% to supply its deficit. To meet expanded needs for 1975, the United States would want to import 20% of a greatly increased consumption. Compared with 1950 imports of \$900,000,000 in terms of pre-World War II dollars, the country would want imports worth \$3,000,000,000 in 1975.

These estimates were based on the calculation that the total national production of goods and services in the United States (the gross national product) would double again between 1950 and 1975, as it had every 25 years during the preceding century, and attain a level of \$556,000,000,000 in 1950 dollars. This calculation was based on estimated growth of population to 193,000,000 by 1975 (bureau of the census figure), a work force of 82,000,000 working a week 15% shorter than in 1952 but increasing its productivity at a rate of 2.5% per year compared with the recent 2.1%. Increased population and increased average income would both increase demand.

Requirements for materials would not, however, increase at the same rate. In 1900 each dollar of raw materials cost supported \$4.20 worth of finished goods and services; in 1950, the raw materials dollar supported \$7.80 worth after discounting for changes in the general price level. On the basis of this trend, a doubling of the national level of production would require a 50% to 60% increase in the supply of materials. This would mean a rise from the 2,700,000,000 tons used in 1950 to about 4,000,000,000 tons in 1974.

Estimates of demand for groups of materials were necessarily rougher than for the total economy and, within the groups, calculations for individual materials were even more difficult. They had to be based on assumptions—for example, that price relationships among materials would remain unchanged—that obviously would not hold good, but which did provide target estimates that helped the commission to assess problem areas.

On this basis, the commission found that demand for minerals would increase 90%, with wide variations among minerals—iron ore, copper, lead, zinc, 40% to 50%, aluminum more than 300%, magnesium 1,700% to 1,900%; demand for timber products, 10%; agricultural products, 40%; water for industry, more than 100%; energy (total, all forms), nearly 100%, electricity alone, 260%.

Estimates for other nations of the free world were not made in detail, but the commission projected economic growth for the free world outside the United States at about the same rate, or a little faster, than that of the United States, with some less-developed countries expanding their economies more rapidly, some industrial nations at a lesser rate.

The key problem for the United States, as the commission saw it, was not that the country might run out of materials, but rather that it faced the "threat of having to devote constantly increasing effort to win each pound of materials, or unit of energy, from resources which are dwindling both in quantity and quality." A rise in the "real cost" of materials—defined as the labour-hours and capital invested per unit of material and energy produced—could cut the potential size of total production, slow expansion and make the rising standard of living falter by diverting productive energies that otherwise would produce output of higher value. Such a development could slow or reverse the trend that had contributed heavily to prosperity and the rising standard of living in the past—the steady reduction in man-hours per unit of output.

Recommendations.—To meet soaring demand, and to do this in a way that would encourage rather than impede economic growth, the commission recommended three courses of action for industry and government: (1) getting more materials and more energy from domestic resources by attacking the technological, physical and economic barriers that presently limit supply; (2) making better use of materials by more efficient design and processes and by using abundant substitute materials for scarce ones; and (3) helping to increase production in other countries and importing more materials on terms beneficial to both producers and consumers. The commission made more than 70 specific recommendations and proposed basic policy to carry

out these three courses of action.

To "renew the renewable resources"—timber products, agricultural products, industrial water—the commission laid its chief emphasis on improving technology and providing incentives, credit and services for putting technology to work. For timber, federal support of state regulations of cutting practices was emphasized, with federal regulation to come later if state action failed. For agriculture, the need for individual farm management plans and for flexible credit was stressed, as was the importance of a price structure responsive to changes in demand for specific materials. The commission saw the industrial water problem as requiring wide river-basin co-operation, with emphasis on using water to produce the highest economic return and on eliminating pollution.

To increase mineral resources, the commission emphasized exploration and greater efficiency in recovery, extraction and use of minerals, coupled with increased recycling of scrap. A census of minerals should be taken every five years, geological mapping should be stepped up (only 11% of the United States and Alaska so far had been mapped), research increased on new techniques to find hidden ore bodies (believed as massive as those already found) and on all aspects of materials handling. The commission recommended incentives: continuation of tax depletion allowances, more liberal tax allowances for minerals exploration, financial assistance to small mining companies. It proposed reform of mining laws and leasing of public lands to permit large-scale exploration. Pointing to the need for greater efficiency in use, the commission cited that only 65% of a tree finds a useful end in industry, that 50% of coal and more than 50% of oil was left underground. In urging that technology seek not only synthetic substitutes, but also ways to substitute abundant materials for scarce, the commission stated that only about one-third of the 90-odd elements entered strongly into industrial use.

In the energy field, the commission urged more study on extracting oil from shale and research on recovering, transporting and utilizing coal as the one fuel available when other supplies fail. The commission cited the need to develop remaining economic hydroelectric resources, called attention to the Columbia, Niagara and St. Lawrence projects and, in connection with the latter, pointed out that the seaway project also would provide relatively safe transportation in wartime for Canadian and Labrador iron ore. The commission emphasized that private enterprise would do most of the job of supplying necessary energy and called attention to the need for looking at the energy supply as a whole rather than as a group of separate sources. It estimated that in perhaps 50% of all use it was possible to change from one energy source to another. Atomic energy and solar energy were cited as the hope of the more distant future and research in these areas was urged.

The commission saw rapid progress in technology as an essential, with increased supplies of energy, to achieving material advances in all areas. It called sharp attention to the shortage of technically trained people and to the fact that there was no central place where research and technology could be pulled together and gaps in industrial and government programs pointed out. It stated that there was no substitute for a "broad frontal attack" by technology on the materials problem as a whole.

As tasks for technology, the commission listed: (1) to foster new techniques of discovery of hidden ore bodies, estimated to contain as much material as already had been found; (2) to bring into the stream of use materials which so far evade our efforts; (3) to apply the principle of recycling and re-using materials more and more broadly; (4) to learn how to deal with low concentrations of useful materials; (5) to

lessen and eliminate the need for scarce materials by substituting ones that exist in great abundance; (6) to develop and use more economically the resources that are renewable in nature.

The commission placed heavy emphasis on the need for increased imports of many materials and for developing foreign resources for free world use. The fact that industrial nations need more materials, and that many underdeveloped free nations have them to export and could use the proceeds to enlarge their economies and raise their living standards, was termed a prospect "dazzling in its promise."

The commission pointed out, in underlining the United States requirements for materials, that it is completely self-sufficient in only two metals—molybdenum and magnesium—and that, of nearly 100 materials used by industry, the United States supplies its own needs for one-third, produces part and imports part of another third, and imports almost all of the remaining third. It was beginning to import high-grade iron ore and recently became a net importer of petroleum.

The commission saw the need for the United States to face up to its changed materials position in its political and economic thinking and to reject a policy of self-sufficiency as no more than a "self-imposed blockade." In essence, the reason was that self-sufficiency would cost too much; that use of imports which had a lower real cost than domestic production would contribute to general economic growth and, hence, increase military strength which depends on it. The commission recommended reducing and eliminating "obsolete" tariffs on materials heavily imported and urged repeal of the "Buy American" acts.

To open foreign sources of raw materials in less-developed, resource-rich countries—the Americas, Africa, south and southeast Asia and the middle east—the commission saw the need for a new "economic statesmanship" among private investors and, on the part of resource nations, a recognition of the mutual benefits of development and hence a balanced, fair and stable treatment of investors. The commission recommended: (1) government agreements with resource countries to protect investments; (2) tax revisions to encourage investment abroad; (3) study and co-operative experimentation with methods to limit world materials market instability. To promote foreign production when military security demands it, the commission recommended long-term purchase contracts and price guarantees to resource nations and, in some cases, management contracts negotiated by the government.

Reviewing other security aspects of materials, the commission recommended that an adequately financed stock pile be made a permanent policy; that offshore oil lands be opened to slow development and oil withdrawals elsewhere be regulated to provide a quickly expandable supply if war should come; that extra facilities and transportation be provided; that techniques for using low-grade domestic materials such as aluminum clays and producing oil from shale or coal be developed; that military designers seek economies in materials use. In summary, the commission believed that the lowest cost method—with full consideration for security of supply—would serve best in this area as for the whole economy.

The commission's final recommendation was that the work of analysis, trouble-spotting and formulation of corrective policy be carried on continuously, year by year, since the details and the nature of the materials problem would change dynamically. This task was recommended to industry, private study groups and to the government.

Method.—The commission began its work of fact-finding and analysis by organizing a central staff of 100 or more persons, drawn from industry, universities and government. The staff, headed by Philip H. Coombs as executive director, with Norvell

W. Page as editor, Max Isenberg as general counsel and William C. Ackerman as executive secretary, was divided into divisions to match areas of study. An economic analysis of the staff group projected estimated future economic needs and materials supplies by studying the past and present role of materials in the national economy. Other groups sought out the significant facts about domestic resources, foreign resources, energy resources, the potential of technology and the problems of security and market policy. A legal staff made a detailed scrutiny of laws bearing on materials, and a statistical services staff amassed tables and estimates on growth of populations, production, trade and investment rates, tariffs and other duties, tax rates and price movements. A commodity panel undertook a series of studies on a score or more of specific materials. Many of the studies were placed among experts in industry, in government and international agencies and in universities to provide a rich background of fact and analysis for the commission's operations.

As facts and figures, data and analysis, began to flow to the commission, authorities and representatives of organizations in many materials fields gave their critical review of analyses and met with the commission in a series of conferences to discuss and seek solutions for the materials problems which began to loom as studies progressed. These clarifying sessions brought a wide range of experience and intelligence to bear upon such major matters as increased discovery and production of minerals and metals from domestic resources; long-run problems in procurement and expansion of foreign production; the potentials of technology in meeting materials needs; the outlook for forest products; and the future challenge to domestic energy resources. (See also BUILDING AND CONSTRUCTION INDUSTRY.)

BIBLIOGRAPHY.—"Resources for Freedom," 5 vol. (vol. 1, *Foundations for Growth and Security*, summarizes findings and recommendations of the commission; vol. 2, *The Outlook for Key Commodities*, gives the commission's studies on 30 commodities, the basic paper on future demand, estimates of reserves and resources and key statistical tables; vol. 3, *The Outlook for Energy Sources*, studies on oil, natural gas, coal and electric energy demand and supply; vol. 4, *The Promise of Technology*, general discussion and 14 studies, mostly by industry or research groups, on opportunities for technological improvement; vol. 5, *Selected Reports to the Commission*), Superintendent of Documents, Washington, D.C. (1952). (W. S. P.)

Mathematics. Events of historic importance in the international field during 1952 included the holding of the first general assembly of the International Mathematical union in Rome, It., on March 6-8. The expenses of four of the five delegates from the United States were paid by the National Science foundation, marking the first action of the foundation of this character. The U.S. delegates were made representatives of the U.S. department of state. At the assembly, Marshall H. Stone of The University of Chicago was elected by the union as its first president.

The National Science foundation began to function effectively during the year and supported mathematics principally in two ways. The division of scientific personnel and education made more than 50 awards of predoctoral fellowships and eight awards of postdoctoral fellowships in mathematics. These awards took the place of those previously made by the U.S. Atomic Energy commission. A small number of grants for research was made by the division of mathematical, physical and engineering sciences. Since the support of research in pure mathematics was being gradually dropped by the U.S. office of naval research, it was hoped that more substantial support from the foundation would be possible in the future.

The division of mathematics of the National Research council, which was set up early in 1951, continued to operate effectively. The first problem of the division was to provide more mathematical manpower. A step in that direction was the con-

struction by the executive secretary, J. A. Clarkson (following a start which had been made by J. R. Kline, his predecessor), of a roster of more than 200 mathematicians experienced in or qualified for work for national defense or for industry.

A second step toward alleviating the shortage of well-trained mathematicians was the appointment by Chairman H. Marston Morse of a committee on the regional development of mathematics with G. B. Price of the University of Kansas, Lawrence, as its chairman. While the United States had several great centres of mathematical research there were geographical regions with no centres. As a result, many talented young men had never discovered that it was even possible to become a research mathematician, and were lost to the science. The committee was to investigate the possibility of creating new centres, and it would first attempt to discover what could be done to strengthen a small number of departments of mathematics which themselves had already made strenuous attempts to create mathematical centres.

Morse also appointed a new committee on training and research in applied mathematics under the chairmanship of A. Taub of the University of Illinois, Urbana. The National Academy of Sciences subsequently negotiated a contract with the National Science foundation which provided for foundation financial support of this committee, and the work of the committee was also sponsored by the office of naval research, the office of ordnance research and the office of air research. The office of naval research was to provide the full-time services of F. J. Weyl for six months. He was to act as investigator and was to list the existing applied mathematics projects, explore the needs in this field for the national defense, industry and other sciences and report on training and teaching in applied mathematics. The committee was to hold one or more conferences at which invited speakers would present statements as to actual and optimum training programs and methods for applied mathematics of the future. The report of the committee was expected to be of great value both to the supporting agencies and to the many universities which were interested in beginning programs of training in applied mathematics.

On July 1, 1952, Morse was succeeded as chairman of the division of mathematics of the National Research council by A. Adrian Albert of The University of Chicago. The latter appointed Donald C. Spencer of Princeton university as vice-chairman of the division. J. A. Clarkson of Tufts college, Medford, Mass., was to continue to serve as executive secretary.

The problem of publishing the results of mathematical research in a time of soaring costs continued to be a vexing one. The overcrowding of mathematical research journals had been reduced somewhat by the establishment of the *Pacific Journal of Mathematics*, which was in its second year. The most urgent problem was that of obtaining stable support for the publication of *Mathematical Reviews*, an abstract journal valuable as an aid to research. (See also STANDARDS, NATIONAL BUREAU OF.)

(A. A. AT.)

Mauriac, François (1885–), French man of letters, was born at Bordeaux, Oct. 11. He was brought up in the Bordelais and the Landes and finished his education in Paris. In Paris he frequented Catholic literary circles, as he had done in his province, becoming president of the Cercle Montalembert. His first book of poems, *Les Mains jointes*, appeared in 1909 and his first novel, *L'Enfant chargé de chaînes*, in 1913. It was with his short fifth novel, *Le Baiser au lépreux* (1922), published in *Les Cahiers verts*, that he first made a great name for himself. A continuous stream of work followed, including the novels *Le Fleuve de feu* (1923), *Génitrix* (1923), *Le Désert de l'amour* (Grand Prix du Roman, 1925),

Thérèse Desqueyroux (1927), *Destins* (1928), *Le Nœud de vipères* (1932), *Le Mystère Frontenac* (1933), *Les Anges noirs* (1936), *Les Chemins de la mer* (1939), and *La Pharissienne* (1941); a *Supplément* (1928) to Bossuet's *Traité de la concupiscence*; the play *Asmodée* (1937), performed by the Comédie Française; and religious, controversial and critical essays. Mauriac became president of the Société de Gens de Lettres in 1932 and was elected to a seat in the French academy in 1933. From 1945 he devoted himself mainly to journalism, writing strongly anti-Communist editorials for *Le Figaro*; later work, however, included *Du côté de chez Proust* (1947) and a play, *Passage du Malin* (1947). In Nov. 1952 he was awarded the Nobel prize for literature.

Maurice and Laura Falk Foundation, The: see SOCIETIES AND ASSOCIATIONS, U.S.

Mauritania: see FRENCH UNION; FRENCH WEST AFRICA.

Mauritius. British colony in the Indian ocean with island dependencies of which the largest are Rodriguez and Diego Garcia. Area: Mauritius 720 sq.mi.; Rodriguez 42 sq.mi. Pop.: (1944 census) Mauritius 419,485 (57% Indo-Mauritian), Rodriguez 11,885, Diego Garcia 501, other dependencies 1,077; total pop. (1951 est.) 500,000. Languages: French and Creole French, Hindi and English. Religion: Indo-Mauritians mainly Hindu; others mainly Roman Catholic. Capital, Port Louis. Governor in 1952, Sir Hilary Blood.

History.—The 1952 sugar crop was excellent, amounting to nearly 500,000 tons, and the secondary crops which were being developed made good headway. There was a steadily increasing production of aloe-fibre, tea and tobacco. Other development projects in progress included improved domestic water supplies, irrigation of new lands and hydroelectric power. A reafforestation scheme was approved during the year and a development commissioner was appointed. There was another outbreak of poliomyelitis in April, but it was less severe than its predecessors.

(K. G. B.)

Education.—Schools (1951): primary 227, pupils 64,410; secondary 45 (including 3 government and 9 grant-aided), pupils 5,480. One teachers' training college. College of agriculture (Oct. 1951): students 30, professors and lecturers 12.

Finance and Trade.—Monetary unit: Mauritius rupee, with a value in 1952 of 21 cents U.S. Budget (1951–52 revised est.): revenue Rs. 78,098,028, expenditure Rs. 70,734,676. Foreign trade (1951; including government and military imports, excluding bullion and specie and trade with dependencies): imports Rs. 203,062,064; exports Rs. 237,005,361. Principal exports: sugar, spirits, fibre. Production (1951): sugar 484,000 metric tons, tobacco 485,688 kg., alcohol from molasses (exports) 8,900,000 l., tea 841,160 lb.

Maybank, Burnet Rhett (1899–), U.S. senator, was born at Charleston, S.C., on March 7. After service with the U.S. navy during World War I, he graduated from the College of Charleston, then entered a cotton export firm. He was an alderman of Charleston, 1927–31, mayor of the city, 1931–38, and governor of South Carolina, 1939–41. He was elected to the U.S. senate on the Democratic ticket in 1941 to fill an unexpired term and was re-elected to the senate in 1942 for the term 1943–49 and in 1948 for the term 1949–55. In Jan. 1949 he was named chairman of the senate banking and currency committee.

In the senate, Maybank ordinarily followed the Democratic party line. He did, however, support the Taft-Hartley law and joined the southern Democrats in blocking civil rights legislation. In Jan. 1950 he introduced a \$2,200,000,000 housing bill for construction of more than 200,000 homes. In 1951 he again parted with the administration when he opposed its attempts to institute price rollbacks. During the national steel strike in 1952, Maybank proposed that all strikes in defense industries be outlawed for 120 days, and that government seizure be permitted

hereafter under certain conditions. This proposal was defeated, 63 to 12.

Meat. The beef supply of the U.S. in 1952 was the largest in five years, and a near record supply was forecast for 1953. U.S. civilians in 1952 consumed 3% more red meat than in 1951. On a per capita basis, consumption was 142 lb. (carcass weight) compared with 137.6 lb. in 1951 and a pre-World War II average of 126.2 lb. Beef increased to 60.4 lb. per person against 56.1 lb. in 1951; veal increased from 6.6 lb. (1951) to 7.0 lb. Lamb and mutton increased to 3.9 lb. from 3.4 lb. in 1951; consumption averaged 6.8 lb. prewar. Pork consumption per capita of 70.7 lb. was slightly below the 1951 level of 71.5 lb. but 26% more than prewar.

Poultry meat production for 1952 was indicated at 5,750,000,000 lb., one-fourth as much as the total for all red meats. Chicken of dressed weight of 29.5 lb. was consumed by the average civilian, 2% more than in 1951 and 65% above prewar. Chickens raised on farms numbered only 617,000,000 head compared with 663,000,000 in 1951 and 20% below the 1941-42 average, but commercial broiler placements during the first nine months of the year were about 4% more than a year earlier. Turkeys were again a record crop and the average per capita consumption was 5.6 lb., 8% more than the previous year and 215% of prewar. Included were about 59,000,000 turkeys, nearly 13% more than in 1951. By late October the government had purchased 13,424,222 lb. of turkey to be delivered during November and December to the school lunch program.

Fish consumption, in fresh, frozen or canned form, was 11.4 lb. per capita, about the same as in 1951 and prewar. Imports of frozen groundfish fillets reached a rate of more than 100,000,000 lb. per year, approximately ten times that of prewar and serving about 45% of the U.S. market. Whale steak was used in considerable amounts.

Prices, though varying with types and grades of meat, trended lower in 1952, particularly in live animal and wholesale form. Three aspects deserve special mention: (1) the firmness of top-grade beef prices, whereas common grades declined significantly, in spite of the fact that 10% to 15% more cattle were fed in the corn belt, being finished to higher grades, than in 1951; (2) the general weakness and abnormal seasonal behaviour of pork prices, even in the face of a 9% reduction in hogs produced; and (3) unprofitable prices as low as 18 cents per lb. for broilers in the early part of the year. The government, to support hog prices, in April and May bought 24,490,000 lb. of pork for donation to the school lunch program. Lean pork ceilings were raised one to eight cents per pound, effective late October. In October ceilings were suspended on yearling sheep and mutton sold at wholesale.

Meat imports were high and exports were low. About 50,000,000 lb. of New Zealand beef was imported, some of it re-exported to the U.S. by the U.K. Imports of canned ham and pork products from western Germany were valued at about \$14,500,000. Meat from Mexico, embargoed since Dec. 1946, was again admitted, beginning in September. Early in the year the above-normal movement of cattle and meat to the U.S. from Canada was interrupted by the rise in the value of the Canadian dollar. Then came the complete embargo upon the discovery of foot-

Table II.—Production of Meats in Principal Producing Countries

(In millions of pounds, carcass meat basis)

Country	Beef and veal			Pork, excl. lard			Mutton and lamb		
	1951	1950	Average 1934-38	1951	1950	Average 1934-38	1951	1950	Average 1934-38
United States . . .	9,904	10,768	7,974	11,483	10,867	7,337	522	601	871
Argentina . . .	4,380	4,300	3,645	255	300	225	320	330	370
Brazil . . .	2,250	2,350	1,821	550	530	369	43	39	15
France . . .	2,138	2,161	2,200	1,609	1,763	1,494	210	243	222
Western Germany .	1,470	1,314	1,550	2,600	2,161	2,500	33	44	45
United Kingdom .	1,460	1,419	1,393	825	878	1,012	295	334	447
Australia . . .	1,431	1,390	1,275	189	173	211	592	685	716

and-mouth disease in Saskatchewan in late February. In March Canada banned meat imports during the disrupted marketing following the quarantine.

World meat production in 1951 in the principal livestock countries was estimated at approximately 73,500,000,000 lb., about 1,000,000,000 lb. more than in 1950 and 8% more than prewar. An increase of 7% in pork more than made up for slight declines in beef and lamb. Leading countries were the U.S. (21,909,000,000 lb.), Argentina (4,955,000,000 lb.), western Germany (4,200,000,000 lb.) and France (4,112,000,000 lb.). The Australian situation was described as threatening a beef famine, because two-thirds of the cattle were in the northern drought area.

Available information on per capita meat consumption in other parts of the world indicated Uruguay, 235 lb.; Australia, 228 lb.; Argentina, 225 lb.; Canada, 129 lb.; Denmark, 112 lb.; the U.K., 88 lb.; Yugoslavia, 86 lb.; France, 85 lb.; and Italy, 31 lb.

Meat exports in international trade in 1951 amounted to 4,059,700,000 lb., compared with 4,115,900,000 lb. in 1950 and 4,550,000,000 lb. prewar.

Prices were rolled back by about 10% on meats in France in mid-1952. The fresh meat ration in the United Kingdom was further reduced in January but increased moderately in July. More surprising was the announcement of one meatless day per week in Argentina. Canada supported domestic beef prices at about 25 cents per pound for "good" steers, Toronto basis. With beef and pork supplies at high levels, prices were expected to continue at support levels. (See also LIVESTOCK; VETERINARY MEDICINE.) (J. K. R.)

Medical Rehabilitation of the Disabled.

Although training programs for professional personnel to work in the field of rehabilitation as well as facilities for direct services to the handicapped increased in 1952, the incidence of new disability in the United States and Great Britain continued to be greater than the volume of rehabilitation services rendered.

The federal office of vocational rehabilitation reported that 67,000 persons in the U.S. were rehabilitated during 1952 through federal-state vocational rehabilitation programs. Added to this was probably an equal number who obtained rehabilitation services through their own resources or those of voluntary agencies. In contrast, however, the Task Force on the Handicapped of the Office of Defense Mobilization reported that there were about 2,000,000 persons in the U.S. who needed rehabilitation services and an additional 250,000 persons who joined their ranks each year as the result of accidents.

The greatest single step that could be taken to increase services in both the United States and Great Britain, authorities reported, was the more rapid development of rehabilitation services in general hospitals. The millions of persons hospitalized during the year in both countries had excellent medical care, but many were discharged with disabilities which would prevent them from returning to productive roles in society. Additional specialized rehabilitation centres with complete programs for the

Table I.—U.S. Meat Production

(In millions of pounds, dressed weight)

	1953*	1952	1950	1948	1947	Average 1937-41
Beef	10,500	9,600	9,543	9,079	10,429	7,196
Pork	1,250	1,100	1,216	1,412	1,599	1,022
Lamb and mutton .	600	600	599	750	802	884
Poultry	10,700	11,300	10,751	10,205	10,601	8,573
Total	23,050	22,600	22,109	21,446	23,431	17,675

*Forecast by U.S. Department of Agriculture.

severely disabled were needed, but if the nation were to meet the growing problems of increased chronic disability, rehabilitation would also have to be made a part of the medical care given in all hospitals.

Although it was difficult to estimate the financial saving of comprehensive rehabilitation programs, some indication was given in the experience of Goldwater Memorial hospital in New York city. In 1951 the 100-bed rehabilitation unit of this 1,500-bed hospital discharged 168 patients, some of whom went to other institutions, but 91 of whom returned to their homes. From experience, the hospital estimated that it was fair to assume that each of these patients would have stayed at least one more year in Goldwater and many would have stayed much longer. At current hospital costs, the upkeep of these patients for one additional year would have totalled \$237,000.

Of the 91 patients returning to their homes, 12 were placed in full employment by the hospital's rehabilitation counsellor working with other community agencies. An additional five patients were placed in part-time employment and three were placed in sheltered workshops. The amount listed above was not, of course, a net saving to the city of New York, as the additional cost for physicians, therapists and other personnel for the rehabilitation unit was about \$100,000 for the year. Balanced against this, however, is the fact that these physicians and specialists also provided definitive services for the entire hospital. Substantial savings also accrued from the lowered costs of care for the patients, who, as the result of rehabilitation training to the point of self-care, were transferred to custodial institutions where the cost of care was less than half that of the hospital.

Further evidence that this approach is economically profitable was reported during the year by the experience of Grasslands hospital, Valhalla, N.Y. There a group of 58 patients, for whom the original outlook was continuous, indefinite hospitalization, were given a dynamic rehabilitation program. Although many had been in the hospital for months, some for years, half of the members of the group, at the end of the study, were walking without help and two-thirds had been discharged to their homes. Most significant was that two-thirds of the patients required fewer than 60 days of rehabilitation training to make themselves self-sufficient.

Similar results were reported at the Veterans administration's Los Angeles centre in a study of 105 patients, all of whom were physically disabled, many of whom were chronically ill and most of whom had histories of long periods of hospitalization prior to referral for rehabilitation. For various reasons, rehabilitation training was discontinued with 29 of the patients. Of the 76 completing their training, 34 were discharged to their homes and the remaining 42 were transferred to the centre's domiciliary unit, as they were able to walk and were capable of complete self-care.

Hospitals in both nations continued to report during the year that they were unable to expand their rehabilitation services because of the lack of trained personnel. Although the number of physicians receiving specialized training in physical medicine and rehabilitation had increased ten times from 1942 to 1952 in the U.S., the supply still fell far short of meeting the needs. The same situation prevailed in Great Britain, and there was a corresponding shortage of physical therapists, occupational therapists and other members of the rehabilitation team in both nations. (See also VOCATIONAL REHABILITATION, OFFICE OF.)

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(H. A. Rk.)

Medicine. Early in 1952 an announcement came from the Jewish Hospital for Tuberculosis in Brooklyn, N.Y., that a drug called isonicotinic acid hydrazide, marketed under such names as Rimiofon, Marsalid, Pyrazidin and Nydrasid, had remarkably specific effects in controlling tuberculosis. Following its administration persons with tuberculosis experienced loss of fever, increased appetite and healing of lesions. When the drug was used with streptomycin and with *p*-aminosalicylic acid, called PAS, benefits were more rapid. Reports indicated that good results occurred in some cases of dementia praecox, in overcoming depressive states. (See also TUBERCULOSIS.)

The Schafer method of artificial respiration, widely used throughout the world, was being replaced by the Holger Nielsen arm lift—back pressure technique. The latter was adopted by the American Red Cross, the American Medical association, the American Public Health association and other agencies. In this technique the person is placed face down with the hands resting on top of each other, the forehead resting on the hands with the face turned slightly to one side. The elbows are extended toward the side. The operator kneels on one or both knees in front of the head of the unconscious person. The operator places his hands under the victim's arms above the elbow and rocks backward drawing the arms upward and toward himself. They are elevated until firm resistance is met, then replaced on the floor. The operator then moves his hands to the back just below the shoulder blades and rocks forward, exerting pressure on the back. The operator's thumbs lie close to the spine and the fingers are separated extending backward and toward the side. The operator's arms are kept straight during both the lift and the pressure phases and the complete cycle is repeated about 10 to 12 times a minute. (See also PHYSIOLOGY.)

A substance called hyaluronidase had been known for some time as the "spreading factor" because of its ability to disperse colloids. When injected under the skin or into the muscles with other drugs this activity hastens absorption. Investigators found that this substance, when it gets into the urine, acts to disperse the colloids and this interferes with the formation of kidney stones. Using the X-ray, doctors found that existing stones did not grow larger and new stones did not form after administration of hyaluronidase. Never before had any substance been known which could produce this effect. The only help previously had been surgical removal accompanied by the prevention of infection. Hyaluronidase was also used to break up scar tissue.

The search for new antibiotics continued. Perhaps the most significant announcement of 1952 was the development of erythromycin, also called ilotycin, an antibiotic capable of interfering with the growth of a variety of pathogenic organisms. Other new developments involved substances called pleocidin; mycobacidin, said to be useful against leprosy and tuberculosis; fumagillin, for use against amoebas; and an improved penicillin called bicillin. Outstanding was the widespread use of antibiotics against a variety of diseases and particularly in controlling venereal diseases. The United States formerly had more than 600,000 new cases of syphilis each year. By 1952 the number was down to about 70,000 new cases annually. (See also VENEREAL DISEASES.)

From Egypt came reports of a new treatment in which the patient with vitiligo, a condition in which the skin loses pigment, takes the seeds of a plant called *Ammi maius* Linn. When the white patches are later exposed to the sun, pigmentation occurs. Three active substances had been isolated from the seeds. One, called bergapten, was the substance in bergamot oil which was previously used for this purpose. The other substances, called ammoidin and ammidin, were also effective when taken internally or painted on the spots, after which the unpigmented area

is irradiated by the sun or by ultra-violet rays.

Coeliac disease is a condition affecting babies about the age of one year; they show a sudden disinclination for food and have an increased frequency of action of the bowel. The stools are pale, bulky and offensive in odour. The child loses weight, has abdominal distention and wasting of the buttocks and limbs. Such children are apathetic and morose. Formerly the condition was thought to be the result of inability of the bowel to handle fats, and bananas were used in treatment. New research showed that the fat is not absorbed and that a diet free from wheat and rye results in increased absorption of fat. A high caloric diet can be given with biscuits made from corn flour or soybean flour instead of wheat. B complex vitamins are given simultaneously to prevent deficiency. Under such treatment improvement occurred in almost every case.

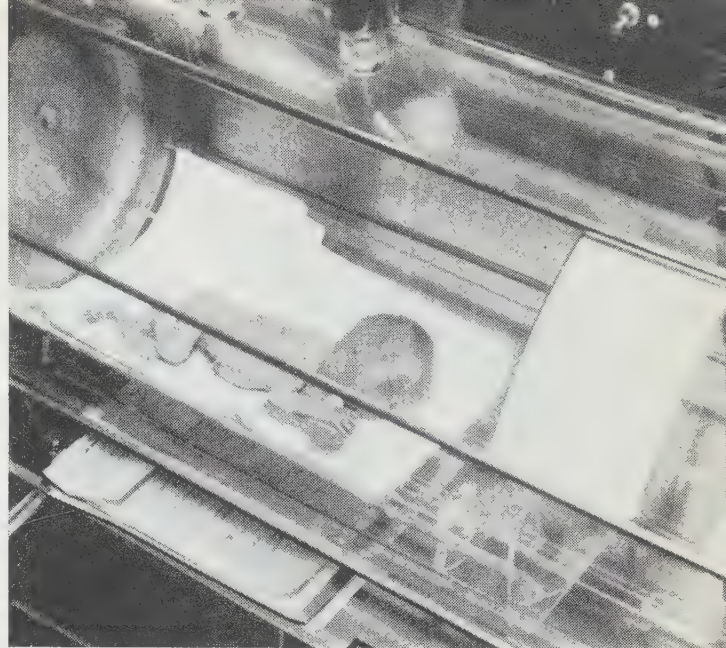
Conservative treatment of hypertension or high blood pressure in the past included rest and relaxation, avoidance of physical and mental stress, weight reduction and sedatives. Later medical additions to this treatment included low salt and salt-free diets, accompanied by the use of resins which pick up salt from the bowel. A rice diet, for example, is essentially a salt-free diet. The most effective drug was the recently introduced hexamethonium bromide or hexamethonium tartrate. Another new drug was hydrazino-phthalazine hydrochloride (apresoline).

An important discovery for the possible control of poliomyelitis was the demonstration of the virus in the blood of monkeys. In five out of eight attempts in chimpanzees without apparent disease, virus was isolated from the blood on the fourth to the sixth day after the virus was fed to the animals. In another experiment 12 out of 23 monkeys inoculated by feeding the virus became paralyzed and these had the virus in the blood on the seventh day after feeding. If there is a stage in poliomyelitis when the virus is in the blood before the paralysis begins, the opportunity to destroy the virus before it reaches the nervous system is much greater.

The injection of gamma globulin, in the hope that it would prevent paralysis in children infected with the poliomyelitis virus, was tested in children in cities which experienced severe epidemics. By late 1952 the results had yet to be evaluated. Vaccines against poliomyelitis were also prepared by growing the virus outside the body in tissue cultures and then attenuating it. Such vaccines proved effective in building resistance against infection with poliomyelitis virus, but the method was in the earliest experimental stages. (See also INFANTILE PARALYSIS.)

Much had been learned about an unsolved condition called idiopathic thrombocytopenic purpura, a condition of unknown cause in which purple bruises appear under slight trauma associated with a lowering of the platelets or thrombocytes in the blood. Often there is an associated fragility of the capillary blood vessels. A recently advanced theory suggested that the body develops a substance which acts against the platelets. When platelets are introduced into the blood of patients with this disease their own blood will destroy the new platelets. Some investigators reported dramatic improvement in some cases by giving cortisone or ACTH.

Rene Leriche, a famous French neurosurgeon, treated people paralyzed after brain haemorrhage—apoplexy or a “stroke”—by improving circulation through the brain, the method involving surgical blocking of the stellate ganglion, a nerve centre which controls dilation and constriction of the blood vessels in the torain. The method was first suggested in 1936 and the 1952 report summarized 400 cases. In more than half the cases the method seemed to help in overcoming confusion, loss of speech, pain or loss of motion of the limbs. In some cases blocking of the sympathetic nervous system was said to be more permanently helpful.



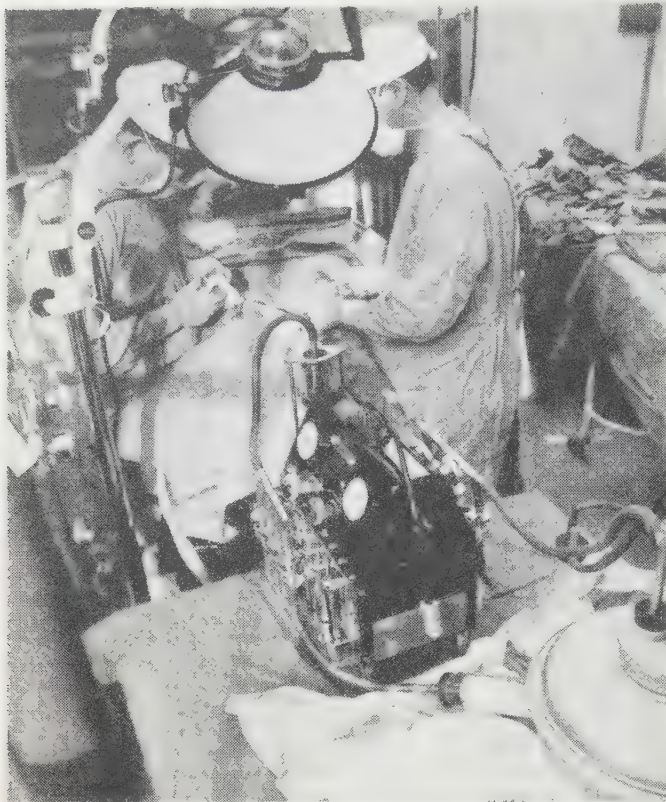
LIFE-SAVING DEVICE for premature babies introduced at the Doctors hospital, Seattle, Wash. Known as an air lock resuscitator, it was used to force fluid from the lungs of newborn babies by changing the air pressure in the chamber. The infant shown here weighed 1 lb., 10 oz.

Radioactive iodine was found of increasing usefulness in conditions affecting the thyroid gland. The rate at which the thyroid takes up the radioactive iodine is an indication of its activity. The radioactivity can stop completely the action of the cells so that giving of thyroid extract temporarily may be necessary. The action was reported effective even in cancer of the thyroid and several cases were reported of complete control of cancer of the thyroid by taking radioactive iodine in water. When rats were treated with excessive doses of radioactive iodine, compensatory enlargement of the pituitary gland occurred.

From the universities of Heidelberg and Würzburg came reports of a new blood plasma substitute called subsidon. The product is prepared by the use of an isotonic and isoionic salt solution combined with rutin. The claim was made that rutin prevents unduly rapid escape of blood fluid and inhibits reactions caused by destruction of protein. Experiments indicated that such solutions remained in the circulation for 12 hours whereas ordinary saline solutions disappeared in from 1 to 2 hours after haemorrhagic collapse. A U.S. investigator showed that the virus of infectious hepatitis in pooled plasma is destroyed if the material stands at room temperature for 24 hours after collection.

During the year a report from Great Britain described the use of a new plastic or acrylic lens to take the place of the lens of the eye which had been removed because of cataract. A British eye specialist actually transplanted such an artificial lens into the eye after the operation in more than a score of cases and reported that in many cases the artificial lens healed in successfully.

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ARTIFICIAL HEART which served as a total substitute for the left ventricle of a human heart during surgery in 1952. Shown here being tested on a dog, it was used at Harper hospital, Detroit, Mich., in one of the first known instances of a patient's survival through its use

and Results of 1951 Pilot Study in Utah. 2. Conduct and Early Follow-up of 1952 Texas and Iowa-Nebraska Studies," William McD. Hammon, Lewis L. Coriell, Paul F. Wehrle, Christian R. Klimt and Joseph Stokes, Jr., "3. Preliminary Report of Results Based on Clinical Diagnosis," *J.A.M.A.*, 150:739-760 (Oct. 25, 1952). (M. F.)

Chiropractic.—Chiropractic is a science based on the premise that disease results from lack of normal nerve function. The doctor of chiropractic treats, by scientific manipulation and specific adjustment, the structures of the body, especially the spinal column, to restore normal nerve function, thereby enabling the protective and restorative powers of the body to function normally. Physiotherapeutic measures are used as indicated. Nearly 2,000,000 new patients are treated by about 22,000 doctors of chiropractic each year.

The 57th anniversary convention of the National Chiropractic association was held in Miami Beach, Fla., June 22 to 27, 1952. Highlighting the convention agenda was a series of scientific symposia covering important developments in diagnostic procedure, adjusting technique, X-ray interpretation, poliomyelitis, physiotherapeutic practices, obstetrics and public health problems. The American Society of Military Chiropractors held its annual meeting in conjunction with the national convention. The 1953 convention was to be held in Los Angeles, Calif., during July.

Official publications of the National Chiropractic association are *Healthways Magazine*; the *Journal of the National Chiropractic Association*; the *National News*; *Chiropractic—A Career*. Headquarters are located in the National Building, Webster City, Ia. (L. M. R.)

Osteopathy.—A research program both fundamental and clinical in nature, on the further development of the osteopathic concept, was under way during 1952 in each of the colleges of osteopathic medicine. There were six accredited colleges of osteopathy in the United States which admitted students who had 60 semester hours of preosteopathic (premedical) credit as a minimum. Approximately 12,000 osteopathic physicians had

been licensed in the United States, of whom 8,660 were members of the American Osteopathic association. In 1952, 391 osteopathic hospitals were provided by the profession with a total bed capacity of 11,188. The president of the association for 1952-53 was Donald V. Hampton of Cleveland, O. The 57th annual convention of the organization was to be held in July 1953 in Chicago, Ill. (R. P. K.)

Great Britain.—The Medical act, 1950, provided for an "intern year" between qualification and registration. After six months as a house physician and six months as a house surgeon or obstetric house surgeon, certificates of satisfactory service would have to be sent to the appropriate licensing body (university, Conjoint board, etc.). The intern would then be eligible for admission to the full *Medical Register*.

Mr. Justice Danckwerts, as an independent adjudicator appointed by the lord chancellor, resolved on March 25 a dispute between the ministry of health and the general practitioners which had bedevilled the national health service since its inception in 1948. Both parties had accepted the recommendations of the Spens committee on the range of income for general practitioners in the national health service. Spens recommendations were based on the 1939 value of money. What Mr. Justice Danckwerts had to determine was the "betterment factor" to be applied to 1939 values to bring them up to date. After a three-day hearing he applied a betterment factor of 85% for 1948-49 and of 100% for 1950-51. The 100% factor was also accepted by the government for 1951-52. The arrears of pay due to the general practitioners for the four years 1948-52 amounted to about £27,000,000, and most of this was actually paid by the end of November. The Danckwerts award also laid it down that the central pool from which doctors were paid should be adjusted each year by reference to the number of doctors in the national health service and with an allowance of 38.7% for practice expenses—which had an important bearing on income tax liability.

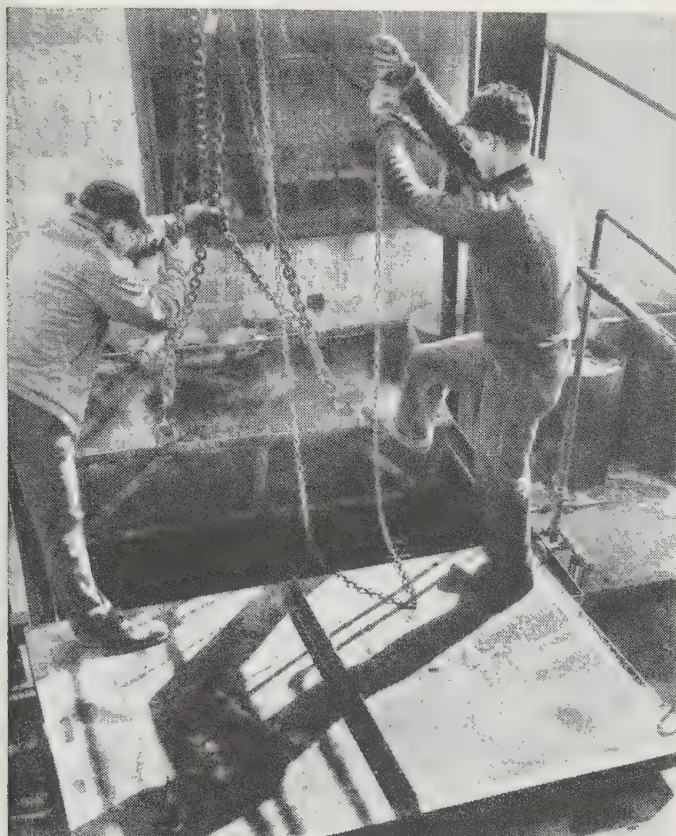
On proposals of a working party composed of representatives of the ministry of health and the British Medical association, it was agreed that a doctor working on his own should have a maximum list of 3,500 instead of 4,000 patients. Partners were to have a maximum of 4,500 instead of 5,000. The number of persons on the list of a permanent assistant was to be 2,000 instead of 2,400. Where there was a shortage of doctors in designated areas, young practitioners who started in practice there would be given an "initial practice allowance" of £600 in the first year, £450 in the second and £200 in the third.

(See also ALLERGY; BACTERIOLOGY; BIOCHEMISTRY; BIRTH CONTROL; BLOOD, DISEASES OF; CANCER; CHEMOTHERAPY; DENTISTRY; DERMATOLOGY; DIABETES; EAR, NOSE AND THROAT, DISEASES OF; ENDOCRINOLOGY; EPIDEMICS AND PUBLIC HEALTH SERVICES; EYE, DISEASES OF THE; GYNAECOLOGY AND OBSTETRICS; HEARING; HEART AND HEART DISEASES; HOSPITALS; INDUSTRIAL HEALTH; MEDICAL REHABILITATION OF THE DISABLED; NARCOTICS AND NARCOTIC TRAFFIC; NUTRITION, EXPERIMENTAL; PSYCHIATRY; PSYCHOSOMATIC MEDICINE; PUBLIC HEALTH ENGINEERING; RESPIRATORY DISEASES; RHEUMATIC DISEASES; STOMACH AND INTESTINES, DISEASES OF; SURGERY; TROPICAL DISEASES; VETERINARY MEDICINE; VITAMINS AND NUTRITION; X-RAY AND RADIOLOGY.) (I. H. Fk.)

Merchant Marine: see SHIPPING, MERCHANT MARINE.

Mercury: see MINERAL AND METAL PRODUCTION AND PRICES.

Metallurgy. Research and development in the field of metallurgy were greatly stimulated by the demands of the defense program. Some of the more striking advances in 1952 are described briefly in the following paragraphs.



LOWERING SCRAP METAL into a leaching solution at a pilot plant of the Chemical Construction corporation, Linden, N.J. The plant began operation in 1952, using a new technique for the treatment of ore concentrates by chemical methods instead of the usual smelting and refining techniques to produce pure metals

Continuous Casting.—After only a relatively short time in the development stage, the continuous casting method was put into regular use to cast brass, bronze, steel, copper, aluminum and magnesium in rounds, billets, flat bars, slabs and cakes. The product was sounder and more uniform than with former methods of casting.

Levitation Melting.—Utilizing the magnetic forces generated by high frequency alternating current in two coaxial coils connected in series opposition, a small mass of metal can be suspended in space and melted, either in air, a controlled atmosphere or a vacuum, without being brought into contact with a crucible or other materials that might cause contamination.

Magnetic Alloy.—A new magnetic alloy with a higher coercive force than any other known magnetic material was made by hot pressing a mixture of bismuth and manganese powders in a strong magnetic field.

Substitutes.—Hastelloy X, an alloy of iron, nickel (45%), chromium (22%) and molybdenum (9%), with 0.15% carbon, was being used as a substitute for scarce cobalt in applications requiring resistance to corrosion at high temperatures. The alloy had good forming characteristics and was available in sheet, plate, bars, wire and precision investment castings.

Vapour Deposition.—After 50 years of relative inactivity, the coating of one metal with another by vapour deposition was being revived and extended. The earlier use of direct vaporization and condensation was handicapped by the high temperature required to produce a workable vapour pressure with many metals. The process was simplified and speeded up by bringing a mixture of a volatile metallic compound and a reducing agent into contact with a receiving surface which was heated to a temperature sufficient to cause chemical reaction, thus depositing the liberated metal on the surface to any desired thickness. The temperature of the receiving surface was a critical factor that

was best controlled by induction or resistance heating.

X-Ray Photography.—A new method of X-ray photography took pictures of hot welded sections up to a temperature of 1,200° F. Records could be made at any stage of the welding and any flaws detected could be corrected before completing the weld, thus assuring a perfect weld when finished. (G. A. Ro.)

Metal Prices and Production: see MINERAL AND METAL PRODUCTION AND PRICES.

Meteorology. The search for hidden phenomena in the atmosphere that would account for unexplained changes in weather and climate and show the way to better methods for forecasting these changes has ranged all the way from the sun and other possible extraterrestrial sources to ocean depths and glacial erosion which might reveal the climatic significance of past ice ages. At Princeton, J. G. Charney, J. von Neumann and associates in the Institute for Advanced Study made slow but certain progress in representing some of the features of the general circulation of the atmosphere in mathematical form for treatment by electronics computer (J. G. Charney, "Dynamic Forecasting by Numerical Process," *Compendium of Meteorology*, American Meteorological society). At The University of Chicago a more immediate step to close the gap between theory and practice in weather forecasting was taken when a forecast research group of the department of meteorology was established by H. R. Byers in close working relationship with the district forecast staff of the U.S. weather bureau under Gordon Dunn. Among other subjects that made meteorological headlines in 1952 were rockets and soundings of the high atmosphere, the jet stream near the tropopause, destructive tornadoes, their causes and precursors, and the great October drought in the United States.

Meteors, Rockets and the High Atmosphere.—In an article in the January issue of the *Bulletin of the American Meteorological Society*, Fred Whipple published the most recent results of studies above 30 km. (approximately 100,000 ft.) made principally by means of rockets and observations of meteor trails. New determinations of pressures, densities and temperatures were made up to altitudes of 130 km. and in a few cases much higher. Above 50 km., mean temperatures were found to be much lower than previously computed, the average being 15° to 20° C. (27° to 36° F.) lower at 100 km. Measurements of winds at these altitudes were still too infrequent to yield reliable mean values but wind speeds of 200 m.p.h. or more appeared to be not uncommon. New data were obtained by rocket for values of the solar constant, the ultra-violet and X-ray spectra of the sun and ionization and magnetic phenomena. Direct samples of the composition of the atmosphere at 200,000 ft. gave a greater ratio of helium to nitrogen than previously assumed and also smaller changes in the neon and argon ratios to nitrogen.

These data from the high atmosphere held more than theoretical interest. They had a bearing on the radiation balance and perhaps a greater influence on the heat engine that drives the general circulation and therefore on cyclones and their resulting weather than had so far been discovered.

That the sun provides the energy to drive the general circulation of the atmosphere is unquestioned. Several well-known physicists had tried to derive predictions of rainfall and temperature at the earth's surface from studies of variations in solar radiation but the results remained controversial. Meteorologists usually had looked for the causes of weather changes within the atmosphere itself or in the effects of conditions on the surface of the earth. More recently H. C. Willett was one of a few who re-examined extraterrestrial causes. He suggested that corpuscular emissions from the sun as distinguished from

radiant energy (waves) may account for an increase in the temperature of the high atmosphere at times (*Bulletin of the American Meteorological Society*, vol. 33, no. 6, pp. 255-258). The melting of glaciers during the sunspot maxima of 1917 and 1937 supports this view. It follows that major climatic changes associated with ice ages might depend on variations in the total energy of all kinds received from the sun. Further research was necessary to bring out the facts.

The Jet Stream.—At altitudes below 50,000 ft. the routine radiosonde network gave fairly comprehensive data of pressure, temperature, humidity and wind during 1952 over North America, Europe, Asia and parts of Australia, Africa, South America and the North Atlantic and North Pacific. One of the results was better delineation of the jet stream. This term came into use in meteorology a few years earlier to denote a wind current in the upper air of limited width and flowing at speeds greater than the general circulation. The jet stream is not constant in location, extent or velocity. It usually flows eastward but sometimes it flows toward the north and at other times toward the south. It is not necessarily a continuous circumpolar stream. Usually it is found somewhere between 20,000 and 45,000 ft. above the ground over the zone where the north-south temperature gradient is strongest in the mid-troposphere, that is, in middle latitudes where the tropopause has its steepest slope. Its width may vary from a few miles to 100 mi. or more, and its depth may be only a few hundred feet or several thousand feet. Its average speed is probably less than 75 m.p.h. but it sometimes exceeds 250 m.p.h.

On Oct. 17, 1952, the winds at 39,000 ft. above Argentina, Newfoundland (47° N., 54° W.), were found to be from the west with speeds of about 280 m.p.h. These data by radiosonde were consistent with estimates based on the three-dimensional synoptic analysis. An unconfirmed observation gave a wind speed of about 350 m.p.h. between 35,000 and 40,000 ft. at one time during this period and, although not certain, this wind speed in the jet stream was considered probable under unusual conditions of north-south temperature gradient through the tropopause. The very strong winds aloft over the west Pacific encountered by B-29s during World War II led to discovery of the jet stream and in some of those instances wind speeds of about 300 m.p.h. were indicated. A recent instance in the Pacific was reported by an eastbound aeroplane on Nov. 19, 1952, which found the eastward component of winds at 20,000 to 27,000 ft. to be about 90 m.p.h. for a distance of 4,000 mi. The flight altitudes were below the usual layer for maximum jet-stream speeds and the network of radiosonde observations over the Pacific was too sparse to tell whether the plane was flying close to the axis of the stream or was merely within the general westerlies during a period when they were unusually strong.

Soundings through the jet stream were of increasing practical importance. Forecasters need the measurements each day for use in deriving extended time-period weather forecasts and for research in the relationship between the stream and the origin, development and movement of at least some of the cyclones and anticyclones that bring the daily changes in weather. No less important was the need for jet stream soundings for high-level aeroplane flight planning. Commercial jet-powered air transports were already operating at jet-stream altitudes, and ignorance of its extreme velocities would mean not only uneconomical operation but might also lead to disastrous forced landings. These flight-planning problems brought sharp comments of dissatisfaction from aviators and led to numerous studies and seminars among meteorologists during 1952, notably in England, Canada and the United States. The subject was thoroughly aired in the July issue of the *Quarterly Journal of the Royal Meteorological Society* (pp. 426-457).

In the southern hemisphere the number of radiosonde stations and their geographical distribution were too sparse to comprise even an elementary network, and knowledge of the jet stream there was consequently largely theoretical. In a study published in the August issue of the *Journal of Meteorology* (American Meteorological Society), W. J. Gibbs concluded that the jet stream in the southern hemisphere resembles its counterpart in the northern hemisphere during the respective winters but probably differs considerably in summer. The huge land masses in the northern hemisphere cause irregularities in the north-south temperature gradient and therefore variations in the jet stream with longitude which apparently are not found in the southern hemisphere where the continental masses are small compared with the oceans. The southern hemisphere may also have a secondary jet stream not usually found in the northern hemisphere. In both hemispheres the boundaries of the stream are typified by marked wind shear in vertical as well as horizontal cross section.

Wind shear was examined to explain previously unexpected turbulence in clear air at high altitudes. Aircraft flying at high levels had occasionally encountered very severe turbulence without any of the usual visible evidences of instability such as clouds sometimes give. This refers to instances when the turbulence is more severe than that found in convective currents on a hot day or that resulting from waves which form on the interface between two different wind currents at successive altitudes, either of which may cause "rough" air without necessarily producing cloudiness. The turbulence attributed to sharp wind shear at the boundaries of the jet stream appears to place dangerous stresses on aeroplane structures, and although too little was known of the subject to justify firm conclusions, the effects were assumed to be the result of violent eddy motion set up by the wind shear through the stream. Here also further research was needed to meet urgent requirements of aeronautics.

Tornado Research.—A stream of accelerated winds, also loosely termed a jet stream, had sometimes been found to be associated with an area of maximum potential instability which gives rise to the strong convection that produces tornadoes. The causative relationships between these phenomena were still not clearly understood.

Table I.—Partial List of Tornadoes Occurring on March 21-22, 1952, in Arkansas, Tennessee and Kentucky*

State and county	No. reported	Date	Approx. hour	Path of tornado		No. of persons injured	Dead
				Width (in yards)	Length (in miles)		
Howard Co., Ark.	1	21	3 P.M.	100	25,000	9	7
Saline Co., Ark.	1	21	4 P.M.	400	15,000	0	0
Pulaski Co., Ark.	1	21	5 P.M.	0	0	0	0
White Co., Ark.	1	21	5:30 P.M.	1,500	70,000	325	50
Lonoke Co., Ark.	3	21	5 P.M.	200	8,000	45	11
Woodruff Co., Ark.	4	21	6 P.M.	800	20,000	180	29
Poinsett Co., Ark.	3	21	7 P.M.	800	15,000	89	3
Mississippi Co., Ark.	2	21	7:30 P.M.	500	20,000	57	1
Dyer Co., Tenn.	3	21	8 P.M.	1,000	30,000	50	16
Fayette Co., Tenn.	1	21	10 P.M.	400	35,000	42	8
Gibson Co., Tenn.	1	21	11 P.M.	150	300	2	2
Carroll Co., Tenn.	2	21	11 P.M.	100	250	8	1
Chester Co., Tenn.	1	21	11 P.M.	1,000	75,000	100	21
Henderson Co., Tenn.	1	21	11:30 P.M.	250	300	43	10
Larue Co., Ky.	1	22	12 P.M.	300	5,000	18	0
Decatur Co., Tenn.	1	22	1 A.M.	50	1,000	10	3

*Tornadoes struck 28 communities in the lower Mississippi valley during March 21-22, 1952. In some cases two or more towns were struck by the same tornado. Studies indicate that there were at least 15 different tornadoes in this series associated with the frontal system which extended from Oklahoma through Arkansas and along the lower Ohio river valley.

The tornado is the most violent of all storms. North America has more tornadoes than any other continent. In the United States their number averages more than 140 per year. They occur mostly during the spring months and are least frequent in December. In most other parts of the world tornadoes occur infrequently, usually less than one per year for each 25,000 sq.mi. of area.

In March 1952 forecasts of tornadoes were published for the

first time as a regular service to the general public. For many years predictions of destructive local storms sometimes implying tornadoes had been published in official forecasts but authorities had preferred not to forecast tornadoes specifically until their causes were better understood and forecasting methods more certain. During the spring and early summer of 1952 the new tornado-forecasting service achieved fair success. In one instance at White Deer, Tex., on June 6, the forecasts warned residents to take refuge in storm cellars. Heavy loss of life was probably thus averted when the storm struck, completely demolishing 15 homes and seriously damaging 35 others. Of the several hundred inhabitants only 12 were injured, none seriously. Property damage was almost \$1,000,000.

That the methods for predicting tornadoes and severe local squalls were still imperfect was shown by the unexpected occurrence of a storm with winds of 100 m.p.h. or more at Carswell field, Tex., near Fort Worth, on Sept. 1. Many military aeroplanes (B-36s) were badly damaged or destroyed and numerous buildings demolished, the losses being estimated at more than \$25,000,000. A group of experienced military forecasters had been giving full attention to safeguarding air force bases by attempting to foresee all severe squalls and tornadoes but the official findings of the board which investigated the disaster concluded that the place of occurrence of such local storms was still largely unpredictable. Nevertheless there was reason to expect better results in short-term warnings from local networks based on radar or eye observations, a system described in a following paragraph under *Radar Meteorology*.

Table II.—Frequency of Tornadoes During the 36-Year Period, 1916–52

	Total number*	Total days†		Total number*	Total days†
By Months:					
Jan.	148	69	July	452	304
Feb.	177	78	Aug.	302	214
Mar.	618	205	Sept.	268	159
Apr.	863	302	Oct.	147	69
May	1,218	433	Nov.	178	79
June	1,006	434	Dec.	127	60
By States:					
Alabama	193	106	Nebraska	204	142
Arkansas	326	167	New Jersey	14	14
Florida	170	131	New York	23	23
Georgia	167	87	North Carolina . .	66	54
Illinois	169	109	North Dakota . . .	59	53
Indiana	131	103	Ohio	114	87
Iowa	503	262	Oklahoma	444	255
Kansas	727	417	Pennsylvania	85	71
Kentucky	48	35	South Carolina . .	106	84
Louisiana	188	130	South Dakota . . .	115	97
Maryland	48	40	Tennessee	129	83
Michigan	93	64	Texas	496	331
Minnesota	122	95	Virginia	46	35
Mississippi	212	133	West Virginia . . .	10	8
Missouri	279	171	Wisconsin	128	96

*These columns show the total number of tornadoes reported during the 36-year period.
†These columns show the total number of days on which one or more tornadoes were reported during the 36-year period.

[Arizona, California, Connecticut, Delaware, Idaho, Maine, Massachusetts, Nevada, New Hampshire, Oregon, Rhode Island, Utah, Vermont and the state of Washington reported less than 20 tornadoes during the entire 36-year period. In four mountainous states where the population is sparse in some regions, the records of tornadoes appear to be somewhat unreliable, and ordinary wind squalls may have been mistaken for tornadoes in some cases. The reports may therefore be somewhat too high. These states are Colorado, which reported 54 tornadoes during the 36-year period; Montana, 50; New Mexico, 37; and Wyoming, 57.

A research group at the Johns Hopkins university, Baltimore, Md., worked with the weather bureau in investigating the possibility that a phenomenon called the hydraulic pressure jump might indicate a source of the instability in the air that leads to formation of tornadoes. Under certain conditions an accelerating cold front aloft, or an orographic barrier, may produce a wave on a surface of temperature inversion. If the temperatures and humidities of the overlying air layers are close to certain critical values, the wave may lift superimposed air layers sufficiently to produce the required instability for formation of tornadoes. This hypothesis was tested not only in the laboratory by use of water analogy but also under natural conditions by studies of barograph records during passage of squall lines across a relatively dense network of field observing stations. In several instances where tornadoes occurred the



ABOARD one of the U.S.A.F. weather planes crossing the North pole regularly from Alaska in 1952 to gather data for transmission to the U.S. and elsewhere. The dropsonde unit shown being placed in a chute contained a radio transmitter which sent back data on temperature, humidity and atmospheric pressure

conditions appeared to confirm the hypothesis.

Radar Meteorology.—Another approach to specific warnings of destructive local storms was the radar weather network. For detecting storms characterized by heavy precipitation, as most violent thunderstorms and tornadoes are, radar has the distinct advantages of extending the range of the weather observer's eye to distances many times the normal visual range and penetrating intervening cloud formations which completely obscure the storms from normal vision. The great practical advantage of radar for this purpose is quickly seen by a glance at the problems of maintaining a field network of observing stations sufficiently close together to be sure that all violent local storms are promptly detected and reported. These storms can seldom be seen at distances greater than five miles, often much less if clouds obscure the sky. Meteorological services usually have their network stations spaced at intervals of 50 mi. or more. Closer spacing becomes too costly to maintain universally. Thus the weather observers in a normal network can keep under observation less than 1/25th of the area in which local storms may develop. Under most circumstances modern radar equipment can "see" heavy rain or snow at distances up to 50 or 75 mi., in some cases much farther. With radar stations at intervals of 100 mi. it would be possible to detect most severe

local storms as soon as they form. Populous communities in their paths could be warned of their approach sometimes an hour or more in advance, at other times perhaps only a few minutes, but long enough for the people to seek protection from the violent winds. With this service in view the U.S. weather bureau during 1952 added to its previously established small network of radar stations, which at the close of the year numbered eight. The bureau also utilized radar weather observations from certain military and private radar installations, the total number being about 15. Canada and the British Isles also led in development of radar meteorology.

Other uses were foreseen. In a research paper in the *Quarterly Journal of the Royal Meteorological Society* for July (pp. 372-376), H. Wexler published some of the results of his studies at the University of London under a Fulbright fellowship for investigation of radar meteorology. He found that the so-called upper band sometimes seen by radar may be explained as a reflection from a high collection or layer of graupel preceding depletion of the liquid water content of the cloud below a certain critical value. The bright band which is seen more frequently than the upper band had already been explained as a result of reflections from a layer of melting snow with snow above and rain below. In addition to its value as a research tool in studying the natural processes of rain and snow formation in the atmosphere, radar had been shown to be superior to the conventional rain gauge for measurement of precipitation over any given area within radar range. The rain gauge can provide only spot sampling which is often not representative for the area as a whole. The radar gives an integrated picture that is advantageous in correlation studies in agriculture and other fields.

The third annual Radar Weather conference was held at McGill university in Montreal, Que., on Sept. 15-17 to review recent advances in this branch of the science and to encourage co-ordination of knowledge and plans for further development. Radar offered some hope for solution of some of the most difficult practical problems in obtaining comprehensive sampling of certain important elements in synoptic meteorology.

Artificial Cloud Nucleation (Rain Making).—Any subject with the economic and social implications that are suggested by the possibilities of artificial methods of increasing rainfall is bound to stimulate experimentation, and 1952 saw many research studies aimed at developing methods of increasing the amount of rain or snow in semiarid regions and many field trials by commercial exploiters. Among the noteworthy experiments were those by E. G. Bowen in Australia, who introduced the use of water drops injected into the bases of shower-type clouds with strong updrafts. Success in starting rain from a cloud that had not reached the point of precipitation was reported in a few cases. Other studies investigated the role of large salt nucleuses over the oceans carried into the atmosphere after evaporation of sea spray, and the relationship of these nucleuses to cloud and shower formation. Except for a few contributions from studies like these there was relatively little added to fundamental knowledge of rain making during the year. Commercial rain makers seemed to have expanded their operations somewhat in Europe and Central America but in the U.S. fewer farmers contracted for rain making than in 1951. Many had been disappointed with results but hundreds still believed they had received more rain than normal as the result of artificial seeding of clouds. In several countries the governments were supporting research to determine the facts. Many popular articles on rain making were published. Among those noteworthy were two in the July issue of *Weather* (Royal Meteorological society, pp. 199-210).

Glaciers and Climatology.—For many years geologists and

meteorologists had studied the slow changes in glaciers and searched the evidence hidden in deposits and terrain left during past glacial epochs for knowledge of climatic cycles. The span of recorded temperatures based on thermometer readings is much too short to shed light on whatever fundamental changes took place to cause the ice ages. The subject is important both for its bearing on future civilizations and for its significance in studies of sunspot cycles and other phenomena that may hold the key to understanding of certain factors in the circulation of the atmosphere. Glaciers in Alaska and Greenland which had been undergoing ablation during recent years were observed to have receded still farther in 1952. The results of studies in Glacier National park, Mont., and in equatorial east Africa gave more indication that some systematic and far-reaching trend in climate may have set in. Its future significance was only conjectural but it was likely to be a fertile subject for investigation by scientists who look upon climatology as a dynamic field rather than a collection of static, statistical data.

One of the aids to research in climatology in the U.S., established during 1952, was the weather records centre at Asheville, N.C. This centre was organized by transferring the facilities of the former machine tabulation unit for weather records processing from New Orleans, La., to Asheville and combining with these several of the former regional weather records centres of the weather bureau.

In different conferences in Europe and North America attention was focused on climatology and its applications in the effort to encourage better use of climatological records which contain knowledge of much value in agriculture, business, engineering and industry, especially in architecture and building construction. Microclimatology, which had proven its worth in agriculture since 1942, was a subject of special attention in military science and air pollution studies during the year.

World Meteorology and the World Meteorological Organization.—It is a primary objective of the World Meteorological organization to promote high standards of weather observing and reporting everywhere and to organize efficient exchange of weather information among all countries. The W.M.O. is one of the specialized agencies of the United Nations. During 1952 several of its constituent bodies held sessions as follows: Regional Association for Europe, Zurich, Switz., May 26-June 7; Commission for Maritime Meteorology, London, Eng., July 14-29; Working Group on Clouds and Hydrometeors, Paris, Fr., July 24-Aug. 6; Executive committee, Geneva, Switz., Sept. 9-30.

Some Weather Anomalies in 1952.—In many parts of western Europe and the British Isles snow fell more frequently and accumulated to greater depths on the ground during January and February than for many years. In a few places in central Europe snowfall was the heaviest in 100 years, principally in Austria where the government mobilized manpower to clear the snow from roads to isolated communities after temporary relief from food shortages had been provided by air transportation. Scotland and Denmark also experienced unusual instances of snow-blocked roads. Temperatures in general in western Europe during these winter months were near normal or slightly below.

In North America by contrast the winter weather during the first two months of the year was milder than usual with less precipitation and with temperatures well above normal east of the Rockies. During January Texas averaged 8° to 10° F. above normal and during February large sections of Iowa, Minnesota, the Dakotas, Manitoba and Saskatchewan averaged 10° to 12° above normal, an unusual abnormality for the month. For the three winter months, December-February, as a whole the tem-

Table III.—Some Rainfall Anomalies, 1952—the October Drought

State	October		Aug. 1-Oct. 31		State	October		Aug. 1-Oct. 31	
	Total*	Per cent normal	Total*	Per cent normal		Total*	Per cent normal	Total*	Per cent normal
Ala.	1.2	46	10.5	99	Mo.	0.5	18	7.1	66
Ark.	0	0	3.2	75	Neb.	0.1	7	4.5	72
Calif.	0.8	24	6.3	62	N. Mex.	0	0	3.3	61
Colo.	0.1	9	0.4	25	N. Dak.	0.1	10	3.0	65
Conn.	0.1	5	3.3	75	Okla.	0.1	4	3.2	36
Del.	1.2	44	10.8	91	Ore.	0.5	22	1.4	37
D.C.	0.7	27	5.7	59	S. Dak.	0.1	3	2.3	48
Fla.	1.1	39	7.6	81	Tenn.	1.3	47	8.4	84
Ga.	0.1	1	5.7	56	Tex.	0.1	1	2.7	34
Idaho	0.1	1	4.0	49	Utah	0	0	1.6	47
Ill.	0.1	1	4.9	41	Wash.	0.9	33	2.3	45
Ind.	0.2	9	5.3	54	Wis.	0.2	7	5.6	58

*Rainfall amounts are given in inches.

temperatures in the United States ranged from 6° below normal in Montana to 6° above normal in parts of Texas, Alabama, North Carolina, Maryland and Delaware. About 95% of the country east of the Rockies experienced temperatures above normal for the season. Winter precipitation was fairly close to normal in the United States except in the southern plains states where only 25% to 50% of the usual amounts of rain or snow were received. In Argentina and Australia the prolonged record-breaking droughts which had characterized the weather of late 1951 and early 1952 were relieved to some extent by rains in March and April but water shortages continued to be very acute in many localities, particularly in northern Australia.

During May the weather in the British Isles was exceptionally warm, and in the U.S. also it was warmer than normal except in the northeastern section, the greatest departures being 6° above normal in Arizona and 4° below normal in Vermont. Moderate deficiencies in rainfall set the stage for the severe drought of the summer in large areas of southern and eastern U.S., which culminated in October with acute shortages in the water supply. A striking example of the balance in average monthly temperatures that frequently shows up in the contrasting abnormalities east and west of the Rockies was seen in the summaries for June and October 1952. In June the temperatures east of the Rockies were higher than normal, the greatest departure being 10° in Kansas, while the weather was cooler than usual in the states west of the Rockies, the greatest departure being 6° below normal in central California. During October the conditions were reversed, with the western third of the U.S. warmer than usual and the eastern remainder up to 6° cooler than normal. Precipitation during both months was much below normal in most states, some localities having been completely without

rain in either month.

The Great October Drought in the U.S.—An analysis of the conditions in the atmosphere that cause prolonged dry weather with its devastating effects on agriculture and even on the supply of potable water for cities and towns is important not only as a scientific study but also for its very practical bearing on schemes for drought relief by artificial means. The seeding of clouds with dry ice, silver iodide or water droplets in order to cause coalescence of cloud droplets and precipitation of rain or snow cannot be effective unless there is sufficient moisture in the air to permit condensation. The vast air masses that enter into a widespread drought are so extensive that artificial measures are inevitably puny by comparison. The three-dimensional synoptic conditions that led up to and prolonged the October drought of 1952 were no exception in this respect.

The basic cause of the drought was the absence of the usual supply of warm, moist air from the Gulf of Mexico which provides the water for most of the summer rainfall in eastern and central U.S. The analysis of upper air conditions reveals the main features. At the 700-mb. (about 10,000 ft.) level the Pacific anticyclone was unusually well developed and the western extension of the Atlantic anticyclone was intensified over Georgia. The normal low-pressure trough which on the sea level map for June and July was situated in the Great Plains states was displaced westward to the Pacific coast at the 700-mb. level. As a result the region east of the Rockies experienced a long period of southwesterly winds which brought warm, dry air from Mexico and the southwestern U.S. with an anticyclonic pattern which resulted in subsidence of the air and further reduction in relative humidity. This pattern was separated from a cyclonic circulation over southern Canada at the 700-mb. level by a wide band of abnormally well-developed westerly winds. This synoptic situation meant that cool air masses from Canada did not move southward across the U.S. as frequently as usual during the summer, and thus another element for formation of showers was missing.

In terms of the surface weather map these abnormalities in the circulation patterns aloft were characterized by the relative infrequency of cyclones over the U.S., although there was a more or less normal succession of small anticyclones (highs) along the Canadian-U.S. border. Over Canada, on the other hand, cyclones passed frequently while anticyclones were rather

infrequent. These general characteristics continued with occasional interruptions until autumn when the conditions near the surface of the earth and aloft over most of North America took on a somewhat different pattern of abnormality.

About mid-September the circulation in the layers from 700 mb. to 500 mb. (roughly 10,000 to 20,000 ft.) showed a deep trough over the eastern Pacific, an intense ridge over the Rockies and another well-defined trough over the general axis of the Appalachians. The intense ridge extended from the Yukon valley almost to Arizona with its maximum over British Columbia, where the departure from normal was the greatest for the season in 20 years. The gradient accompanying the ridge

Table IV.—Some All-Time Temperature Anomalies in Selected Cities in the U.S.*

City	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Birmingham, Ala.													
Highest	79	82	90	91	99	106	107	104	106	94	84	79	107
Lowest	1	-10	12	27	35	47	57	55	41	27	14	5	-10
Chicago, Ill.													
Highest	65	68	82	91	98	102	105	102	100	88	78	68	105
Lowest	-20	-21	-12	17	27	35	49	47	29	14	-2	-23	-23
Columbus, O.													
Highest	72	72	84	90	96	102	106	103	99	90	78	67	106
Lowest	-20	-20	0	15	31	39	49	42	32	20	-5	-12	-20
Houston, Tex.													
Highest	84	90	96	93	98	103	104	108	101	99	89	84	108
Lowest	5	6	21	34	45	55	55	54	45	33	23	15	5
Los Angeles, Calif.													
Highest	90	92	99	100	103	105	109	106	108	102	96	92	109
Lowest	28	28	31	36	40	46	49	49	44	40	34	30	28
Miami, Fla.													
Highest	85	88	92	93	94	94	96	96	95	93	88	91	96
Lowest	29	27	34	45	50	61	66	67	62	52	36	30	27
Minneapolis, Minn.													
Highest	58	64	83	91	106	104	108	103	104	90	77	63	108
Lowest	-34	-33	-27	6	22	34	44	42	26	10	-13	-27	-34
New York, N.Y.													
Highest	68	73	84	91	95	97	102	102	100	90	75	69	102
Lowest	-6	-14	3	12	34	44	54	51	39	27	7	-13	-14
Salt Lake City, Utah													
Highest	62	68	78	85	93	103	105	102	97	88	74	68	105
Lowest	-20	-13	0	18	25	32	43	42	29	22	-2	-10	-20
San Francisco, Calif.													
Highest	78	80	86	89	97	100	99	92	101	96	83	74	101
Lowest	29	33	33	40	42	46	47	46	47	43	38	27	27
Seattle, Wash.													
Highest	67	70	81	87	92	98	100	96	92	82	68	65	100
Lowest	3	4	20	30	36	40	46	46	36	29	15	12	3
Washington, D.C.													
Highest	77	84	93	95	97	102	106	106	104	96	83	74	106
Lowest	-14	-15	4	15	33	43	52	49	36	26	11	-13	-15

*These temperatures are the highest and lowest ever recorded at the places named during more than 50 years of weather bureau records.

caused dry air from Canada to move rapidly into central and southeastern U.S. and effectively shut out the warm moist air from the Gulf which in combination with cooler air masses from the north would have produced rain. As in June and July there was an unusually well-developed zone of strong westerlies which also contributed to the blocking effect upon the normal moisture-laden winds from the Gulf and Caribbean. Only in Florida, which was east of the trough, did the southerly winds penetrate and there the rainfall was twice the normal amount, in some localities even more.

As in the early summer, the surface weather map during October showed more cyclones and fewer anticyclones than usual in Canada while in the U.S. the abnormalities were the opposite. The principal jet stream aloft was usually found near the Canadian-U.S. border, with cyclones moving eastward near the northern limits of the stream and anticyclones moving south-eastward somewhere south of the southern limits of the stream. These features were clearly revealed in the 700-mb. and 500-mb. upper-level charts.

The severity of the drought was shown by some of the record-breaking statistics. The average rainfall for the entire U.S. during October was only 27% of normal, less than 0.6 in. It was the lowest ever recorded for the country as a whole since records began about 1885. In many of the central plains and southern states precipitation was only 10% of normal, or less, many localities having been without rain for weeks. Salt Lake City, Utah, experienced a 62-day period without rain and for the first time in 80 years had no rain during the month of October. St. Paul, Minn., had only 0.01 in., the driest October in 100 years. Some parts of Louisiana and Mississippi had 45 consecutive days without rain, and at Fort Worth and other places in Texas, the 15-week period ending Nov. 1 had less than 1 in. of rain, a deficiency of 7 in. or more for most of these localities.

In addition to widespread damage to agriculture, the water shortage caused reservoirs and wells to go dry and created a very critical fire hazard in villages and forests. Several national parks were closed to the public, but despite these precautions fires started in many states and many thousands of acres of timber were destroyed. Smoke combined with light fog in southern Louisiana lowered visibility so much as to interrupt road traffic. The dry period ended in most parts of the country during November when circulation patterns returned to normal and general rainfall resulted in amounts ranging from two to five inches or more for most regions.

Abnormal weather of different kinds was reported in western Europe during the last two months of the year. Unusually fierce gales in November and December delayed transatlantic shipping and caused damage in coastal cities. A severe storm on Dec. 16-18 pounded the North sea coasts and the Baltic and caused precipitation which left a blanket of early snow in northern Italy, Switzerland, Germany, the Low Countries and Scandinavia.

During Dec. 5-7 London had a dense and persistent fog which was reported as the worst in a century. It paralyzed traffic on the ground and in the air. A second period of unusually dense fog even for London occurred during the fourth week of December, adding to the handicaps of holiday travellers. (See also DISASTERS; FLOODS AND FLOOD CONTROL.) (F. W. RR.)

Methodist Church. From April 23 to May 7, 1952, the quadrennial general conference, the supreme law- and policy-making body of the Methodist Church, major body of American Methodism, met in San Francisco, Calif. This was followed in June and July by quadrennial conferences of the six jurisdictions. These had the duty of electing, assigning and retiring bishops in the U.S. Six overseas central

conferences, with scheduled meetings in late 1952 and 1953, had similar responsibility for mission lands.

The general conference was composed of 746 delegates, half ministers, half laymen. Because of political conditions in their homelands, 26 were unable to attend. Delegates represented 99 annual conferences in the U.S. and 44 overseas. There were 66 delegates from 25 countries outside the U.S., representing more than 1,000,000 members in mission lands (735,988 full members; 301,214 preparatory members).

Bishops (35 in the United States, 16 overseas, 19 retired) were represented in an initial episcopal message, then presided in turn but without voice or vote.

The 1952 general conference:

Adopted a simple pattern for local church organization: four commissions, auxiliary to the official board, on evangelism, education, missions and finance.

Authorized an interdenominational fund to be raised by apportionments to local churches to provide \$200,000 per year for the National Council of Churches and \$85,000 for the World Council of Churches.

Authorized a Crusade for World Order to start in 1953.

Declared 1953 a year of evangelism, in co-operation with Methodist bodies of the world, coinciding with the 250th anniversary of the birth of Methodism's founder, John Wesley.

Activated a Radio and Film commission with an annual appropriation of \$165,000. Its first major project would be a biographical film on Wesley to be produced in England.

Adopted an annual budget of \$9,660,000 for World Service benevolences. This would not include \$7,000,000 per year raised by the Woman's Society of Christian Service nor \$4,000,000 given for special missionary projects.

Indicated interest in ministerial education by appropriating \$850,000 a year to strengthen the church's ten graduate schools of theology; authorized special askings of \$5,500,000 from church members in support of 125 church-related institutions of higher learning and Wesley foundations at state and private universities.

Extended the right to administer the sacrament to unordained pastors who qualify annually by passing study courses leading to ordination.

Established the right of Negro churches to transfer to white jurisdictions if all parties involved approved.

Requested the 45-year-old Methodist Federation for Social Action (unofficial) to remove the word "Methodist" from its name and to vacate its quarters in the Methodist building in New York city. These factors had caused the public to confuse the federation's statements with official Methodist pronouncements.

Modified the Survey commission report, which had recommended sweeping changes in organizational structure, as follows: (1) Reduced membership on general boards and agencies from 718 to 615. (2) Set up a Co-ordinating council to review possible claims of overlapping of agencies. (3) Created the Board of Social and Economic Relations. (4) Created the Commission on Promotion and Cultivation to correlate production and distribution of promotional and resource literature, and authorized to merge much of this material into a monthly program journal for church workers. (5) Created interboard commissions on the local church, on Christian social relations and on cultivation, promotion and publication.

The Methodist Publishing House in September reported its best year with gross sales of \$15,548,000.

Ministerial recruitment showed an upturn. The number received on trial in 1951 was 1,110, compared with 546 in 1947.

The Methodist Church in Great Britain, meeting for its annual conference in mid-July in Preston, Eng., under the presidency of Rev. Colin A. Roberts, elected Rev. Donald O. Soper president-designate for 1953-54. A London office of the World Methodist council was ordered with Rev. E. Benson Perkins in charge. Rev. Walter J. Noble was made president of the British section of the council, succeeding Rev. Dr. Wilbert F. Howard, deceased. Sunday school enrolment (805,659) showed a gain. Church membership figures (741,596), announced earlier in the year, decreased slightly, the first decline since 1947.

Latest figures available in 1952 for the seven largest branches of U.S. Methodism showed a total of 11,348,174 members in 53,648 churches. (See also CHURCH MEMBERSHIP.) (R. SY.)

Mexico. A federal republic of Middle America lying between the United States on the north and Guatemala and British Honduras on the south, Mexico has an area of 760,373 sq.mi.; population (July 31, 1951): 25,715,350. Capital: Mexico City. Chief cities (July 31, 1951): Federal District, including Mexico City (3,049,367); Guadalajara (379,401); Monterrey (330,012); Puebla (210,533); Mérida (159,405); Torreón

(128,557); San Luis Potosí (126,601); León (122,680); Ciudad Juárez (121,912); Veracruz (113,803); Tampico (97,673); Aguascalientes (93,432); Chihuahua (86,796); Saltillo (69,874); Mexicali (64,701); Morelia (60,650); Pachuca (58,698); Culiacán (49,801); Matamoros (43,830). Language: Spanish, with an estimated 6.29% (1940) speaking Indian tongues only. Religion: predominantly Roman Catholic. President to Dec. 1, 1952, Miguel Alemán; thereafter, Adolfo Ruiz Cortines.

History.—Continued industrial advances, exceptional population growth, and the election of a new president were the outstanding items in Mexico's chronology for 1952.

In the July 6 elections, Adolfo Ruiz Cortines, candidate of the Party of Revolutionary Institutions, or P.R.I., official government party which had controlled Mexico politically for 23 years, was named president by an overwhelming majority. An estimated 5,000,000 voters went to the polls, establishing a new record in Mexican election history. The event was peaceful and relatively unmarred by violence. Ruiz Cortines was the second civilian president elected in 40 years, retiring Pres. Miguel Alemán having been the first.

Despite spirited efforts by left-wing forces, Vicente Lombardo Toledano, Popular party candidate and prominent Communist sympathizer, received but fractional support in the contest. The strongest opposition to the P.R.I. candidate was offered by Gen. Miguel Henríquez Guzmán, candidate and founder of the Federation of Peoples party.

President Alemán broke precedent by refusing to instruct P.R.I. party dependents as to whom they should favour for congressional nomination. Ruiz Cortines, in a pre-election statement, stirred considerable discussion and some opposition by pledging to give Mexican women the vote if he were elected.

Census tabulations released during 1952 showed a marked trend toward urbanization throughout the nation, with the greatest growth evidenced in states bordering the U.S.-Mexican frontier.

An uprising in Oaxaca (city) against a new state tax law left two dead and a score wounded in a week end of disturbances in March. A virtual state of siege existed as angry citizens attempted to bring about the dismissal or resignation of Gov. Manuel Mayoral Heredia. Later, the federal government

appointed Gen. Manuel Cabrera Carrasquedo to replace Governor Heredia.

Early in the year, Pres. Miguel Alemán ordered prices frozen on food, clothing, construction materials, automobiles and other items to halt inflation. With six months of his term remaining, Alemán reported that Mexico had invested 7,000,000,000 pesos in public works during his administration.

Heavy August rains, worst in 17 years, together with population increases, put unprecedented burdens on Mexico City's drainage system. Standing water resulted, causing millions of pesos in damages to downtown and residential structures. The city continued to sink more than a foot a year, creating serious problems in sewage and water distribution. It had sunk one foot and eight inches in 1951, according to Adolfo Orive Alba, head of the nation's irrigation department, who gave as the cause the rapid drying out of spongy volcanic subsoil underlying the capital.

Discussions regarding the "wetback" labour problem continued between the United States and Mexico, as did discussions of provisions of contracts between the two nations governing the importation of "bracero" farm workers from Mexico. By midyear, an air-lift service instituted by U.S. immigration and naturalization service officials was returning an estimated 1,700 "wetbacks" to Mexico each month. Immigration officials said that an estimated 1,000,000 border-jumpers were entering the southwestern states illegally each year, and asserted that the move was necessary to protect the legal importation of temporary Mexican labour under international agreement. The Mexican-U.S. accord on "bracero" labour was renewed for 18 months in June.

Progress in public health was highlighted by advances in polio research; by the announcement of a new and simple test for undulant fever; and by a report that smallpox had virtually ceased to be an epidemic disease in Mexico. Only 25 cases of smallpox were reported in the country in 1951, compared with as many as 1,000 annually as recently as 1949.

Parícutin, the young volcano which broke through a cornfield 200 mi. west of Mexico City in Feb. 1943, died a natural

ADOLFO RUIZ CORTINES (left) leaving the Palace of Fine Arts in Mexico City after his inauguration as president of Mexico on Dec. 1, 1952. With him was the outgoing president, Miguel Alemán



death in 1952, according to geologists.

Workers excavating for a water system in a Mexico City residential area uncovered remains of a Teotihuacán Indian culture, including a small shrine and several buildings. The culture uncovered was regarded as entirely separate from that of the ancient Toltec temples and pyramids north of Mexico City at San Juan Teotihuacán. (See also INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT.) (C. D. HE.)

Education.—Education is free, compulsory and secular. In June 1950 an estimated 3,986,428 students were enrolled in 29,036 schools and taught by 90,212 teachers and professors. There were 3,096,537 illiterates as of Sept. 1950 (Mexican government estimate).

Defense.—As of Jan. 1, 1952, there were 59,280 men in the air and ground forces, 3,280 of whom were assigned to the air force. As of the same date, the air force had an estimated 163 planes. On Jan. 1, 1952, the ministry of marine was operating 3 gunboats, 4 frigates, 1 armed transport and 30 coast guard vessels.

Finance.—The monetary unit is the peso of 100 centavos, stabilized in June 1949 at 11.56 cents U.S. currency or 8.65 pesos to the dollar. The federal budget for 1952 totalled \$462,336,000, of which \$113,377,000 was allocated for the public debt, \$80,531,000 for communications, \$49,454,000 for education, \$48,438,000 for hydraulic resources and \$38,002,000 for defense. Provisional federal tax receipts for 1951 totalled \$503,838,100. On Dec. 31, 1951, the funded internal debt totalled \$340,462,400 and the external debt, including the railway debt, \$138,994,200. Estimated national income for 1951 was \$4,855,500,000. On May 31, 1952, the Bank of Mexico had gold and foreign exchange holdings totalling \$187,000,000. Notes in circulation on July 31, 1952, totalled \$349,490,700.

Trade and Communications.—Exports in 1951 totalled 5,446,912,749 pesos (January–June 1952: 2,462,131,751 pesos); imports were 6,773,170,662 pesos (January–June 1952: 3,362,231,182 pesos). Leading exports in 1951 were cotton (20%), lead (10%), coffee (7%), zinc (6%) and petroleum products (5%). Leading imports included vehicles (10%), industrial machinery and apparatus (9%), chemicals (7%), agricultural machinery (4%) and wheat (4%). Principal customers were the U.S. (70%), France (4%), the United Kingdom (3%), Germany (3%) and Belgium (2%); principal suppliers, the U.S. (81%), the United Kingdom (2%), Germany (2%), France (2%) and Canada (2%).

As of Oct. 1951 there were 14,032 mi. of passable roads, 9,260 mi. of which were paved. Motor vehicles in Dec. 1950 included 173,080 automobiles, 18,466 buses and 111,252 trucks. In 1950 all air lines operating in Mexico flew a total of 26,041,104 mi. and carried 1,032,413 passengers. According to *Lloyd's Register of Shipping*, the merchant marine had 61 vessels (100 tons and more) aggregating 167,835 gross tons on June 30, 1951. On Nov. 30, 1951, there were 276,000 telephones. In Dec. 1951 there were 230 standard radio broadcasting stations and in Sept. 1952, 4 television stations.

Agriculture.—Agricultural production estimates in 1951-52 (in metric tons) included maize 3,400,000; wheat 370,000; rice 150,000; oranges 365,000; sugar 757,000; potatoes 122,000; cotton (lint) 282,000; henequen 77,000; cottonseed 425,000; beans 190,000; (1950-51) coffee 64,000; tobacco 35,000; barley 162,000; linseed 53,000; sesame 90,000.

Livestock estimates (1950) showed 13,628,288 cattle, 4,703,809 sheep, 6,893,305 goats, 5,474,747 hogs, 2,937,719 horses, 1,021,446 mules and 2,543,186 donkeys.

Manufacturing.—The total value of industrial production in 1951 was 5,057,274,000 pesos. Leading industries included cotton thread and cloth 985,823,000 pesos, beer 551,346,000 pesos, iron and steel 536,588,000 pesos and rubber goods 467,008,000 pesos. Tourism produced about \$271,600,000 income from 395,600 U.S. tourists.

Mineral Production.—Production in 1951 (excluding petroleum) totalled \$70,314 metric tons valued at \$280,303,140. Most important were lead 225,468 metric tons; zinc 180,064 tons; silver 43,790,723 oz.; copper 67,351 tons; gold 393,420 oz.; antimony 6,825 tons; cadmium 894 tons; iron ore 312,580 tons; manganese 28,524 tons. In 1951, 77,238,248 bbl. of crude petroleum and 1,471,300 bbl. of natural gasoline were produced. (I. W. Mw.)

Michigan. One of the north central group of states of the United States, Michigan was the 26th state admitted to the union; it is popularly known as the "Wolverine state." Land area: 58,216 sq.mi. (excluding 39,960 sq.mi. of Great Lakes water surface); pop. (1950 census): 6,371,766, a gain of 21.2% since 1940. Estimated population, Jan. 1, 1953: 6,650,000. Of the state's population in 1950, 70.7% was urban and 29.3% rural (compared with a 65.7 to 34.3 ratio in 1940). Whites composed 92.9% of the population, nonwhites 7.1% (compared with a 95.9 to 4.1 ratio in 1940). Capital: Lansing (pop. 92,129). Larger cities were (1950 census): Detroit (1,849,568); Grand Rapids (176,515); Flint (163,143); Dearborn (94,994); Saginaw (92,918).

History.—In 1952 Democratic Gov. G. Mennen Williams began his fourth year in office with an announcement that his specific goals were new taxes to solve the state's financial plight, higher unemployment compensation benefits to alleviate hardships arising from the increasing number of jobless workers and

to maintain purchasing power in industrial communities, speeding up of the state's "good roads" program, reorganization of the state government, disability insurance for persons unable to work because of illness, strengthening of Michigan's educational system particularly in the field of higher education, an extensive construction program for mental hospitals and improved tuberculosis control, provision for 200 more state troopers and an effective civil defense program. At the hands of a predominantly Republican legislature, the governor's program did not meet with much success during a 13-week session beginning on Jan. 9. Of more than 800 bills introduced less than one-fourth were passed; and in only two areas, control of sex deviates and warfare against communism, did the legislature get into really new fields. Workmen's compensation benefits were lifted \$4 per week, and the limit of unemployment compensation was increased from 20 to 26 weeks.

A Straits Bridge authority was empowered to issue bonds and to construct a \$100,000,000 bridge over the Straits of Mackinac, providing no state government money was used. A \$330,429,503 general fund budget was adopted.

In April a riot in the Southern Michigan State prison near Jackson, the world's largest prison, resulted in property damage of from \$2,500,000 to \$3,000,000.

Education.—In 1950-51 elementary school enrolment was 696,289, with 23,659 teachers; secondary school enrolment 372,582, with 15,029 teachers. There were 4,841 school districts. Institutions of collegiate rank numbered 40, with a combined enrolment of 76,858 as of the fall of 1951. Lee M. Thurston was superintendent of public instruction in 1952.

Social Insurance and Assistance, Public Welfare and Related Programs.—The department of social welfare reported that during the fiscal year July 1951–June 1952 the monthly average assistance loads and the total expenditures for assistance were:

Program	Monthly average case load	Annual total payments
Old-age assistance (persons)	93,887	\$54,124,447.10
Aid to dependent children (families) (children)	24,878 57,253	28,415,542.10
Aid to the blind (persons)	1,859	1,188,093.80
Aid to the disabled (persons)	1,035	740,442.30
General assistance (cases)	26,708	12,543,595.18
(persons)	62,545	

As of June 30 there were 1,042 children who were wards of the state under the supervision of the Michigan Children's institute. As of the same date 46 blind persons were employed at the Michigan Employment Institution for the Blind. The boys' vocational school was caring for 372 socially maladjusted boys; the girls' training school had an enrolment of 312 girls.

The various state institutions of correction and their populations as of June 1952 were as follows: State Prison of Southern Michigan, 6,278; Michigan reformatory, 1,281; state house of correction and branch prison, 1,035; Detroit house of correction, 469 (male 139, female 330); Cassidy Lake Technical school, 9,210; wayward minor boys in custody, 3. Total expenditures of the department of correction amounted to \$9,716,996 (not including capital expenditures).

Communications.—The amount of highway contracts awarded for 1952 was \$42,644,345.14; of this amount \$9,334,038.36 represented the amount of contracts for structures and paving on the Edsel Ford and John C. Lodge expressways in the city of Detroit. In addition to these amounts, there were contracts totalling \$2,618,000 for the year 1952 for bridges and similar structures on other highways. The 1952 maintenance budget was \$16,200,000. The annual traffic at the Straits of Mackinac was expected to exceed 760,000 vehicles. In order to expedite the completion of the construction of the Edsel Ford and John C. Lodge expressways in the city of Detroit, an \$80,000,000 bond issue was approved and bonds negotiated, the retirement of these bonds to be made from annual "motor vehicle fund" revenues to the state, counties and cities and annual federal-aid appropriations to the state. There were 106,896 mi. of highways in the state. Railroad mileage totalled 6,807.

Banking and Finance.—As of Sept. 5, 1952, 341 state banks had total assets of \$3,154,828,447.30; three industrial banks, \$13,138,277.51; five private banks, \$4,808,983.64; six trust companies, \$41,388,378.87. Total assets of 78 national banks in Michigan on June 30 were \$3,459,310,000. There were 36 state-chartered and 35 federally chartered building and loan and savings and loan associations. Invested savings in the state-chartered associations totalled \$161,041,209; those in the federally chartered associations totalled \$343,107,469. Total state cash receipts for the fiscal year ending on June 30 were \$818,014,433.04; total disbursements, \$820,043,402.68. The state had a bonded debt of \$234,461,000. At the end of the fiscal year on June 30 there was a general fund deficit of about \$65,000,000.

Agriculture.—Good growing conditions resulted in a general field crops total tonnage of 6% above average, although 2% below the 1951 production, because of reduced acreages for most of the cash crops and lower yields on oats and barley. The tonnage of fruit produced was 4% less than the 1951 crop and 5% below average.

Manufacturing.—Shortages in raw materials proved to be a serious handicap to the manufacturing industry, though this condition was some-

Table I.—Principal Crops of Michigan

Crop	Indicated 1952	1951	Average 1941-50
Corn, all, bu.	80,688,000	69,056,000	59,155,000
Wheat, bu.	38,186,000	30,800,000	24,625,000
Oats, bu.	50,985,000	60,183,000	50,477,000
Barley, bu.	2,378,000	3,876,000	4,386,000
Rye, bu.	600,000	868,000	861,000
Sugar beets, tons	539,000	605,000	704,000
Potatoes, bu.	10,730,000	10,800,000	16,958,000
Beans, dry edible (100-lb. bags) . .	3,630,000	4,234,000	4,455,000
Soybeans, bu.	2,320,000	2,460,000	1,687,000
Hay, all, tons	3,474,000	3,882,000	3,581,000
Apples, commercial, bu.	5,616,000	9,085,000	6,962,000
Peaches, bu.	3,397,000	605,000	3,861,000
Pears, bu.	1,078,000	966,000	721,000
Cherries, sweet, tons	8,300	6,800	4,400
Cherries, sour, tons	55,000	84,700	48,600
Grapes, tons	35,900	10,000	33,250

Table II.—Principal Industries in Michigan

(Value added by manufacture)

Industry	1950	1949	1947
Transportation equipment	\$3,110,023	\$2,484,613	\$1,938,214
Machinery (except electrical)	939,265	737,520	796,178
Fabricated metal products	767,719	524,111	496,091
Primary metal industries	611,124	427,178	427,239
Chemicals and allied products	396,868	301,180	281,118
Food and kindred products	352,201	332,786	284,824
Paper and allied products	213,429	165,789	174,319
Printing and publishing industries . .	174,311	163,208	136,983
Furniture and fixtures	149,427	110,353	94,922
Stone, clay and glass products	119,355	94,776	88,782
Electrical machinery	103,188	86,424	102,073
Rubber products	95,511	71,188	85,231
Lumber and products except furniture .	94,463	59,328	68,995
Miscellaneous manufactures	92,761	withheld	58,529
Petroleum and coal products	55,063	38,072	50,247
Instruments and related products . . .	29,371	22,035	20,058
Textile mill products	28,284	26,248	31,058
Leather and leather products	26,010	21,826	23,822

what relieved during the second half of the year. The Michigan Economic Development commission, established in 1947, continued its active program of assisting in the campaigns to locate industrial plants in the state.

(L. G. V. V.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in Michigan in 1949 and 1950, listing all items

Table III.—Principal Mineral Products of Michigan

(Short tons, except as noted)

Mineral	Quantity 1950	Value 1950	Quantity 1949	Value 1949
Bromine (lb.)	?	?	28,035,000	\$ 7,023,000
Cement (bbl.)	12,854,000	\$ 29,620,000	12,748,000	28,823,000
Clays	416,000	381,000	369,000	333,000
Coal	12,000	116,000	11,000	116,000
Coke*	2,731,000	39,192,000	2,484,000	34,773,000
Copper	26,000	10,653,000	20,000	7,686,000
Gypsum	1,474,000	4,091,000	1,264,000	3,470,000
Iron ore	14,359,000	72,359,000	12,312,000	55,237,000
Iron, pig*	2,157,000	?	1,542,000	?
Magnesium compounds	34,000	3,871,000	24,000	2,719,000
Natural gas (000 cu. ft.)	11,250,000	1,485,000	14,753,000	2,242,000
Natural gasoline (bbl.)	79,000	161,000	86,000	196,000
Petroleum (bbl.)	15,826,000	42,730,000	16,517,000	45,420,000
Salt	4,447,000	18,179,000	4,064,000	16,109,000
Sand and gravel	24,557,000	16,699,000	20,476,000	13,993,000
Stone	19,096,000	15,391,000	16,547,000	13,387,000
Other minerals . . . . .	...	14,126,000	...	4,506,000
Total		\$229,862,000		\$201,260,000

*Values for processed materials are not included in the totals.

†Value included with other minerals.

whose value exceeded \$100,000. Data for 1951 were not yet available. Michigan ranks 1st among the states in the production of gypsum and salt; 2nd in bromine, iron ore and sand and gravel; 3rd in stone; and stands 12th in the value of mineral output, with 1.94% of the U.S. total.

Microbiology: see BACTERIOLOGY.

Middle East.

The strategic importance of the middle east for the defense of the democracies against Communist aggression was early recognized by the United States. On March 12, 1947, it took the initiative in safeguarding the freedom of Greece and Turkey against encroachment by the U.S.S.R. The ancient importance of the area as a strategic centre was enhanced in recent years by the necessity of safeguarding its rich oil deposits. The growing political and social unrest in many parts of the region, especially in oil-rich Iran, an immediate neighbour of the U.S.S.R., and in Egypt and Syria; the change of regimes depending largely on the roused nationalist passions of the masses; the continuing bitter tension between Israel and the Arab states—all these elements

added to the instability of a strategically decisive area and frustrated United States and British efforts to organize the area for purposes of common defense and of common action for the improvement of social and economic conditions.

The most propitious soil for the organization of a middle eastern defense system was offered by Turkey, which not only had the largest and best equipped army in the middle east but also represented the best integrated national entity in that area. Together with Greece, Turkey became in 1952 a full-fledged member of the North Atlantic Treaty organization.

In their efforts to create a basis for a middle eastern regional defense organization going beyond Turkey and Greece, the United States and Britain sought above all to win the co-operation of Egypt, the largest Arabic-speaking country and the guardian of the Suez canal. The rise to power there of the government of Gen. Mohammed Naguib and its sweeping social reforms seemed to facilitate this task and also to prepare the way for a British-Egyptian understanding about the military protection of the Suez canal. The plan for an Allied middle east defense organization, put forward in the fall of 1951 by the United States, Britain, France and Turkey, had to be dropped in view of strong Egyptian hostility at that time; during 1952 more modest recommendations for an organization limited to machinery for consultation and planning were suggested, without, however, gaining definite shape. Meanwhile the United States and Britain continued with their plans of organizing an effective defense of the area. It was decided to build a large United States air base on the British-owned island of Cyprus at the site of a royal air force base between the capital of Nicosia and the seaport of Famagusta. Military chiefs of six western nations agreed on Oct. 21, 1952, in a meeting at Malta on plans for co-ordinating the North Atlantic treaty forces and the British defensive forces in the Mediterranean area.

A purely regional mid-eastern pact was represented by the Arab league, which started on March 22, 1945; but it was hampered from the beginning by dynastic and other rivalries and later weakened by defeat in the war against Israel, a defeat largely caused by the lack of co-operation among the Arab states. To counter these weaknesses, a joint defense and economic co-operation treaty was signed by the Arab league states April 13, 1950, ratified by the various states in 1951 and 1952 and finally came into force in August 1952. It stipulated in article II that "the contracting states consider any act of armed aggression made against any one or more of them or their armed forces, to be directed against them all. Therefore, in accordance with the right of self-defense, individually and collectively, they undertake to go without delay to the aid of the state or states against which such an act of aggression is made, and immediately to take, individually and collectively, all available steps, including the use of armed force, to repel the aggression and restore security and peace." For the implementation of this joint defense, a permanent military commission composed of representatives of the general staffs and a joint defense council, under supervision of the Arab league council, were to be formed to deal with all matters of joint defense, as well as an economic council to devise means for economic development.

At the 16th session of the Arab league council in Sept. 1952, Abdel Rahman Azzam, who had been its secretary-general from the beginning, resigned and Abdel Khalek Hassouna, former Egyptian foreign minister, was named his successor. A Syrian, Ahmed Shukeiry, was named assistant secretary-general. It was decided to place the Palestine question on the agenda of the United Nations general assembly meeting, opening in New York city in Oct. 1952. The uncertainty of Egypt's future was a retarding element in the work of the council, while on the other hand the abolition of the Egyptian monarchy, at least for all

practical immediate purposes, put an end to some of the dynastic rivalries which had disrupted plans for Arab unity.

At the end of 1952 the efforts of creating a middle east organization for common defense and economic co-operation continued to encounter serious difficulties. Neither the Arabs nor the Iranians had made up their minds whether to side openly with the west or to follow a policy of neutralism. In spite of the unsettled conditions, especially in Iran, no overt gains were made in 1952 by the Communists. On the other hand, interest in the fate of the middle eastern nations was shown also by Spain and by Pakistan. In April 1952 a large Spanish friendship mission visited the Arab states, and was warmly welcomed in Beirut, the capital of Lebanon, whose leaders were probably the most "western" Arabs in their outlook. By proposing a Mediterranean collective security pact from Cairo to Athens and from Ankara to Madrid, the Lebanese leaders wished to tie in the Arab world with the Mediterranean and to proclaim the unity of Islam and Christendom in the struggle against Communism. Lebanon is the only Arab country with a Christian majority. An opposed trend wished to link the Arab collective security pact in a pan-Islamic entente with Iran, Indonesia and Pakistan; Pakistan, the largest Mohammedan nation, was trying to assume the leadership of such an entente. Another form of this "Asian" orientation among the Arab states expressed itself in their co-operation in the "neutrality bloc" of the Arab and Asian peoples, which acted frequently as a unit in the United Nations and was active in 1952 in the defense of the Arab independence movements in the French protectorates of Tunisia and Morocco.

A world Moslem conference meeting in Karachi, Pak., in the middle of March 1952 urged the establishment of closer relations among the Moslem states and the abolition of passport and visa regulations as the first step toward evolving a common citizenship. (H. Ko.)

Middle East Defense Organization: see EGYPT; MIDDLE EAST.

Migration: see IMMIGRATION AND EMIGRATION; REFUGEES.

Milbank Memorial Fund: see SOCIETIES AND ASSOCIATIONS, U.S.

Milk: see DAIRY PRODUCTS.

Mineral and Metal Production and Prices.

In Table II are shown as much of the available data on world production of minerals and metals as can be condensed into two pages. The limited space does not permit the listing of many of the minor producers, but almost all commodities for which world output is published are included. Countries that produce only one or two commodities are omitted, but the table covers nearly all which produce three or more commodities, as reported by the foreign minerals staff of the U.S. bureau of mines, with a few gaps filled from various sources. After arranging the countries on a continental basis, the position in which they are listed is determined not by alphabetical order but by their relative commercial accessibility to the United States, so far as this can be judged. The only deviation from this arrangement is the grouping together of the Soviet Union and all its sat-

Table I.—Mineral and Metal Prices in 1952

New York market as reported by E. & M. J. Metal and Mineral Markets				London market as reported by the Metal Bulletin								
Jan. 3	Oct. 15	Grade	Units	Commodity	Grade	Units	Jan. 4			Oct. 10		
							£	s.	d.	£	s.	d.
19.00 ¢	20.00 ¢	99% ingot	Pound .	Aluminum	98-99%	Long ton	148	..	..	157	..	..
\$ 5.625	\$ 2.55	50-55% Sb	S.T. unit	Antimony, Ore	50-55% Sb	Unit . .	..	42	6	..	16	6
53.35 ¢	42.47 ¢	Domestic, cased	Pound .	Antimony	Domestic, 99%	Long ton	365	..	..	225	..	..
6.5 ¢	5.5 ¢	White oxide	"	Arsenic	Foreign, 99%	" (d)	56	5	..	59	10	..
\$ 1.56	\$ 1.56	4% Be	"	Beryllium-copper alloy	4% Be	"	1,695	..	..	2000	..	..
\$ 2.25	\$ 2.25	Ton lots	"	Bismuth	"	"	..	28	..	..	17	..
\$ 2.55	\$ 2.00	Commercial sticks	"	Cadmium	"	"	..	18	6	..	14	4
\$ 44.00	\$ 45.00	48% Cr ₂ O ₃ , 3 Cr:1 Fe	Short ton	Chromium, Ore	Rhodesian, 1st grade	Long ton	13	..	..	14	2	..
\$ 1.12	\$ 1.12	97% spot	Pound .	Metal	98-99%	Pound .	..	6	3	..	6	5
21.75 ¢	21.75 ¢	4-9% C, 65-69 Cr (a)	"	Ferroalloy	4-5% C, 60% Cr	Long ton	82	17	..	85	4	..
\$ 2.40	\$ 2.40	97-99% Co	"	Cobalt	"	Pound .	..	20	..	..	20	..
24.20 ¢	24.20 ¢	Domestic	"	Copper	Fire ref., high grade	Long ton	226	10	..	284	10	..
27.425 ¢	34.825 ¢	Export	"	"	Electrolytic	"	227	..	..	285	..	..
\$ 35.00	\$ 35.00	99.9% In	Ounce .	Gold	Official	Ounce .	..	248	..	..	248	..
\$ 2.25	\$ 2.25	Sponge, powder	"	Indium	"	"	..	12	..	..	12	..
\$200.00	\$200.00	Mesabi, nonbessemer	Long ton	Iridium	Sponge, powder	"	69	..	..	69	..	..
\$ 8.30	\$ 9.05	80%, Joplin, Mo.	Short ton	Iron Ore	"	"	..	(e)	..	..	(e)	..
\$245.95	\$188.10	New York	Pound .	Lead, Ore	"	"	..	(e)	..	..	(e)	..
19.00 ¢	14.00 ¢	99.8% car lots	"	Magnesium, Ingots	Foreign, soft	Long ton	175	..	..	91	10	..
24.50 ¢	24.50 ¢	"	"	Sticks	"	Pound .	..	2	4½	..	2	10½
32.50 ¢	32.50 ¢	48% Atlantic ports	L.T. unit	Manganese, Ore	Bars	"	..	3	1	..	3	8
\$ 1.225	\$ 1.21	96% Mn, 2% Fe	Pound .	Metal	48-50% Mn	Unit . .	..	70	..	..	72	..
29.00 ¢	36.825 ¢	78-82%	Long ton	Ferroalloy	96-98% Mn	Pound .	..	2	½	..	2	2½
\$185.00	\$225.00	19-21% Mn	"	Spiegel	78% Mn, 1% C	Long ton	41	8	2	49	..	8
\$ 75.00	\$ 85.00	"	"	Mercury	20% Mn	"	22	..	..	23	17	6
\$213.50	\$192.00	90% MoS ₂ (76 lb.)	Flask .	Molybdenum, Ore	85% MoS ₂	Unit . .	73	5	..	..	..	..
60.00 ¢	60.00 ¢	99% Mo	Pound .	Metal	Powder	Pound .	..	103	4¼	..	105	10
\$ 3.00	\$ 3.00	55-65% Mo (a)	"	Ferroalloy	70-75% Mo (a)	"	..	40	..	..	40	..
\$ 1.32	\$ 1.41	Cathodes	"	Nickel	Refined	Long ton	454	..	..	454	..	..
56.50 ¢	56.50 ¢	24% P	Ounce .	Palladium	"	Ounce .	8	10	..	8	10	..
\$ 24.00	\$ 24.00	Wholesale	Long ton	Phosphorus, Ferro-	20-25% P	Long ton	31	2	6	31	2	6
\$ 75.00	\$ 75.00	99.5%	Pound .	Platinum	"	Ounce .	30	2	6	30	2	6
\$ 90.00	\$ 90.00	97% Si, spot	"	Rhodium	"	"	..	42	10	..	42	10
\$125.00	\$125.00	50% Si (a)	"	Selenium	"	Pound .	..	23	3	..	23	3
\$ 3.25	\$ 3.25	75% Si (a)	"	Silicon	98% Si	Long ton	185	..	..	200	..	..
20.00 ¢	18.50 ¢	Foreign, New York	Ounce .	" Ferroalloy	45% Si	"	53	10	..	57	10	..
\$ 12.40	\$ 12.40	60% Ta ₂ O ₅ (a)	Pound .	Silver	75% Si	"	80	..	6	86	..	..
15.60 ¢	15.60 ¢	Sheet	Pound .	Tantalum, Ore	Official, spot	Ounce .	..	77	..	..	73	..
88.00 ¢	83.25 ¢	Straits	Pound .	Metal	60 65% Ta ₂ O ₅	Unit . .	21	..	..	27	10	..
\$ 2.25	\$ 2.50	20-25% Ti (a)	Short ton	Tellurium	Powder	Pound .	..	(e)	..	..	(e)	..
\$143.00	\$143.00	56-59% TiO ₂	Long ton	Tin	99%+	Pound .	..	19	..	..	18	6
\$ 1.75	\$ 1.75	94% TiO ₂	Pound .	Titanium, Ferroalloy	20-25% Ti	Long ton	925	5	..	970	..	..
\$ 1.03	\$ 1.215	Domestic	S.T. unit	" Rutile	50-52% TiO ₂ Malayan	"	175	..	..	195	..	..
\$ 1.40	\$ 1.40	Chinese	"	Tungsten, Ore	95% TiO ₂ Australian	Long ton	..	(e)	..	..	(e)	..
\$ 17.00	\$ 19.00	75-80% W (a)	Pound .	Ferroalloy	65%	Unit . .	42	10	..	57	10	..
4.00 ¢	7.50 ¢	98.8% W	"	Powder	80-85% W (a)	Pound .	33	..	..	..	28	7
\$ 65.00	\$ 65.00	" (c)	"	Vanadium, Ore	98-99% W	Pound .	..	35	..	..	31	7
(e)	(e)	" (a)	"	Ferroalloy	18-20% V ₂ O ₅	Unit . .	..	(e)	..	..	(e)	..
\$ 5.00	\$ 4.85	60%, Joplin, Mo.	Short ton	Zinc, Ore	35-60% V (a)	Pound .	..	15	..	..	22	..
\$ 6.00	\$ 6.00	St. Louis	Pound .	Metal	G.O.B., foreign	Long ton	..	(e)	..	..	(e)	..
31.00 ¢	31.00 ¢	"	"	"	"	"	190	..	..	118	..	..
\$ 3.10	\$ 3.10	" . . . . .	"	" . . . . .	" . . . . .	"	..	..	..	..	..	..
\$135.00	\$92.50	" . . . . .	"	" . . . . .	" . . . . .	"	..	..	..	..	..	..
19.50 ¢	13.50 ¢	" . . . . .	"	" . . . . .	" . . . . .	"	..	..	..	..	..	..

(a) Per pound of base metal contained. (b) Per pound of MoS₂ contained. (c) Per pound of V₂O₅ contained. (d) January quotation, per pound of contained Be, plus 2s. 3d. per pound of alloy; December, per long ton of alloy, equivalent to £ 16 2s. 1d. per pound of Be on the January basis. (e) Not quoted.

ellite countries, regardless of continental location, since not only is commerce with these countries so restricted as to be of little importance but also the commercial and political interests of the group are basically opposed to those of the U.S.

While the arrangement of the table in this fashion may add a few seconds to the time required to locate a specific country, it has the offsetting advantage that the table not only shows the bulk of any country's mineral output, but at the same time indicates the approximate relative accessibility of its products to the United States.

Table I is a compilation of the quotations for the leading metals and ores on the New York and London markets at the opening of the year and on the latest dates available at the time of going to press. Inspection of the New York quotations shows that approximately half were unchanged during the year 1952, while the other half split evenly between increased and lowered prices. The trend of prices is well illustrated by the *Engineering and Mining Journal* weighted index of nonferrous metal prices which, after declining from 194.06 in Feb. 1951 to 186.15 in August and September, rose to 195.10 in February and March 1952 and then declined to 178.59 in September, the lowest level reached since Sept. 1950, compared with 154.30 in June 1950, when the Korean war began, and 132.60 in March 1950. In general, reduced prices indicated that supply was adequate for current demand, but where demand was still in the lead, prices had advanced. (See also articles on the various minerals and metals.)

(G. A. Ro.)

Mineralogy. The new beryllium mineral taffeite, $\text{MgBe}(\text{Al}_2\text{O}_4)_2$, found as a cut gem stone, was reported by B. W. Anderson, C. J. Payne, G. F. Claringbull and M. H. Hey (*Mineralogical Magazine*, vol. xxix, pp. 765-772), and also C. J. Payne (*Journal of Gemmology*, London, vol. iii, pp. 234-235). Another new gem stone mineral, named sinhalite, MgAlBO_4 , was described by G. F. Claringbull and M. H. Hey (*Mineralogical Magazine*, vol. xxix, pp. 841-849). The name bystromite was given to the mineral MgSb_2O_6 , from El Antimonio, Sonora, Mex., by Brian Mason and C. J. Vitaliano (*American Mineralogist*, vol. 37, pp. 53-57). Detailed information about the new mineral robinsonite, $7\text{PbS}_6\text{Sb}_2\text{S}_3$, from the Red Bird mine, Pershing county, Nev., and the corresponding synthetic material was given by L. G. Berry, J. J. Fahey and E. H. Bailey (*ibid.*, vol. 37, pp. 438-446); also about aurostilbite, AuSb_2 , a new mineral in the pyrite group, from the Giant Yellow Knife mine, Northwest Territories, and from the Chesterville mine, Larder Lake, Ont., by A. R. Graham and S. Kaiman (*ibid.*, vol. 37, pp. 461-469).

The important "Survey of the Study of Hardness" with its extensive bibliography by J. A. Kohn was published as a 16-page supplement to the April 1952 number (vol. 12, no. 137) of the *Industrial Diamond Review* (London). "Abrasion Hardness" was discussed by T. A. Jaggar (*ibid.*, vol. 12, pp. 53-58). Further studies on the "Inclusions in Diamonds" were reported by Edward Gubelin (*Journal of Gemmology*, vol. iii, pp. 175-187, and *Gemmologist*, London, vol. xx, pp. 241-243).

The following researches on radioactive compounds appeared: "Pitchblende from Lake Athabaska, Canada," by E. J. Brooker and E. W. Nuffield (*American Mineralogist*, vol. 37, pp. 363-385); "Soddyite," by D. H. Gorman (*ibid.*, vol. 37, pp. 386-393); and "Synthesis and X-ray Study of Uranium Sulphate Minerals," by R. J. Traill (*ibid.*, vol. 37, pp. 394-406). Two articles helpful in the determination of colour in minerals were published by M. D. S. Lewis, "Colour Perception in Gemmology" (*Journal of Gemmology*, vol. iii, pp. 249-267) and "Measurement of Colour" (*ibid.*, vol. iii, pp. 289-304). L. C. Trumper discussed the use of "Colour Filters for Gem Testing" (*ibid.*,

vol. iii, pp. 149-163). Improved methods for the testing of pearls, whether natural or cultured, were described by L. B. Benson of the Gem Trade laboratory, New York city (*Gems and Gemology*, vol. vii, pp. 107-112).

The following texts were published: *Igneous and Metamorphic Petrology* by F. J. Turner and Jean Verhoogen; *Struktur und Eigenschaften der Krystalle*, by H. G. F. Winkler, Berlin, Ger.; *Optical Crystallography* (2nd ed.), by E. E. Wahlstrom; *Elements of Optical Mineralogy* (4th ed., part ii, "Descriptions of Minerals"), by A. N. Winchell and Horace Winchell; Dana's *Manual of Mineralogy* (16th ed.) by C. S. Hurlbut, Jr.

Frederick E. Wright of Washington, D.C., long recognized internationally as a distinguished mineralogist and petrologist, was designated as the 11th recipient of the Washington A. Roebbling medal of the Mineralogical Society of America. Wright had made important contributions to the development and manufacture of optical glass in the United States; in addition he had conducted significant studies of the surface features of the moon. (See also MINERAL AND METAL PRODUCTION AND PRICES.)

(E. H. Kr.)

Mining: see MINERAL AND METAL PRODUCTION AND PRICES. See also under various minerals.

Minnesota. A north central state, admitted to the union on May 11, 1858, Minnesota includes the northernmost land of the United States—the northwest angle. It is variously known as the "North Star" state, "Gopher" state and "land of 10,000 lakes." Its water area covers 4,059 sq.mi. of its total area of 84,068 sq.mi. The population according to the 1950 census totalled 2,982,483, an increase of 6.8% over 1940. Of this total, 54.5% lived in cities of 2,500 or more and in the urban fringe areas; nonwhites represented slightly less than 1%. The estimated 1951 population was 3,018,163. Three cities had a population of more than 100,000—St. Paul, the capital city, with 311,349; Minneapolis with 521,718; and Duluth with 104,511.

History.—There was no session of the legislature in 1952. C. Elmer Anderson completed his first full year as governor. Mike Holm, secretary of state continuously for 33 years, died during the year and his wife, Mrs. Virginia Holm, was appointed to the office. All other executive officers continued in office. These included J. A. A. Burnquist, attorney general; Valdimar Bjornson, treasurer; and Stafford King, auditor.

Education.—Approximately \$164,080,720 was spent by the 6,485 public school districts in Minnesota for 1951-52. This amount provided for 336,545 pupils in 4,650 elementary schools, 186,551 in 651 secondary schools, 1,039 in 9 junior colleges and 151 in 10 teacher-training departments. These pupils were taught by 12,471 elementary teachers, 9,298 secondary teachers, 125 teachers in junior colleges and 10 in teacher-training departments. In addition, five teachers' colleges were operated from public funds. For the support of these public elementary and secondary schools, the state contributed \$55,547,447, revenue from trust funds and the state income tax. Dean M. Schweickhard was commissioner of education.

Social Insurance and Assistance, Public Welfare and Related Programs.—In the fiscal year ending June 30, 1952, a monthly average of 96,142 persons received financial assistance amounting to \$52,454,374. Among those 65 years of age and over, there were 106,314 receiving either old-age assistance or old-age and survivors insurance or both in June. As of March 31, 9,292 children were receiving services from public welfare agencies. Children receiving services from physicians under the Minnesota Crippled Children's program during the year 1951 totalled 3,844.

About 825,500 workers were covered by the Minnesota Employment and Security law during 1951. Their wages amounted to \$1,868,851,700 for the year. An estimated \$11,715,000 was paid in unemployment compensation benefits during 1952.

On Oct. 1, 1952, the state prison and two reformatorys had a total of 1,765 inmates. Wards of the Minnesota Youth Conservation commission as of June totalled 399 in correctional institutions and camps plus 141 in diagnostic centres. October counts showed the eight state mental hospitals as having 9,244 patients, the two hospitals for mentally deficient 4,161. Gillette Hospital for Crippled Children had 202 patients while the three special schools for the deaf, blind and mentally deficient had 751.

Communications.—State trunk highways totalled 11,877 mi. in 1952, country roads 42,934 mi., township roads 54,538 mi., municipal streets 8,815 mi. plus 2,002 mi. of state national parks and institutional roads. Fiscal year (June 30, 1952) expenditures for construction and maintenance

of its highway system totalled \$54,684,911. With final payments on principal and interest totalling \$2,690,000, the department became bond debt-free for the first time since it was organized in 1921.

Railroad main line trackage totalled 8,343 mi., including 13 mi. of electrified, for the 22 railroads operating in the state. Another 4,328 mi. was reported for second main line, siding and yards.

Of the 114 airports in the state, 89 were municipally owned. Seaplane bases totalled 16 with 262 private landing strips reported. River barge tonnage receipts at St. Paul and Minneapolis through Aug. 1952 amounted to 751,514 tons while shipments totalled 52,416 tons.

Banking and Finance.—Minnesota's 682 state and national banks reported total resources of \$3,412,605,000 on June 30, 1952, compared with \$3,197,032,000 for 681 banks in 1951.

Represented were 499 state banks, 1 mutual savings bank and 4 trust companies reporting deposits of \$1,058,893,000, an increase of \$71,587,000, and resources of \$1,147,831,000, an increase of \$77,882,000. Deposits for the 178 national banks were \$2,092,535,000, an increase of \$128,409,000, with resources totalling \$2,264,774,000, an increase of \$137,691,000.

The 43 state-chartered savings, building and loan associations reported resources of \$117,281,000 in 1952 compared with 42 reporting \$106,191,000 in 1951. The 31 federal savings and loan associations had resources of \$350,780,000 in 1952 compared with \$301,292,000 the previous year. The 289 state-chartered credit unions reported assets of \$31,100,000 as of Dec. 31, 1951, while 52 federal credit unions had \$1,658,000 in assets.

Net disbursements of the state government (exclusive of public debt redemption, stores for resale, annuities and pensions, land and interest in land) totalled \$401,066,844 for the fiscal year ending June 30, 1952, compared with \$401,446,189 in 1951. Total state indebtedness in bonds and certificates was lowered by a net \$8,400,000 during the year to \$118,905,090 as of June 30, 1952. The four principal state trust funds totalled \$218,948,170 on June 30, 1952, compared with \$201,944,964 in 1951. Individual balances were as follows: internal improvement land, \$377,262; swampland, \$20,417,508; permanent school, \$167,502,992; permanent university, \$30,650,409.

Agriculture.—Minnesota farmers received \$1,287,000,000 during 1951 from the sale of crops, livestock and livestock products, thereby retaining its rank of fifth among states. Of this total cash income, \$986,000,000 came from the sale of livestock and livestock products while the remainder of \$301,000,000 was derived from the sale of crops. Cash farm income for the first six months of 1952 totalled \$588,000,000, 3% less than in the same period of 1951.

Table I.—Principal Crops of Minnesota

Crop	Indicated 1952	1951	Average 1941-50
Corn, all, bu.	269,331,000	215,038,000	222,046,000
Oats, bu.	203,819,000	212,764,000	174,803,000
Barley, bu.	26,256,000	38,555,000	28,563,000
Wheat, all, bu.	17,166,000	20,022,000	20,346,000
Flaxseed, bu.	10,720,000	10,845,000	13,532,000
Potatoes, bu.	12,765,000	11,900,000	17,209,000
Soybeans for beans, bu.	22,021,000	18,848,000	9,145,000
Hay, all, tons	7,426,000	6,921,000	6,281,000
Rye, bu.	1,986,000	2,850,000	2,317,000
Apples, bu.	182,000	342,000	169,000

Source: U.S. Department of Agriculture.

Manufacturing.—Minnesota's estimated 6,000 manufacturing establishments employed 223,535 workers in Sept. 1952, an increase of 5% over 1951. Weekly earnings averaged \$69.52. Covered wages of manufacturing industries (unemployment compensation) totalled \$730,096,719 in 1951. Value added by manufacturing exceeded the \$1,200,000,000 reported for 1950. (C. E. AN.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in Minnesota in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Min-

Table II.—Mineral Production of Minnesota

Mineral	(Short tons)			
	Quantity	Value	Quantity	Value
Clays	129,000	\$ 151,000	134,000	\$ 153,000
Coke*	834,000	13,030,000	782,000	12,694,000
Iron ore	72,283,000	311,716,000	62,656,000	239,859,000
Iron, pig*	652,000	?	455,000	?
Manganiferous ore	870,000	?	990,000	?
Sand and gravel	15,473,000	5,903,000	12,935,000	4,904,000
Stone	1,953,000	5,334,000	1,879,000	5,279,000
Other minerals		8,463,000		7,345,000
Total		\$331,567,000		\$257,540,000

*Values for processed materials are not included in the totals.

†Value included in other minerals.

nesota ranks first among the states in the production of iron ore, and stands tenth in the value of mineral output, with 2.80% of the U.S. total.

Mint, United States: see COINAGE.

Miquelon: see FRENCH UNION.

Missiles, Guided: see MUNITIONS OF WAR.

Missions, Foreign (Religious). During 1952, as in the two previous years, the greatest stresses on foreign missions were in China

and Korea. In China the Communist regime intensified its restrictions on the churches, both Catholic and Protestant. The expulsion of missionaries continued, regardless of nationality or denomination. The Communists seemed not to wish to kill them, but through public trials and meetings to make the deportation of missionaries contribute to the antiwestern propaganda. Missionaries were ejected on various charges, among them being that they were spies, were resisting the recruiting of volunteers for the Chinese forces in Korea and in other ways were seeking to subvert the Communist revolution. Of the few Protestant missionaries who remained, some were in prison, some were under house arrest and the others were keeping to their homes with little or no contact with the Chinese.

It was reported that during the first half of the year 696 Catholic missionaries were deported. In July the total of foreign Catholic personnel left in China was said to be 1,163. While ostensibly permitting religious liberty, in one way or another the Communists intensified their pressure on Chinese Christians.

The stabilizing of the front between the belligerents in Korea permitted the active prosecution of missions in the region protected by the United Nations. Much of this was by the Korean Christians. Many converts were won among the prisoners of war.

In Japan the end of the occupation brought no immediate change in the status or program of missions. The (Protestant) International Christian university, supported mostly by funds from the United States, began classes in May.

The improvement in the internal political picture in Burma eased the missionary situation, especially among the Karens, the racial group among whom were the majority of the Christians of the country.

The heightened nationalism in Iran, intensified by the dispute with the British over oil, brought severe restrictions on missions in that country.

The striking growth of Christianity in Africa south of the Sahara continued. Most, although not all, was accomplished by Catholic missionaries. The overwhelming majority of the Catholic missionaries were from Europe, more from France than from any other country, but the number from the United States and Canada, especially the latter, was mounting. African priests were increasing in number, however, and an additional African bishop was appointed. Africa vied with Latin America as the region to which the largest number of Protestant missionaries were sent from the United States. In June a conference on African missions was held at Springfield, O., under joint Protestant auspices, with a significant African delegation and with representatives from various western powers having colonial possessions in Africa.

The growth of Protestantism in Latin America continued. More Roman Catholic missionaries from the United States were at work in Latin America than in any other area.

In July a conference on the missionary obligation of the church was held in Willingen, Waldeck, Ger., by the International Missionary council with delegates from about 50 countries. Its purpose was to plan for the next steps in the worldwide program of Protestant missions. It was marked by close and harmonious collaboration of Protestants from the Americas, Europe, Asia and Africa. (K. S. L.)

Mississippi. A southern state of the U.S., admitted to the union in 1817, Mississippi is popularly known as the "Magnolia state"; area: 47,716 sq.mi. (47,248 sq.mi. land and 468 sq.mi. water); pop. (1950): 2,178,914, a decrease of 0.2% since 1940; capital: Jackson (98,271). Other cities of more than 20,000 population (1950 census): Biloxi (37,425); Greenville (29,936); Gulfport (22,659); Hattiesburg (29,474);

Laurel (25,038); Meridian (41,893); Natchez (22,740); Vicksburg (27,948). Of the state's population in 1950, 607,162 or 77.9% were urban.

History.—For 1952–56 the elected officials of the state were: governor, Hugh L. White; lieutenant governor, Carroll Gartin; secretary of state, Heber Ladner; attorney general, J. P. Coleman; state treasurer, Newton James; auditor of public accounts, William D. Neal; superintendent of education, J. M. Tubbs; commissioner of agriculture, S. E. Corley; commissioner of insurance, Walter Dell Davis; state tax collector, Mrs. Thomas Bailey; state land commissioner, Walter L. McGahey; supreme court clerk, Tom Q. Ellis.

In 1951 unusual activity centred around, first, a road development program, and second, the development and execution of plans for further expansion of schools and colleges for both white and Negro students.

A new college for Negroes was established at Indianola, a town in the Mississippi delta. Progress was made on the construction of new teaching and hospital buildings for the new four-year school of medicine of the University of Mississippi, located at Jackson. The school was to be in operation by 1954, under the jurisdiction of, but separate from, the university at Oxford.

Education.—In 1951–52 there were 970 white elementary schools in Mississippi and 2,615 Negro elementary schools, a total of 3,585. The enrolment in elementary schools was 463,116, of whom 215,497 were whites and 247,619 Negroes. The state had 486 approved white high schools and 180 approved Negro high schools. The enrolment of these approved high schools plus enrolments in nonaccredited schools gave a total enrolment of 87,666 in 1951–52. There were 9,896 white elementary and high school teachers (including superintendents and principals) and 8,753 Negro elementary and high school teachers (including superintendents and principals), a total of 16,649 teachers. The total enrolment in white elementary and high schools was 278,654; in Negro elementary and high schools, 272,128.

Social Insurance and Assistance, Public Welfare and Related Programs.—From July 1, 1951, through June 30, 1952, the state department of public welfare in Mississippi paid \$13,626,278 to 67,072 recipients of old-age assistance; \$829,310 to 3,208 recipients of aid to the blind; \$2,850,200 to 14,591 families for 42,905 dependent children; and \$168,286 to 1,097 recipients for aid to the permanently and totally disabled. Special child welfare workers were assigned to 48 county departments of public welfare and to Oakley Training school.

There were training units in two counties in which child welfare workers in training were given instruction before being assigned as workers to a county unit. The federal-state-county program of foster boarding care for children maintained 355 children in foster homes at a cost of \$92,934.42.

Communications.—In 1951–52 the state maintained 7,349.1 mi of highways; the counties maintained approximately 53,751 mi. In the fiscal year 1950–51 the state maintenance expenditures were estimated at \$4,773,891. The total mileage of railroads in the state on Dec. 31, 1951, was 3,838.28.

Banking and Finance.—On June 30, 1952, there were 178 state banks in Mississippi, with 23 branch banks and 43 branch offices; there were 24 national banks. The resources of state banks were \$644,485,814.79 and the total deposits were \$596,424,157.79; the resources of the national banks were \$237,884,961.71 and the total deposits were \$221,934,960.09. As of June 30, 1952, the balance in the general fund account was \$27,615,111.67; the special fund account was \$30,687,485.15. On June 30, 1952, the full faith and credit debt of the state of Mississippi was \$4,761,000; outstanding highway bonds (payable from gasoline tax) amounted to \$61,945,000, making a total debt of \$66,706,000.

Agriculture.—The 1950 census reported 251,382 farms of a total of 20,710,770 ac. In 1950 the total harvested acreage of 52 principal crops was 5,712,000 ac. The 1950 receipts from farm marketings were \$488,220,000, of which \$354,477,000 were from crops and \$134,245,000 from livestock products; the value of farm products consumed in farm households was \$87,852,000.

Manufacturing.—The value of manufactured products in Mississippi for

Table II.—Mineral Production of Mississippi

(In short tons, except as noted)

Mineral	1950		1949	
	Quantity	Value	Quantity	Value
Clays	562,000	\$ 2,184,000	508,000	\$ 1,654,000
Natural gas (thousand cu.ft.).	114,153,000	7,192,000	68,062,000	4,199,000
Natural gasoline (bbl.)	780,000	2,274,000	776,000	2,264,000
Petroleum (bbl.)	38,236,000	88,330,000	37,966,000	93,400,000
Petroleum gases (bbl.)	532,000	864,000	495,000	572,000
Sand and gravel	2,764,000	1,986,000	1,943,000	1,330,000
Other minerals		115,000		292,000
Total		\$102,945,000		\$103,711,000

the year 1951 was \$961,000,000, compared with \$914,000,000 in 1950. Income from pay rolls and profits totalled \$324,000,000 in 1951, compared with \$297,000,000 in 1950. (A. B. Bu.)

Mineral Production.—Table II shows the tonnage and value of those mineral commodities produced in Mississippi in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Mississippi ranks 25th among the states in the value of mineral output, with 0.87% of the U.S. total.

Missouri. A west north central state of the U.S., Missouri was admitted to the union in 1821; it is popularly known as the "Show Me state." Area: 69,674 sq.mi., of which 448 sq.mi. are water. Pop.: (1950 census) 3,954,653 (61.5% urban, 38.5% rural; 90.2% white, 9.8% nonwhite). Capital: Jefferson City (1950 census, 25,099). Largest cities (1950 census): St. Louis (856,796); Kansas City (456,622); St. Joseph (78,588); Springfield (66,731); University City (39,892); Joplin (38,711); Independence (36,963).

History.—The 66th general assembly convened in regular session on Jan. 3, 1951, and adjourned on April 30, 1952. Both houses had Democratic majorities, the house of representatives consisting of 85 Democrats and 69 Republicans (with 4 vacancies), the senate of 21 Democrats and 13 Republicans. The legislature proposed that two constitutional amendments be voted on at the general election on Nov. 4, 1952: one to limit regular sessions of the general assembly to five months; the other to permit school districts to increase their debt from 5% to 10%.

The greatest flood in the history of the Missouri river occurred during April 1952, affecting Missouri and six other states. It was caused by the rapid melting of heavy snow in Montana, North Dakota and South Dakota. Missouri's loss was \$53,842,000, which was the largest of the flood-affected states.

In the primary election on Aug. 5, 1952, Phil M. Donnelly de-

FREIGHT TERMINAL opened by the Missouri Pacific railroad in St. Louis, Mo., in 1952, adjoining its Lesperance street yards. The new terminal included 12 service tracks and accommodated 180 freight cars



Table I.—Principal Crops of Mississippi

Crop	Indicated 1952	1951	Average 1941–50
Cotton (500-lb. bales)	1,800,000	1,608,000	1,652,000
Corn, bu.	27,135,000	38,141,000	44,293,000
Lay, tons	700,000	774,000	1,024,000
Oats, bu.	6,680,000	3,335,000	9,294,000
Potatoes, bu.	472,000	522,000	1,531,000
Sweet potatoes, bu.	1,560,000	1,320,000	4,836,000
Soybeans, bu.	6,300,000	5,950,000	2,508,000
Wheat, bu.	7,200,000	13,600,000	6,939,000
Peas, lb.	432,000	255,000	702,000
Beans, bu.	162,000	126,000	275,000
Peas, bu.	1,118,000	700,000	—
Rice (100-lb. bags)			

Source: U.S. Department of Agriculture.

feated Phil Welch for the Democratic nomination for governor, and Howard Elliott defeated Stanley Dale for the Republican nomination.

In the same election Stuart Symington defeated J. E. Taylor (supported by President Truman) for the Democratic nomination for U.S. senator, and James P. Kem (incumbent) defeated William McKinley Thomas for the Republican nomination.

The major state officers (Oct. 1952), all Democrats, were: Forrest Smith, governor; James T. Blair, Jr., lieutenant governor; Walter H. Toberman, secretary of state; W. H. Holmes, auditor; M. E. Morris, treasurer; J. E. Taylor, attorney general.

Education.—For the school year ended June 30, 1952, the public school system consisted of about 5,500 elementary schools, with 522,675 pupils and 17,839 teachers; 665 secondary schools, with 150,408 pupils and 6,919 teachers. Hubert Wheeler was state commissioner of education.

In Oct. 1952 about 23,003 World War II and Korean war veterans were enrolled in Missouri in the various training programs: farm training, 10,012; job training, 1,394; institutional (trade schools, universities, etc.), 11,597.

Social Insurance and Assistance, Public Welfare and Related Programs.—For the year ended June 30, 1952, unemployment insurance totalled \$14,162,725, paid to about 175,000 persons. For the year ended June 30, 1952, old-age assistance amounted to \$69,282,883, aid to dependent children \$14,222,932, general relief \$3,526,972, pensions for the blind \$620,245, aid to the blind \$1,078,821 and aid to the disabled \$5,741,225. In June 1952, 131,377 persons received old-age assistance, 21,679 families (54,258 children) aid to dependent children, 9,101 persons general relief, 610 persons blind pensions, 2,680 persons aid to the blind and 11,562 aid to the disabled. During the year ended June 30, 1952, the state penitentiary had an average of 2,975 inmates per day, the reformatory (Algoa) 444, and the expenditures for these institutions amounted to \$2,223,144. On June 30, 1952, the three state training schools (Boonville, Chillicothe and Tipton) had a population of 238 boys and 163 girls, and for the year ended June 30, 1952, their expenditures totalled \$771,191.

Communications.—On Dec. 31, 1951, Missouri had 19,521 mi. of state highways and 80,643 mi. of rural roads. During 1951 the state highway department spent \$53,071,997 (state and federal funds), of which \$24,813,407 was for construction and \$13,997,510 was for maintenance. In 1951 railroad mileage totalled 6,735. There were 1,230,138 telephones in use on Sept. 30, 1952.

Banking and Finance.—On Dec. 31, 1951, Missouri had 496 state banks with deposits of \$2,467,571,000 and resources (loans and investments) of \$2,209,055,000; 79 national banks with deposits of \$1,506,959,000 and resources (loans and investments) of \$1,454,398,000. On June 30, 1952, Missouri had 153 savings and loan associations with resources of \$415,002,400. During the fiscal year ended June 30, 1952, receipts in all state funds totalled \$280,937,364; disbursements, \$279,378,655. On June 30, 1952, the unobligated balance of all funds (state and federal) was \$119,490,136. The state debt (road bonds) on July 1, 1951, was \$30,000,000 and on June 30, 1952, \$22,000,000.

Agriculture.—During 1951 cash income from crops and livestock was \$1,160,372,000, and cash income from government payments was \$10,866,000. The value of Missouri's 1951 crops was \$560,642,000, and the

value of the 1952 crops, harvested from an estimated 13,300,000 ac., was estimated at \$525,000,000.

Manufacturing.—The number of persons employed in Missouri's manufacturing industries in 1947 was 327,515, and salaries and wages totalled \$827,184,000. The value added by manufacture of products in 1947 totalled \$1,623,145,000, compared with \$581,804,000 in 1939, when the previous U.S. census of manufactures was taken. (R. P. Br.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in Missouri in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Missouri ranks 1st among the states in the production of lead and 2nd in barite, and stands 23rd in the value of mineral output, with 0.95% of the U.S. total.

Mohammedanism: see ISLAM.

Molybdenum: see MINERAL AND METAL PRODUCTION AND PRICES.

Monaco. This sovereign principality on the Mediterranean coast, 9 mi. E. of Nice, Fr., is bounded on all land sides by the French *département* of Alpes Maritimes. Area: 0.6 sq.mi. Pop. (1946 census): 19,242, including 1,975 Monacans; 10,522 French and 6,745 other foreigners; (1951 est.) 21,000. Ruler, Prince Rainier III; minister of state in 1952, Pierre Voizard.

History.—In May 1952 there was a rumour that the 52-year-old Princesse Ghislaine, a former actress and the second wife of Prince Louis (who died on May 9, 1949), had been evicted from the palace by Prince Rainier. On May 9 a spokesman of the Monacan government denied the rumour, but it was known that a dispute existed between Prince Rainier and Princesse Ghislaine about Louis' will, in which he had left all crown properties to his grandson and successor but half of his private fortune to his wife (about £150,000). Prince Rainier claimed that Louis had no right to make separate legacies and that all belonged to the crown. The court of revision, consisting of ten French lawyers chosen by the French foreign office, invalidated the will. The Société des Bains de Mer, which owned the casino and most of the hotels, intervened, and a compromise in the form of a pension for Princesse Ghislaine was agreed upon.

The Académie Internationale du Tourisme, founded by Prince Rainier in 1951, held in August its second session at Monte Carlo. The previous year it had organized a competition for the best definition of the term *tourisme*. It awarded on Aug. 23 the first prize to R. de Meyer, a Belgian, for the following definition: "A collective term for human movement and its attendant activities, caused by the exteriorization and fulfillment of the desire to escape that is more or less latent in everybody."

Finance.—Budget (1950 actual): revenue 1,085,500,000 fr.; expenditure 1,182,800,000 fr. (including 126,000,000 fr. extraordinary for equipment and reconstruction). The monetary unit is the French franc, valued in 1952 at .2857 cents U.S.

Monetary Units: see EXCHANGE CONTROL AND EXCHANGE RATES.

Money Markets: see BANKING.

Table I.—Principal Crops of Missouri

Crop	Indicated 1952	1951	Average 1941–50
Corn, bu.	170,840,000	132,022,000	145,301,000
Wheat, bu.	26,378,000	22,406,000	20,644,000
All hay, tons.	4,002,000	4,961,000	4,396,000
Cotton, bales	385,000	309,000	362,000
Oats, bu.	25,683,000	27,738,000	43,602,000
Soybeans, bu.	34,240,000	25,800,000	12,438,000
Rye, bu.	220,000	275,000	453,000
Tobacco, lb.	5,980,000	5,000,000	5,965,000
Potatoes, bu.	1,118,000	1,456,000	3,022,000
Sweet potatoes, bu.	180,000	275,000	598,000
Sorghum for grain, bu.	262,000	391,000	865,000
Apples, bu.	884,000	1,440,000	1,205,000
Peaches, bu.	675,000	304,000	613,000
Pears, bu.	129,000	132,000	194,000
Grapes, tons	3,900	4,400	4,490

Source: U.S. Department of Agriculture.

Table II.—Mineral Production of Missouri

(Short tons, except as noted)		1949	
Mineral	1950	Quantity	Value
Barite.	213,000	187,000	\$ 1,498,000
Cement (bbl.).	9,780,000	8,519,000	19,348,000
Clays	1,533,000	1,469,000	3,963,000
Coal	2,963,000	3,647,000	14,919,000
Copper	3,000	4,000	1,446,000
Iron ore	217,000	163,000	*
Lead	135,000	128,000	40,297,000
Lime	1,035,000	879,000	8,035,000
Sand and gravel	6,232,000	5,194,000	4,347,000
Silver (oz.).	236,000	123,000	112,000
Stone	10,300,000	9,563,000	13,969,000
Tripoli.	?	16,000	506,000
Zinc.	8,000	6,000	1,466,000
Other minerals			1,387,000
Total	\$113,191,000		\$111,293,000

*Value included in other minerals.

Mongolian People's Republic. This soviet-dominated people's republic of eastern Asia is bounded north by the U.S.S.R. and east, south and southwest by China. Area: 606,000 sq.mi. Pop.: no census ever taken; estimates vary from 850,000 (soviet, 1941) to 2,078,000 (Chinese, 1945); U.N. est. (1951) 885,000. Language: Mongol. Religion: Lamaist-Buddhist. Capital: Ulaan Bator (pop., 1951 est., 80,000). Chairman of the presidium of the Great Hural (parliament): G. Bumatsende. Chairmen of the council of ministers in 1952: Khorloghiyin Choibalsan and from May 28, Yumzhaghiyin Tsedenbal.

History.—The year 1952 was marked by the death on Jan. 26 of Marshal Choibalsan, the prime minister and commander in

chief, who died from cancer in Moscow; his body was escorted to Ulan Bator by a delegation of the soviet government headed by M. P. Tarasov, chairman of the presidium of the Russian Soviet Federated Socialist Republic, and by Marshal S. M. Budenny. The burial on Feb. 9 was attended by a Chinese delegation headed by the acting chief of staff.

In Choibalsan the Kremlin had lost a faithful friend not easy to replace. Although the Mongolian Great Hural met from February 28 to March 1 for its second session, no successor was appointed. Not until May 28 did the presidium of the Great Hural appoint as premier Yumzhaghiyin Tsedenbal, who had been secretary-general of the Mongolian People's Revolutionary (Communist) party since Sept. 1945 and deputy premier from Dec. 1948.

Tsedenbal visited Moscow in August, and was greeted at the airport not only by A. I. Mikoyan, a deputy premier, and A. Y. Vishinsky, minister of foreign affairs, but also by Chou En-lai, the Chinese premier and minister of foreign affairs, who was also visiting the soviet capital. Tsedenbal was received by Joseph Stalin on Sept. 5 and left Moscow on Sept. 23. Four days later he reported on his Moscow talks to the council of ministers at Ulan Bator. It was believed that the construction of a new direct railway link between Irkutsk and Peking through Ulan Bator was decided.

On Sept. 28 Tsedenbal arrived in Peking accompanied by M. Lhamsurun and B. Shirendyb, the ministers of foreign affairs and education. The Mongolian delegation was greeted at the airport by Chou En-lai and the following day was received by Mao Tse-tung. On Oct. 4 a Chinese-Mongolian agreement for economic and cultural co-operation was signed. This was the first official visit by a Mongolian premier to China.

Education.—Schools (1952): elementary and secondary 400; technical 14. Further education at a teachers' training college and the university college of Ulan Bator. Literacy: (1947) 42.5%; (1952) nearly 90%.

Finance.—Budget (1952 est.): revenue 380,495,500 tugriks; expenditure 374,040,300 tugriks. Monetary unit: tugrik, at parity with the rouble. (K. SM.)

Montana. Popularly known as the "Treasure state," Montana is the largest of the northwestern states and the third largest in the United States, with a land area of 145,878 sq.mi. and a water area of 1,260 sq.mi. The federal census of 1950 showed a population of 591,024, an increase of 5.6% over the population of 1940. Principal cities: Helena, the capital (17,581); Great Falls (39,214); Butte (33,251); Billings (31,834); Missoula (22,485); Bozeman (11,325); Anaconda (11,254); Kalispell (9,737); Miles City (9,243); Havre (8,086). The urban population numbered 258,034 or 43.7% compared with 37.8% in 1940. Of the state's total population, 572,038 or 96.8% were whites of whom 528,919 were native born. Other races, totalling 18,986, including 16,606 Indians and 1,232 Negroes.

History.—Incumbents in the principal state offices in 1952 were John W. Bonner (Dem.), governor; Paul Cannon (Dem.), lieutenant governor; Sam W. Mitchell (Dem.), secretary of state; Arnold H. Olsen (Dem.), attorney general; John E. Henry (Rep.), treasurer; John J. Holmes (Dem.), auditor; and Mary M. Condon (Dem.), superintendent of public instruction. In the biennial election of 1950, Republicans gained control of both houses of the state legislature. No legislative session was held in 1952.

The "Little Hoover" Commission on Reorganization of State Government, appointed for two years by the 1951 legislative session, held monthly meetings in 1952. Its close scrutiny of state personnel methods revealed the lack of any well-defined classification of positions, with many inequities in wage scales as a result. This led to a recommendation, to be presented to the 1953 legislature, for the establishment by law of a state

personnel commission of four members, to be appointed by the governor and headed by a full-time director. Noting the weakened position of the legislature because of the trend toward wide grants of authority to executive administrative agencies, the reorganization commission further recommended that the 1953 legislature create a permanent state legislative council to consist of eight members—four representatives and four senators—which would function on a year-round basis and keep the legislature in touch with changing conditions which required legislative action. Such a council, it was urged, would improve legislative planning and leadership and restore to that branch of government its rightful place in a governmental system of divided powers. Other recommendations by the reorganization commission called for the creation of three interdepartmental advisory councils, designed to co-ordinate related activities of state departments concerned with public welfare, health and institutions; natural resources and development; and agriculture and livestock.

An amendment proposed for referendum in Nov. 1952 would empower the state legislature to increase the terms of office of elective or appointive officials in counties, townships and municipalities to a maximum of four years. Initiative measure no. 55, appearing on the voter's ballot at the same time, would make possible an increase of another one cent per gallon in the tax on gasoline.

Education.—There were 1,209 elementary schools in Montana in 1951-52, with an enrolment of 84,111 and a teaching staff of 3,576. There were 176 high schools with 27,599 students and 1,334 teachers. The total cost of operating elementary and secondary schools was \$28,531,309 during the fiscal year 1951-52. An outstanding development in Montana education in the past few years had been the inclusion of nearly all of the Indian children in the state in the public schools.

Social Insurance and Assistance, Public Welfare and Related Programs.—Approximately 23,651 persons received public assistance in the fiscal year 1951-52. Grants totalling \$11,660,238 were distributed as follows (figures in parentheses indicate the average number of recipients per month): old-age assistance (11,369) \$7,001,311; aid to dependent children (8,448) \$2,431,337; aid to needy blind (532) \$360,027; subsistence (768) \$280,927; medical care (821) \$169,036; aid to disabled (1,030) \$686,192; hospitalization (648) \$678,670; burials (35) \$52,738. Unemployment benefits of \$2,112,925 were paid to 16,040 persons, an average of \$18.35 per week for 8.9 weeks or \$131.72 per claimant. Correctional institutions with their average populations and total expenditures for 1951 were: Montana State prison, 570 inmates, \$435,996; state industrial school, 125 inmates, \$181,778; vocational school for girls, 36 inmates, \$98,423.

Communications.—In 1952 the state highway commission maintained 9,032 mi. of highways, of which 1,044 mi. were unsurfaced. The total local rural mileage system totalled 60,679 with 12,985 mi. surfaced with gravel or oil. State highway expenditures during the fiscal year 1951-52, including federal aid, were \$21,148,111, of which \$11,539,562 was for construction and \$6,719,290 for maintenance. The total number of airports listed on the U.S. aeronautical charts for Montana in 1952 was 118, not including any of the 210 landing strips maintained by farmers and ranchers on their own individual properties and used intermittently with the season's need. The number of registered aircraft was 1,113, of which 812 were in active service. The railway mileage was 5,241. The number of telephones as listed for July 1, 1952, was 158,481.

Banking and Finance.—On June 30, 1952, Montana had 71 state banks with deposits of \$292,521,423 and assets of \$307,906,925; and 39 national banks with deposits of \$298,944,000 and total assets of \$312,680,000. There were 15 building and loan associations with assets of \$28,459,121. For the fiscal year ending June 30, 1951, the net state revenue, all sources, was \$79,228,275, and the expenditures totalled \$75,923,255. The gross debt of the state on July 1, 1951, was \$6,586,000 and the net debt \$5,423,791.

Agriculture.—The aggregate production in 1952 for the 11 principal crops of Montana was forecast at only 7.6% below average despite the early season's drought which covered much of the eastern and central part of the state. The forecast of 77,458,000 bu. for spring and winter wheat was nearly 5,000,000 bu. above the ten-year, 1941-50, average, but 21% less than the record 1951 crop of nearly 98,000,000 bu. With the excep-

Table 1.—Principal Crops of Montana

Crop	Indicated 1952	1951	Average 1941-50
Wheat, bu.	77,458,000	97,988,000	72,532,000
Hay, tons	2,542,000	2,363,000	2,588,000
Barley, bu.	12,906,000	12,880,000	16,563,000
Sugar beets, tons.	481,000	537,000	774,000
Oats, bu.	9,261,000	10,200,000	12,999,000
Potatoes, bu.	2,475,000	2,150,000	2,337,000
Corn, bu.	2,030,000	2,392,000	3,073,000
Dry beans, 100-lb. bags	112,000	141,000	297,000
Flaxseed, bu.	70,000	198,000	1,394,000
Dry peas, 100-lb. bags	61,000	62,000	273,000
Rye, bu.	84,000	94,000	307,000

Source: U.S. Department of Agriculture.

tions of barley, hay and potato production, the volume of all crops harvested was less than in 1951. The cash farm income in 1951 was \$288,000,000, slightly more than 28% of the record total personal income of \$1,026,000,000 paid to individuals in Montana during that year.

Table II.—Industrial Products of Montana

Products	1951	1950	1949
Cheese, lb.	2,775,000	3,010,000	2,965,000
Butter, lb.	7,115,000	8,340,000	8,025,000
Ice cream, gal.	2,719,000	2,797,000	2,964,000
Beet sugar, cwt.	1,570,000	2,250,000	1,940,000
Beer, bbl.	210,249	199,302	200,594
Gasoline, gal.	241,794,090	293,240,097	255,169,417
Electric power generated, kw.hr.	3,234,500,000	3,135,752,000	2,915,361,000
Lumber, bd. ft.	—	—	458,520,000

Manufactures.—The total value added by manufacture (1950 census) in the 900 manufacturing establishments in Montana was \$107,837,000, compared with \$92,258,000 for 652 manufacturing establishments in 1947. Estimates of the state unemployment compensation commission indicated that during the fiscal year 1951-52 an average of 18,300 covered employees were employed in manufacturing in Montana, with total wages of \$66,738,589. The official estimate for total employment for all Montana, aside from agriculture, during the same period was 151,700. In 1951 manufacturing pay rolls constituted only 6.3% of aggregate incomes in Montana compared with 23.9% nationally, indicating the lack of industrial development in the state. (E. E. B.)

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in Montana in 1949 and 1950, listing all items

Table III.—Mineral Production of Montana

(Short tons, except as noted)

Mineral	1950		1949	
	Quantity	Value	Quantity	Value
Coal	2,520,000	\$ 5,861,000	2,766,000	\$6,312,000
Copper	54,000	22,663,000	57,000	22,305,000
Gold (oz.)	52,000	1,812,000	53,000	1,845,000
Lead	20,000	5,297,000	18,000	5,687,000
Manganese ore	131,000	↑	122,000	5,068,000
Natural gas (thousand cu. ft.)	39,186,000	2,077,000	35,291,000	1,962,000
Natural gasoline (bbl.)	98,000	350,000	86,000	210,000
Petroleum (bbl.)	8,109,000	20,430,000	9,118,000	23,520,000
Petroleum gases (bbl.)	153,000	450,000	144,000	431,000
Phosphate rock	235,000	1,496,000	397,000	2,574,000
Sand and gravel	9,044,000	5,140,000	6,682,000	3,366,000
Silver (oz.)	6,591,000	5,965,000	6,327,000	5,726,000
Stone	919,000	949,000	603,000	564,000
Zinc	68,000	19,221,000	54,000	13,440,000
Other minerals	—	11,678,000	—	5,060,000
Total	—	\$103,389,000	—	\$98,070,000

whose value exceeded \$100,000. Data for 1951 were not yet available. Montana ranks first among the states in the production of manganese ore, second in zinc and third in silver, and stands 24th in the value of mineral output, with .87% of the U.S. total.

Montreal. A city in the province of Quebec, Can., first called Ville Marie, Montreal was founded in 1642. The census of 1951 gave the city proper a population of 1,021,520 and that of greater Montreal 1,395,400.

The port of Montreal is the largest in Canada. Deep-sea arrivals (commercial) in the first nine months of 1952 numbered 1,080, with a net tonnage of 3,668,585. The number of coastal or inland vessel arrivals and other commercial vessels in the same period was 2,489, with a net tonnage of 2,852,901.

The total of water-borne cargo tonnage which passed through the port during the first nine months of 1952 was 11,312,009; this consisted of 5,066,283 inward (foreign 2,518,701, domestic 2,547,582) and 6,245,726 outward (3,941,277 foreign, 2,304,449 domestic).

The assessed value of real estate as of April 30, 1952, was \$1,763,732,310, of which \$1,369,738,816 was taxable and \$393,993,494 was exempt from taxation.

During the nine months ending Sept. 30, 1952, building permits were issued for 2,978 new buildings having a value of \$51,442,000, and for 2,089 repairs having a value of \$6,585,325.

(J. A. MA.)

Montserrat: see LEEWARD ISLANDS.

Moral Re-Armament, World Assembly for: see WORLD ASSEMBLY FOR MORAL RE-ARMAMENT.

Mormons. Probably the outstanding event in the church in 1952 was the tour of the European missions of the church by David O. McKay, president of the Church of Jesus Christ of Latter Day Saints. He spent two months visiting the members in Great Britain, Norway, Sweden, Finland,

Denmark, the Netherlands, France, Belgium, Switzerland and western Germany. There were approximately 35,000 members in this area. One of the principal results of this tour was the decision made to build a temple in Europe, to be located in Switzerland.

The building program of the church steadily progressed during the year, with 137 churches completed and dedicated, most of them in the United States.

At the time of the spring runoff of snow water from the mountains east of Salt Lake City, the high water flooded considerable areas in that city. The welfare organization of the church took care of the evacuation of residents of flooded areas and largely carried out the subsequent cleaning up and restoration measures after the waters abated. All services were supplied by the welfare organization through donated, volunteer labour, without the expenditure of money by the organization. Church-wide, the welfare organization in 1952 extended help in the form of food, clothing, shelter and fuel to about 40,800 persons. (See also CHURCH MEMBERSHIP.) (J. R. CL.)

Morocco, French. A sultanate of northwest Africa, with both Mediterranean and Atlantic coast lines, Morocco is divided into French protectorate (to which the historical and statistical sections below refer), Spanish protectorate (see SPANISH COLONIAL EMPIRE) and international zone of Tangier (*q.v.*). Areas and populations are shown in the table.

	Area (in sq. mi.)	Population (1951 est.)
French protectorate	153,870	8,500,000
Spanish protectorate	17,631	1,200,000
Places of Spanish sovereignty*	823	185,000
Tangier	232	172,000
Total	172,556	10,057,000

*Alhucemas, Ceuta, Chafarinas, Melilla, Peñón de Velez and the Ifni territory (741 sq.mi.).

French protectorate pop.: (1949 est.) 9,200,000, mostly Arabs and Berbers who are Moslem and speak Arabic (64%) or Berber (22%) or are bilingual (14%); (1947 census) Europeans 325,000, including 266,133 French; Jews 225,000. Chief towns (pop. 1947 census): Rabat (cap., 161,416); Casablanca (511,222); Marrakesh (238,277); Fez (200,946); Meknès (159,811). Ruler, Sultan Sidi Mohammed ben Youssef III; grand vizier, Hadj Mohammed el-Mokri; French resident general in 1952, Gen. Augustin Guillaume.

History.—On March 14, 1952, the sultan asked the French government to revise the protectorate statute, to set up a new Moroccan government in order that the appropriate negotiations could be pursued, and to grant certain freedoms (notably to form trade unions). The French government's answer (Sept. 17) was to suggest that the political transformation should begin with fundamental democratic reforms: councils elected in the rural areas and Franco-Moroccan commissions in the urban communities having European residents. In October the sultan made the dispute public by announcing that the French proposals would lead to a division of sovereignty in Morocco. The Quai d'Orsay rejected this interpretation. In the council of government the three electoral colleges assured the resident general of their desire to co-operate. The Arab states and certain Asiatic governments made further complaints to the United Nations about the Moroccan situation.

On Aug. 27 the International Court of Justice at The Hague, in judgment on a dispute between France and the United States, ruled that the maintenance of control over U.S. imports, while French imports were exempt, was illegal and further that account was to be taken of the value of imports in their country of origin as well as the value in Morocco. On the other hand it decided that U.S. citizens should be subject to local law except



FANTASIA at an annual festival in the holy city of Moulay Idris, French Morocco, one of the Arab customs which made for Moroccan nationalism and renewed demands for home rule in 1952

where their consuls had jurisdiction.

The building of air bases for the U.S. went on at Nouasseur (near Casablanca), at Boulhaut, at Sidi Slimane and at Beniguérir. The four-year plan, of which France was to pay half the cost, envisaged considerable undertakings: the development of mineral and food resources and of housing as well as health and educational projects. The overdevelopment of the oil and preserved-food industries was followed by a slowing down of investments. Tourist traffic brought the country 16,000,000,000 fr. (including 13,000,000,000 fr. from French visitors). The harvest was good, and it was possible to increase the budget without further taxation, as surplus revenue alone was enough. (See also UNITED NATIONS.)

Education.—(1951) Pupils 250,000 (including 75,000 Europeans).

Finance and Banking.—Note circulation 41,000,000 fr. Bank deposits 90,000,000 fr. Monetary unit: Moroccan franc=metropolitan franc=.2857 U.S. (1952).

Foreign Trade.—(1951) Imports 159,000,000,000 fr. (including 101,000,000,000 fr. from the French union and 13,000,000,000 fr. from the U.S.); exports 86,000,000,000 fr. (including 45,000,000,000 fr. to the French union and 12,000,000,000 fr. to Great Britain), mainly phosphates (16,877,000,000 fr.), cereals (10,800,000,000 fr.), preserved fish (7,500,000,000 fr.), manganese (3,900,000,000 fr.), citrus fruits (3,600,000,000 fr.), lead (2,800,000,000 fr.).

Transport and Communications.—(1951) Motor vehicles 63,500. Cargo handled (port of Casablanca) 7,800,000 metric tons.

Industry.—Products (metric tons, 1951): phosphates 4,200,000; iron 1,500,000; manganese 333,000; lead 81,000; coal 393,000; gasoline 75,000; cement 376,000; fish 83,000. Electricity: 600,000,000 kw.hr. (HU. DE.)

Morocco, Spanish: see SPANISH COLONIAL EMPIRE.

Morphine: see CHEMISTRY.

Mortgages, Farm: see FARM CREDIT ADMINISTRATION;

FARMERS HOME ADMINISTRATION.

Mortgages, Home: see BANKING; HOUSING.

Moscow. Capital of the Union of Soviet Socialist Republics and of the Russian Soviet Federated Socialist Republic, Moscow was in 1952 probably the third largest city of the world. Area (1939): 110.1 sq.mi. Pop.: (1939 census) 4,137,018; (1950 est.) 7,000,000.

Among the public buildings completed during 1952 were the Moscow State university in the Lenin hills, with accommodation for 6,000 students; 27 schools of standard pattern, each planned

for 880 pupils; and the Sovietskaya hotel, whose first guests were delegates to the Economic conference in April. A 32-story block of 700 family flats overlooking the Moskva river was the biggest to be completed during the year. Even so, building failed to keep pace with the demand for homes, and Moscow newspapers were outspokenly critical of out-of-date building methods. Four new stations on the Metro, Moscow's underground railway, brought the total length to 35 mi. and the number of stations to 39.

A long-term program for beautifying the city provided for the planting during 1952 of about 250,000 trees and 1,500,000 shrubs: the effect was most notable in the gardens of the new state university and the new schools, at the Stalin Motor works, the Kirov Dynamo works and the Byelorussia railway station.

The U.S. embassy moved from the building in Mokhovaya street, which had been its home since diplomatic relations were established in 1933, on the expiration of the lease on Dec. 31. New travel restrictions imposed on foreigners during the year affected chiefly the staff of diplomatic missions, and reduced the radius of unsupervised travel from Moscow from approximately 30 mi. to 25 mi. (C. Ry.)

Mossadegh, Mohammed (1880–), Iranian statesman, was born at Tehran, the son of Mirza Hedayat, for 30 years minister of finance. He served his apprenticeship as financial agent in the province of Khurasan. He soon opposed Mohammed Ali, the last shah of the Kajar dynasty, had to leave the country and studied in Paris and later at the University of Neuchâtel, Switz. After his return to Persia he was for a short period minister of justice (1920), of finance (1921) and of foreign affairs (1922), but was not popular with Persian officialdom because he insisted on cutting salaries and dismissing useless officeholders. During 1923–27 he was member of the *majlis* for Tehran, but had to retire from public life because of his opposition to Riza Khan Pahlavi who in Dec. 1925 was proclaimed new shah of Iran, with right of succession to his heirs. Mossadegh returned to politics in 1944, was elected to the *majlis* and put through a bill forbidding the government to grant an oil concession to anyone without legislative permission. As leader of the small National Front party (with 8 seats out of 136) he succeeded in persuading the

majlis to reject on Nov. 26, 1950, the supplementary oil agreement signed by the government with the Anglo-Iranian Oil company. On March 15, 1951, mainly under his pressure, the *majlis* passed the Oil Nationalization act. On April 28 Mossadegh was elected prime minister with the purpose of enforcing the act. On Oct. 8 he arrived in New York city to present Iran's case before the U.N. Security council. On Oct. 23 he visited Pres. Harry S. Truman in Washington and remained for a week in the U.S. capital. On June 9, 1952, he personally asked the International Court of Justice at The Hague to declare the A.I.O.C. dispute outside its jurisdiction. He resigned on July 16 but returned to power six days later. (See also IRAN.)

Motels: see TOURIST TRAVEL.

Motion Pictures. The U.S. motion-picture industry continued during 1952 to recover from the adverse effects of television, and gross box-office receipts for the year were estimated at \$1,225,000,000 as compared with \$1,166,000,000 in 1951. At least three factors contributed to the industry's revival: record foreign income, continued growth of the outdoor drive-in theatre and a greater variety and somewhat improved quality of pictures released by Hollywood.

Major producers estimated that foreign income for 1952 would exceed \$165,000,000, an increase over the previous high record of \$160,000,000 set in 1951. Canada alone accounted for almost \$100,000,000 of the 1952 gross receipts.

By June 1952 the drive-in theatres had increased in number from 820 in 1948 to 3,483 (including Canada). These new outdoor theatres had more than offset the closing of 1,500 mostly obsolete "indoor" theatres during the period 1948-52 and by the end of that period were accounting for approximately 20% of gross motion-picture theatre receipts in the United States and Canada. One of the leading reasons for the popularity of the drive-ins was their solution of the "baby-sitting" problem for parents. In June 1952, nevertheless, there were still 15,950 permanent motion-picture theatres operating in the United States.

Picture Trends.—The old-fashioned western pictures, once the staple product of the U.S. motion-picture industry, continued to decline in popularity in 1952. More topical films took their place. Once again Hollywood stressed the military services, with about 25 movies on the subject. Biographical films were also produced in quantity, with 30 either released or in production at the end of the year; of these, 12 were in the musical category. Historical events were dramatized in a number of pictures, such as the voyage of the "Mayflower" (*Plymouth Adventure*) and the German siege of Tobruk in World War II (*Desert Rats*). The story of a U.S. weather mission to the Gobi desert in Outer Mongolia during the early years of World War II was effectively told in *Destination Gobi*.

Improved summer business in 1952 resulted from the generally better quality of films released during the summer months. Of the 78 features released during June, July and August, 20 were considered "hits." The three top-grossing pictures of the summer period were Cecil B. De Mille's circus picture, *The Greatest Show on Earth*, the Dean Martin and Jerry Lewis comedy, *Jumping Jacks*, and the English *Tales of Hoffmann*, a Technicolor adaptation of Jacques Offenbach's opera. Together these three pictures did about 20% better at the box office than did the three top films of the 1951 summer season—*Show Boat*, *That's My Boy* (also a Martin-Lewis comedy) and *Alice in Wonderland*.

Samuel Goldwyn released his \$4,000,000 Technicolor *Hans Christian Andersen*, starring Danny Kaye, in Nov. 1952; it broke a 16-year gross-receipts record at the Criterion theatre in

New York city during its first week of showing.

Cinerama, the new three-dimensional motion picture, made its successful debut in New York city Sept. 30, 1952. A Technicolor film entitled *This Is Cinerama*, it was projected on a curved screen 65 ft. wide and consisted of a series of short subjects, including a frighteningly realistic ride on a roller coaster and a scene from the opera *Aida* staged at La Scala in Milan, It. Another three-dimensional process, known as Natural Vision, made its first appearance in *Bwana Devil* at Los Angeles, Calif., in December. By the end of 1952 there were 19 U.S. companies working on three-dimensional processes, some (like Cinerama) not requiring the audience to wear special polaroid glasses.

Italian Film Festival.—Italian film producers gained the national motion-picture spotlight in Oct. 1952 when the Salute to Italian Films week was held in New York city. This festival, first of its kind in the United States, pointed up the growing market for European films in the western hemisphere. Seven outstanding Italian films produced since the end of World War II were previewed at the festival.

Stars of Tomorrow.—Marilyn Monroe won first place in the *Motion Picture Herald's* 12th annual "stars of tomorrow" poll of U.S. motion-picture theatre owners. Others named in order were Debbie Reynolds, Marge and Gower Champion, Mitzi Gaynor, Kim Hunter, Rock Hudson, Audie Murphy, David Wayne, Forrest Tucker and Danny Thomas.

Legal Actions.—The U.S. supreme court ruled 9 to 0 in May 1952 that U.S. cities and states cannot censor or bar motion pictures on the grounds that they are sacrilegious (the picture in question was the Italian film *The Miracle*, which had been banned in New York state). The supreme court held that motion pictures come under the freedom-of-speech provisions of the U.S. constitution.

The U.S. department of justice announced later during the year that it would bring action against major film producers to force them to release 16-mm. prints of superior movies to television companies and advertisers.

Statistics.—The U.S. department of commerce reported that there were 14,900 companies in the motion-picture industry of the U.S. at the end of the first quarter of 1952—unchanged since Sept. 1951. There were 647 theatre circuits, each with four or more theatres, operating 51% of the total number of theatres, with 64.1% of the total number of seats. Approximately 6,795 companies or individuals operated the remaining 49% of the theatres with 35.9% of the seating capacity. Gross refreshment sales in both indoor and outdoor theatres were estimated at \$400,000,000 annually in 1952 (an average of 6 cents per patron for indoor theatres and 20 cents for outdoor). The average price of admission, including taxes, was estimated at 47 cents in 1952 compared with 44 cents in 1948.

Production investment of all types in 1951 was estimated at more than \$500,000,000, and the average cost of production was about \$900,000. Corporate sales of the industry in that year amounted to \$1,813,000,000. Federal tax collections for the fiscal year ending June 30, 1952, totalled \$328,610,530, compared with \$346,491,715 for the preceding fiscal year.

Academy Awards.—The Academy of Motion Pictures Arts and Sciences announced in March 1952 the following awards for 1951:

BEST PICTURE.—*An American in Paris*, MGM, produced by Arthur Freed.

BEST PERFORMANCES.—Actor: Humphrey Bogart in *The African Queen*, Horizon Enterprises, Inc., United Artists. Actress: Vivien Leigh in *A Streetcar Named Desire*, Charles K. Feldman Group Productions, Warner Brothers. Supporting actor: Karl Malden in *A Streetcar Named Desire*, Charles K. Feldman Group Productions, Warner Brothers. Supporting actress: Kim Hunter in *A Streetcar Named Desire*, Charles K. Feldman Group Productions, Warner Brothers.

BEST DIRECTION.—George Stevens, *A Place in the Sun*, Paramount.

BEST WRITING.—Story: Paul Dehn and James Bernard, *Seven Days to*

Voon, Boulting Brothers, Mayer-Kingsley, Distinguished Films (British). Screenplay: Michael Wilson and Harry Brown, *A Place in the Sun*, Paramount. Story and screenplay: Alan Jay Lerner, *An American in Paris*, MGM.

BEST ART DIRECTION.—Black and white: Richard Day, *A Streetcar Named Desire*, Warner Brothers. Colour: Cedric Gibbons and Preston Ames, *An American in Paris*, MGM.

BEST CINEMATOGRAPHY.—Black and white: William C. Mellor, *A Place in the Sun*, Paramount. Colour: Alfred Gilks, *An American in Paris*, ballet photographed by John Alton.

BEST COSTUME DESIGNS.—Black and white: Edith Head, *A Place in the Sun*, Paramount. Colour: Orry Kelly, Walter Plunkett and Irene Sharaff, *An American in Paris*, MGM.

BEST FILM EDITING.—William Hornbeck, *A Place in the Sun*, Paramount.

BEST SOUND.—Douglas Shearer, sound director, *The Great Caruso*, MGM.

BEST MUSICAL ACHIEVEMENT.—Scoring of a musical: *An American in Paris*, MGM, by Saul Chaplin and Johnny Green. Dramatic or comedy film score: *A Place in the Sun*, Paramount, by Franz Waxman. Song: "In the Cool Cool Cool of the Evening," from *Here Comes the Groom*, Paramount, music by Hoagy Carmichael, lyrics by Johnny Mercer.

BEST SHORT SUBJECTS.—Cartoon: *Two Mouseketeers*, MGM, Fred Quimby, producer. One-reel: *World of Kids*, Warner Brothers, Robert Youngson, producer. Two-reel: *Nature's Half Acre*, Walt Disney Production, RKO Pictures.

BEST DOCUMENTARIES.—Short subjects: *Benjy*, made by Fred Zinnemann with the co-operation of Paramount for the Los Angeles Orthopedic hospital. Feature: *Kon-Tiki*, Artfilm Production, RKO Pictures (Norwegian), Olle Nordemar, producer, film presented by Sol Lesser.

SPECIAL AWARDS.—Irving G. Thalberg memorial award, to Arthur Freed. Best foreign film: *Rashomon* (Japanese), RKO Pictures. George Pal for extraordinary special effects in his film, *When Worlds Collide*. Gene Kelly for his ability to put choreography on film. (S. L.R.; X.)

Educational Motion Pictures.—The increasing use of motion-picture film for purposes other than entertainment was keeping pace during 1952 with the mounting totals of 16-mm. sound projection equipment sales to the specific fields in which these films were used.

Leading all these fields, both as a user of 16-mm. equipment and as a purchaser of original film production, was U.S. business. Equipment manufacturers reported that more than half of their professional sales were to business and industry sources; 143 producers of business-sponsored films reported gross production sales of \$45,000,000 in 1952. These figures reflect only the domestic, civilian usage of films for communication; military procurement of training films and projection equipment continued through 1952 to be one of the major factors within the production and manufacturing segments of the industry.

One measure of the value placed on such audio-visual tools by the U.S. military establishment was revealed by Maj. Gen. George I. Back, chief signal officer of the army, who said, in addressing the Society of Motion Picture and Television Engineers in October, that "70,000,000 man hours of training are accomplished annually (in the army) through the use of training films." About 80% of the navy's film requirements were being met in 1952 by civilian film producers under contract.

By the last quarter of 1952, nearly all the secondary schools in the U.S. had at least one 16-mm. sound projector in each school building; the large and medium-sized urban school systems reported large numbers of 16-mm. sound projectors in their elementary schools. Rural schools, moving toward consolidation, were also becoming a potential classroom film market.

Church and parochial projector ownership, spurred by the activities of co-operative film production by interdenominational groups such as the Protestant Film commission, by denominational sponsorship and by the growth of professional groups such as the Visual Education Fellowship in the National Council of Churches and the Religious Film association, was fast becoming a major user of nontheatrical motion pictures. Protestant church projection equipment was estimated to exceed 50,000 machines during the year.

The formation during the year of the Catholic Audio-Visual association, which held its first annual meeting in Chicago, Ill., in August, gave evidence of the increasing parochial use of films. Widespread interest in basic moral concepts presented in films was aroused by the film contributions of the Christophers, founded by a Maryknoll priest, Jesuit Father James Keller,



MEL FERRER (left) and Stewart Granger in a flamboyant dueling scene from *Scaramouche*, a 1952 production in Technicolor

and by the tolerance films of the Anti-Defamation league of the B'nai B'rith. The league's *The Challenge* and *The High Wall* were accorded high honours in various film festivals. Within a few months of its completion, more than 1,000 prints of the Christophers' *Government Is Your Business* were used by community organizations, industrial firms and church groups of all denominations, particularly in the period leading up to the presidential election.

Twenty-three producing companies were listed as classroom motion-picture and filmstrip producers, though many of these companies also produced films for community and industrial uses. A conservative estimate of their gross sales of 16-mm. prints to schools and organizations approximated \$6,000,000 for the year. Leading companies, from the standpoint of film production budget and sales, were Coronet Films, Encyclopaedia Britannica Films (also the oldest), the Text-Film division of McGraw-Hill, Young America Films and United World. Foreign film information programs, sponsored in the U.S. by such bureaus as the British Information services, the National Film Board of Canada and Films of the Nations accounted for another large share of the 16-mm. films going to schools and community groups.

Though business, schools and churches were the largest "vertical" markets for film production and print purchases, several other fields were active users of films. The Committee on Medical Motion Pictures of the American Medical association maintained liaison with all professional groups interested in medical films, and reported large concentrations of 16-mm. equipment in U.S. hospitals and medical schools. The production of medical films for professional use was aided by grants and contracts from foundations, medical societies and pharmaceutical companies.

Specialized film application was taking place in such diverse fields as industrial research, motion and time study, management engineering, document reproduction and specialized training. U.S. pre-eminence in these fields was reflected by the constant flow of original films to other countries where translated versions were being used. Agricultural methods, preserved on numerous department of agriculture and privately sponsored films, was another U.S. contribution to overseas technical information programs. Audio-visual consultants were sent on loan

to nearly all the Marshall plan countries.

The value of educational motion pictures to the lay public was shown in 1952 by the American Cancer society's series on cancer. *Breast Self-Examination*, a film for women's groups, was exhibited to thousands of audiences during the year under business, professional and community sponsorship.

Traffic safety education was another major area of film production and widespread showing. Productions such as *Drug Addiction*, sponsored by the Wieboldt foundation, and *Alcoholism* made major contributions to public education. These two films typified Encyclopaedia Britannica Films' broader involvement in the field of adult education.

Business and labour groups were large contributors to the film lists of the year and some of these were in the common area of labour-management relations. Approximately 1,600 firms were listed during the year as providing film programs for employees during noon-hour and between-shift periods.

The largest national distributor of sponsored motion-picture programs reported a 47.3% increase in advance booking requests for nearly all of the 117 motion pictures in its promotional lists.

Professional organizations active in the 16-mm. field included the National Audio-Visual association, the Educational Film Library association, the Industrial Audio-Visual association, Biological Film Producers, University Film Producers, Film Producers Association of New York City, and the Film Council of America. (O. H. C.)

Technical Developments.—*Theatre Television.*—The first transcontinental theatre televising in history occurred on Sept. 23, 1952, when the Jersey Joe Walcott-Rocky Marciano heavyweight title boxing match was fed exclusively to 50 theatres in 30 cities in the United States. The event took place in Philadelphia, Pa., and was seen in theatres from New York to California. Technically the results were very satisfactory, although momentary interruptions occurred in some instances.

Eidophor.—Eidophor, a new, large-screen, theatre colour television system, received its first public demonstration in June by 20th Century-Fox. The demonstration consisted of a live pickup from a stage a few blocks from the theatre, transmitted by closed circuit to the Eidophor projector located in a standard theatre booth. The Eidophor receives a black-and-white or colour television signal which is employed to modulate the light from an arc-lamp projector, resulting in relatively high levels of illumination on the theatre screen. For colour, the system employs rotating filters similar to the Columbia Broadcasting system colour television system.

Cinerama.—Cinerama, which opened its first commercial showing in New York city in October, presented an image three times as wide as the ordinary picture and half again as high. In photography, three special cameras are used, each simultaneously photographing one-third of the total picture. In projection, three projectors are employed, each of which projects the picture photographed by its camera. The first release featured outdoor sequences, but the process had not yet been tried for a dramatic picture.

Cinerama gives a three-dimensional illusion and a feeling of actual participation in the action on the screen. However, it presented problems both in production and exhibition, particularly in the requirement for three special projection booths and the fact that only specially shaped auditoriums could be used.

"Natural Vision."—The first feature-length third-dimensional motion picture was released in November in Los Angeles, Calif. While stereoscopic short subjects and training films had previously been made, this was the first full-length—approximately 9,000 ft.—motion picture of an entertainment nature to be re-

leased. The picture, made by Arch Oboler Productions with Natural Vision corporation's equipment and technical supervision, used the polaroid method of projection and viewing. This method photographs two pictures simultaneously, or nearly so, in such a manner as to correspond to the two views of the same scene that would be seen by the two eyes of an observer were he in the camera's position. These two pictures, called stereoscopic pairs, must then be projected so that the right-eye picture is seen only by the right eye, and the left-eye picture is seen only by the left eye. The separation of pictures is obtained by projecting through polaroid filters onto an aluminized screen and is viewed through eyeglasses which also contain polaroid filters.

The Natural Vision corporation actually employed no new principles, but had designed and developed a convenient mount for two standard motion-picture cameras so that focus and convergence could be controlled conveniently and simply.

Vistascope.—A new device for producing composite motion pictures, which was developed in France and brought to the United States, had been perfected to a point where it was ready for production use in motion pictures and television. The Vistascope is a boxlike device placed between the camera and the action so that the camera can photograph the action seen in conjunction with a superimposed foreground or background setting. This setting is usually in the form of a still photograph with cutout areas in those portions which are to be occupied by the action. The Vistascope possesses the advantage common to other methods of composite photography in being capable of bringing distant locations into the studio, thus making it unnecessary for the cast to be photographed in the actual location.

Background Process Screens.—The Motion Picture Research council, after two years' collaboration with Roy Stewart and Sons, developed the first mechanical method of process screen fabrication. Previously these screens were produced by hand-spraying methods where quality and reproducibility were dependent upon the skill of the operator. A background process screen is translucent, with the picture being projected on the screen from the opposite side to which it is viewed or photographed. It is used to combine projected backgrounds, from either still or motion pictures, with action which takes place in front of the screen. The camera photographs the background and the action simultaneously on one negative.

The background process screen method differs from the Vistascope in that the action can take place or move about as long as it stays within the camera's view, while in Vistascope the action cannot move across the cutout areas in the photograph.

(W. F. Kv.)

Canada.—After confirming reports that a site had been purchased in Ville St. Laurent on the outskirts of Montreal for a new building to house the National Film board, the federal resources department minister, R. H. Winters, announced that a committee of parliament would consider the annual report of the board. However, by October no formal statement had been made by the committee upon the board's activities, though during the parliamentary debate setting up the committee there was general recognition that the board had made progress since it had been reorganized in 1950.

In April the Canadian film awards for films of 1951 were made public. Of the more than 50 films entered, the results were: best documentary short, *Newfoundland Scene* by Crawley Films, Ottawa, with honourable mentions to the National Film board's *The Longhouse People* and *Les Moines de St. Benoit du Lac*; theatrical features, *Royal Journey* by the National Film board, with honourable mention to the board's *Le Petite Aurore*; theatrical shorts, *Opera School* by the National Film board,

with honourable mention to *Fruitful Earth* by Associated Screen
Jews of Montreal; government-sponsored documentary short,
Milk Made by the National Film board, with honourable men-
tion to *Ski à Québec* by Laval university; nongovernment-spon-
sored documentary short, *Packaged Power* by Crawley Films.

Figures released in Oct. 1952 by the federal bureau of sta-
tics revealed that in 1951 Canadians spent \$96,319,583 in
1952, 159,125 paid admissions to the movies; in 1950, \$86,713,357
or 242,396,679 admissions. (C. Cy.)

In Canada, film production during 1951-52 amounted to 213
subjects, and the nontheatrical audience was nearly 11,500,000.
Most of the films were for specialized educational use.

European Film Festivals.—In 1952, as in previous years, a
number of film festivals were organized; the chief in western
Europe were at Cannes, Fr., Berlin, Ger., Venice, It., and
Edinburgh, Scot. The Communist countries held their festival
at Karlovy Vary, Czech., where the soviet film *The Unfor-
gettable Year 1919* won the Grand Prix. At Cannes the main
awards went to Renato Castellani for *Due Soldi di Speranza*
and to Orson Welles for *Othello*; both shared the Grand Prix.
At Venice the premier award went to René Clément for *Jeux
interdits*. Berlin and Edinburgh were both organized as non-
competitive festivals.

Great Britain.—The three groups originated by the National
Film Finance corporation (British Film Makers Ltd. at Pine-
wood, the Elstree group and the pioneer Group Three), together
with London Films and Ealing studios, accounted for most of
the first feature product on which the general reputation of
British films was based.

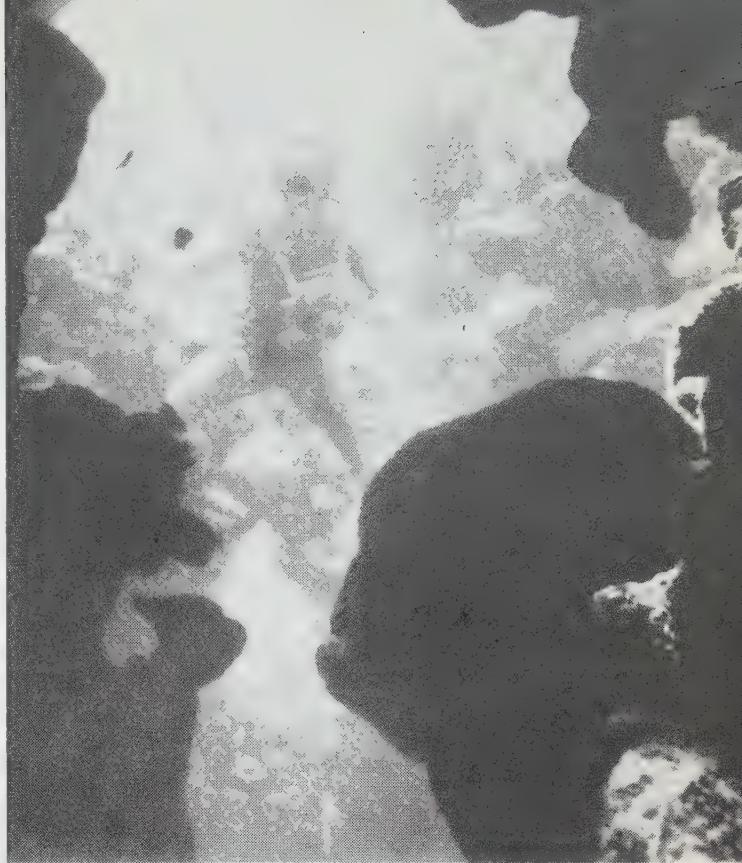
The British Film Production fund (also known as the Eady
fund) operated well, although it was subjected to considerable
criticism by the exhibitors through whom the money for it was
collected. Producers received approximately 40% of the box-
office returns on their films in the form of a quarterly bonus,
the sum varying in proportion to the number of applicants
drawing on the fund. Without a scheme equivalent to the Eady
plan, the average British film could only be expected to regain
33% of its cost at the British box office; with the plan there
was hope that producers could retrieve 106%, and eventually
even 115%.

British documentary work during 1952 received a severe blow
when the government announced that the Crown Film unit and
the Mobile Film Exhibition units initiated during World War II
and later maintained by the Central Office of Information would
be disbanded at the end of March.

Little progress was made in the problems affecting the film
industry and television. The British Broadcasting corporation
maintained its own production unit for newsreels, special docu-
mentaries for television screening and film inserts for use in
various otherwise "live" programs. The Telekinema was re-
named the National Film theatre and reopened by the British
film institute in the autumn to show specialized programs to
the institute's members and to the public.

The chief British feature film productions of the year in-
cluded *The Sound Barrier* (David Lean), *The Importance of
Being Earnest* (Anthony Asquith), *Cry the Beloved Country*
(Zoltan Korda), *Angels One-Five* (George More O'Ferrall), *I
Believe in You* (Michael Relph and Basil Dearden), *Mandy*
(Alexander MacKendrick), *Murder in the Cathedral* (George
Hoellering and T. S. Eliot), *Outcast of the Islands* (Carol
Reed) and *Secret People* (Thorold Dickinson).

Commonwealth.—The output of the Indian film industry
had become since World War II second only to that of Holly-
wood. Production was by about 400 individual companies, work-
ing in 67 studios, centred mostly in Bombay, Madras and Cal-
cutta. The average annual output of feature films had been 250.



HANS HASS, camera in hand, studying a rare coral formation 100 ft. below
the surface of the Red sea off Port Sudan. A cinematic record of the sights
and sounds of submarine life, titled *Under the Red Sea*, was released in
1952, filmed by an expedition led by Hass

The main countries which imported Indian films were Pakistan
(chief importer), Burma, Ceylon and Malaya. Few Indian films
had been shown as yet in the theatres of Europe and America,
though Chetan Anand's film *Neecha Nagar* won the Grand Prix
at the Cannes festival in 1946 and Uday Shankar's *Kalpana* was
widely appreciated for its presentation of Indian dancing. *Aan*,
India's first colour film, was shown in London in 1952. An in-
ternational noncompetitive festival of films was held in India
early in 1952: it was organized first in Bombay and afterward
in Madras, Delhi and Calcutta. Twenty-three countries, includ-
ing the U.S.S.R., submitted films.

France.—Production in France, as in Great Britain, contin-
ued in 1952 to depend on the amount of screen space French
films could command in their own country in the face of foreign
competition, particularly from the U.S. During 1950-51, 23
Franco-Italian co-productions were made. Co-production was
authorized officially by the French Centre National de la Ciné-
matographie and the Italian Direzione dello Spettacolo. These
co-productions enjoyed unrestricted entry to the markets of
both countries and in certain cases had quota privilege. An ex-
ample of co-production with Great Britain was the full-length
cartoon by the company known as les Gêmeaux: *La Bergère
et le Ramoneur*.

Jean Renoir, whose *The River* was an Anglo-U.S. production
made in India, continued to work outside France, whereas Max
Ophüls, the distinguished Austrian film maker, had recently
joined the French studios. French films had once more become
consistent award winners at the more important international
festivals, and although the finer French productions presented
dark and morbid themes, sensitivity in the handling of difficult
social and psychological situations had become characteristic of
the outstanding newer directors such as Robert Bresson, René
Clément and André Cayatte.

Important films made during 1952 included *Nous sommes*



CHARLIE CHAPLIN directing Melissa Hayden in a ballet sequence during the filming of *Limelight*, a 1952 opening. André Eglevsky stood by, watching Chaplin execute a pirouette

Tous des Assassins (Cayatte), *La Jeune Folle* (Yves Allégret), *Casque d'Or* (Jacques Becker), *Jeux Interdits* (Clément), *La Bergère et Le Ramoneur* (les Gémeaux) and *Les Belles de Nuit* (René Clair).

Germany and Austria.—The greater part of the 350 films produced in western Germany during 1945–52 (82 during 1951) were conventional dramas, comedies and musicals, and very few of them earned international acclaim. Producers continued to complain of the heavy taxation placed on the industry.

Austrian films were also forced to concentrate on conventional subjects, and became wholly dependent on export to meet production costs. Production of feature films reached 28 in 1951. More recent titles included *Eroica* (about Beethoven), *Vagabonds* and *She-Devil* (both based on plays) and *Under the Red Sea*, a feature-length documentary by Hans Haas about an underwater expedition. The veteran Austrian film maker G. W. Pabst was occupied during 1952 in making *The Voice of Silence* in Italy. There was also in Austria a considerable production of documentary, instructional and advertising films.

Italy.—The development of the Italian film industry had been a most striking post-World War II feature. The policy of the industry, operating under the official guidance of the Direzione dello Spettacolo, was to consolidate a world market with the aid of expert publicity handled by Unitalia, the organization representing the various production interests. Unitalia initiated during 1952 a series of Italian film weeks in a number of places, including London, New York and Madrid. Production figures for 1951 showed 98 Italian feature films completed. A coproduction agreement between Germany and Italy was completed in 1952, while the United States continued to produce films in Italy following *Quo Vadis?* which was first shown in Britain in 1952. The production of short films for 1951 numbered 306.

During 1951 the number of film theatres operating in Italy was 8,625, with a weekly average attendance of more than 13,000,000; a rise of both these figures was expected for 1952.

Notable productions in 1952 included *Umberto D* (Vittorio de Sica), *Olden Times* (Alessandro Blasetti), *The Girls of the Piazza di Spagna* (Luciano Emmer), *Europa '51* (Roberto Rossellini), *The White Sheik* (Federico Fellini), *Wife for a Night* (Mario Camerini), *Due Soldi di Speranza* (Renato Castellani), *Bellissima* (Luchino Visconti) and *Il Cappotto* (Alberto Lattuada). Outstanding among documentary films was *Leonardo da Vinci*, made by Luciano Emmer and based on Leonardo's drawings.

U.S.S.R. and Eastern Europe.—The chief soviet productions released in 1952 were *The Unforgettable Year 1919* (directed by M. Chiaureli), *Country Doctor* (S. Gerasimov) and, in the series of biographical films in which soviet directors had specialized during recent years, *Przhevalski* (the career of the 19th-century Russian explorer, directed by S. Yutkevich) and *Taras Shevchenko* (the Ukrainian poet and national hero). V. I. Pudovkin's contribution to soviet motion pictures was *Harvest*, about rural socialization, and G. V. Alexandrov made a film about the Russian composer, M. I. Glinka. Other films were *Cavalier of the Golden Star* (Y. Y. Raizman) and *Donets Miners* (L. D. Lukov). Many scientific and documentary films were awarded Stalin prizes and work in cartoon films was widely developed, chiefly for child audiences. Almost all soviet films were made in colour.

The main centre of the Polish film industry was at Lodz, where, in addition to studios, a training establishment for film makers had been set up with a five-year course of study. Outstanding productions were *The Young Chopin*, directed by Alexander Ford, *The Crew* (Jan Fetke), about sea cadets, and *First Days* (Jan Rybkowski), which dealt with the postwar reconstruction of a steel mill.

The Hungarian film industry, nationalized in 1948, also concentrated on social subjects, *Strange Marriage*, a colour film satirizing the hierarchy of the Roman Catholic Church; and a film of historical reconstruction, *Madame Dery*, dealing with the movement for liberation from the Austrian regime. Production in Bulgaria had also been nationalized in 1948 and similar social subjects were presented in *Alarm*, *Danka* (the struggle of the textile workers under capitalism) and *Dawn over the Land* (about the Bulgarian Communist youth movement). Rumania began to develop film making with productions like *Life Triumphant*, about the socialization of the scientists, and *Mitrea Cocor*, about a Rumanian peasant who deserted the fascist army to join the Communists.

In eastern Germany production was centred on the Deutsche Filmgesellschaft (D.E.F.A.) studios in Berlin, where Wolfgang Staudte made *The Subject*, based on Heinrich Mann's novel. A recent biographical film was *Wilhelm Pieck. Women's Lives* (directed by Slatan Dudow) dealt with the problems of women in contemporary Germany. Criticism of Allied administration in the west was the subject of *The Condemned Village*, the story of a German village evacuated to make a U.S. military air base; and *Shadow over the Islands*, the story of a doctor's fight for the health of the people in the Faroe Islands.

Yugoslavia.—During 1952 Yugoslavia continued to develop its technical resources and to train film technicians during the actual process of production. Among films released was Vjekoslav Afric's third film, *Hoja Lero*, a fantasy set in an imaginary land of the 7th century. A Slovene folk tale was made into the film *Kekac. The Chronicles of Visoko* was derived from a historical novel by the Slovene writer Ivan Tavcar and directed by Bojan Stupica; its action took place during the Reformation in Slovenia. (See also LAW.) (R. MAN.)

Motor-Boat Racing. In early summer of 1952 it was announced that the holder of the record for the fastest mile ever travelled in an auto, John Cobb of London, Eng., was constructing a jet-powered boat with which he hoped to boost the 160.3235 m.p.h. water speed record held by Stanley Sayres' "Slo-Mo-Shun IV" of Seattle, Wash. Cobb's task was made no easier when, on July 7, Sayres drove his Allison-powered record-holder to a new mark of 178.497 m.p.h.

After weeks of preliminary trials on Scotland's Loch Ness, Cobb decided to make his bid on the morning of Sept. 29. His first run over the mile turned out to be the fastest, by far, that man had ever travelled on water, as timers caught him at 206.89 m.p.h. But his boat "Crusader" never made the return run required by the rules. While roaring past the finish of the mile, it suddenly overturned in a great cloud of spray, and Cobb was killed.

The Gold cup race at Seattle, Wash., on Aug. 9, found defending champion Stanley Sayres pitting his "Slo-Mo-Shun IV" and "Slo-Mo-Shun V" against a field of four challengers. When mechanical mishaps prevented any of the six boats from finishing the full 90 mi. of the race, it was "Slo-Mo-Shun IV," driven by Stanley Dollar, Jr., which won the contest on points. Charles F. Thompson of Detroit, Mich., set a new 30-mi. record of 101.024 m.p.h. when he captured the first heat, driving "Miss Pepsi," the twin-engined craft owned by Roy and Walter Dossin, also of Detroit.

Winners of other American inboard racing classics were: Ford memorial (Detroit), "Miss Pepsi"; National sweepstakes (Red Bank, N.J.), "You All," owned and driven by Bob Rowland, Norfolk, Va.; President's cup (Washington, D.C.), "Miss Pepsi"; Silver cup (Detroit), "Gale II," owned by Joseph Schoenith, driven by Dan Foster, both of Detroit; Steel cup (Pittsburgh, Pa.), "Such Crust IV" representing the Detroit

team of owner Jack Schafer and driver Bill Cantrell.

In the outboard category Raymond Lenk of Highland Park, Mich., led 272 competitors home in the annual Winnebago land race which covers 92 mi. of Wisconsin's lakes and rivers. In the Albany-New York outboard marathon, down 130 mi. of the Hudson river, R. L. Switzer of McHenry, Ill., showed the way.

(W. M. CR.)

Motor Transportation. Motor transportation continued to play an increasingly large role in the lives of United States citizens during 1952. Ownership and operation of all types of highway transport—passenger cars, trucks and buses—reached new highs during the year. Total registrations by the end of the year were estimated to be in excess of 53,363,000 units, or 3% above the previous record mark established in 1951.

In the seven years since the end of World War II, 22,000,000 vehicles had been added to the nation's total motor fleet. Passenger cars accounted for nearly 44,000,000 units of the total, trucks for more than 9,000,000 and buses 235,000.

Production of new motor vehicles in 1952, however, showed a decline, as the nation's mobilization program required more and more of the supply of critical materials. Estimated production for the year totalled 5,500,000 units, or approximately 1,200,000 units below the 1951 output and more than 30% below the industry's peak output of 8,003,056 new cars, trucks and buses in 1950. Despite the sharp decline, 1952 output represented the fourth highest annual output in the industry's history.

Included in the year's production totals were 4,350,000 passenger cars and 1,150,000 trucks and buses. Approximately 200,000 units of the automobile output and 165,000 truck units were allocated by the industry to export markets. This represented a 23% decline from export shipments in 1951.

Wholesale value of 1952 motor vehicle production dropped 8% below 1951 to \$9,000,000,000. Replacement parts output, however, remained fairly constant with that of the preceding year, with wholesale value of such items estimated at \$2,500,000,000. (See AUTOMOBILE INDUSTRY.)

Total motor vehicle mileage in 1952 exceeded for the first time the 500,000,000,000-mi. mark. In rolling up this figure, U.S. motorists used more gasoline than they ever had before in a single year. As travel and congestion on the nation's highways and streets increased, so did accident and fatality totals reach new highs. More than 38,000 motorists and pedestrians were fatally injured in highway accidents in 1952. (See also ACCIDENT PREVENTION.)

A survey of automobile ownership and use revealed that nearly two-thirds of U.S. families owned an automobile. On an average winter day, about 70% of those U.S. citizens who used some form of transport to go to and from their work did so by motor cars. Passenger-car use for employment purposes was particularly heavy in the far west, where more than 90% of employed persons used some form of transport to get to work, with 81% of that total relying on passenger cars. In the east the number of persons using cars dropped to 58%.

Employment in highway transportation fields continued to grow in 1952, with the total topping 9,400,000 persons, or one out of every seven employed in the United States. Included were 900,000 persons employed in the manufacture of motor vehicles, parts and tires; 300,000 in the petroleum field; nearly 2,000,000 in sales and servicing; 330,000 in road building; 5,230,000 in trucking; 200,000 in bus transportation; 600,000 in such related fields as taxicab, insurance and finance.

Industry statisticians calculated that there were 693,000 automotive businesses in the United States, or that one out of every six business establishments in the country was automotive

in nature. These included automobile dealers, service garages, trucking firms, bus operators, tourist courts, gasoline stations, etc.

U.S. motor transportation continued to be taxed progressively higher year by year. In 1951, U.S. motorists paid a record total of \$4,700,000,000 into federal, state and local tax coffers. This was more than double the amount collected in 1941. These taxes were paid directly or indirectly by highway users. They included federal excise taxes, state gasoline taxes, registration fees, special city and county taxes on motor vehicles, and tolls.

Federal excise taxes added more than \$1,500,000,000 to the cost of automotive products during the year. State motor vehicle fees and gasoline taxes totalled nearly \$2,900,000,000, and state sales taxes on automotive products reached about \$387,000,000. Special truck taxes exceeded \$1,300,000,000. Approximately 32 cents out of the automobile sales dollar went for taxes. It was shown, for example, that taxes on a \$2,000 car delivered to a resident of Michigan totalled \$650.

The first automotive tax was a \$1 licence fee imposed by the state of New York in 1901. By 1911 all motor vehicle taxes in the U.S. totalled about \$4,000,000 annually. In 1921 the figure reached \$296,000,000; in 1931, almost \$1,000,000,000. It topped \$2,000,000,000 in 1941 and more than doubled in the next ten years. Since 1900 U.S. motorists and commercial motor vehicle operators had contributed an accumulative total of more than \$50,000,000,000 in special taxes.

With general taxes considered, as well as special automotive levies, it was estimated that at least one out of every eight tax dollars collected in the country originated from the use, manufacture and sale of motor vehicles or automotive equipment. The total was \$7,500,000,000 in 1950, latest year for which complete tax data were available.

A significant and encouraging move in the highway transportation field during 1952 was the establishment of what appeared to be a new "good roads movement" in the U.S. Representatives of 40 organizations interested in better roads met in Feb. 1952 at the invitation of the National Highway Users conference to see what could be done. P.A.R. (Project—Adequate Roads) resulted. The broad purposes of the P.A.R. program, as outlined by its founders, were to stimulate public awareness of highway needs and to unify the efforts of all groups working for good roads.

Since 1940 the number of motor vehicles registered in the country had increased about 60%, or from about 32,000,000 to more than 53,000,000. Meanwhile, total street and road mileage had grown but a small fraction of 1%; there had been only a 25% increase in surfaced rural road mileage; and annual highway expenditures actually were below the pre-World War II rate, after adjusting for higher costs.

P.A.R. listed the following as necessary elements in a sound national highway policy: (1) proper classification of roads into systems; (2) allocation of funds for adequate highway systems; (3) dedication of highway-use taxes to highway purposes; (4) fair distribution of highway costs; and (5) improved highway administration.

The program also urged that highway improvement be achieved "according to comprehensive scientific studies of needs." This would call for proper fiscal studies and the use of a sufficiency rating system for assessing the relative importance of various road needs. (See also ROADS AND HIGHWAYS.)

(H. A. Ws.)

Great Britain.—The Conservative government, elected in Oct. 1951, was pledged to return to private hands that section of the transport industry which had been acquired by the British Transport commission under the Transport act of 1947. Accordingly a white paper outlining the new government's pro-

posals was laid before parliament in May 1952.

The bill that followed the white paper appeared in July. Little in it met the criticisms of those who hoped for a broader approach to transport problems, and in the main the proposals of the white paper were reiterated and amplified. To protect the interests of the small hauler, transport units offered for sale were not in general to consist of more than 50 vehicles nor was the total unladen weight to exceed 200 tons. These limits were only to be exceeded with the approval of the minister of transport. At the other end of the scale, single vehicles could be disposed of as "transport units." Transport units thus sold were to carry with them the right to a five-year "A" licence, free of mileage restriction. Parallel to this provision the bill proposed that the 25-mi. limit applying to most of the existing "A" and "B" licence holders should be lifted when the minister was satisfied that no further sales of transport units could be made to the public. An annual levy of 13s. 6d. for each quarter of a ton unladen weight was to be made on all trucks weighing more than one ton. This levy to the total value of about £4,000,000 was to be used as part payment for the good will lost by the Transport commission with the sale of their vehicles and partly as compensation to the commission for the loss of rail traffic to the roads.

The Transport commission's accounts, published in June, showed that British road services had earned a surplus of £3,200,000 in 1951 compared with a deficit of £1,200,000 in 1950. The surplus was not significantly greater in proportion than the £1,400,000 earned in 1949 when the Road Haulage executive was much smaller and its gross receipts less than half of those in 1951. It also proved impossible for the 1951 standard of results to be maintained in 1952, and in October the minister of transport, A. T. Lennox-Boyd, announced that the Road Haulage executive was not paying its way.

The death of the king prevented the passage of the bill in the summer session of parliament and it was postponed to the autumn session.

Statistically the proportion of the road haulage industry in public ownership contrasted sharply with the volume of public and political interest. The Road Haulage executive was operating about 40,000 vehicles in 1951. In the middle of the year 40,000 haulers holding "A" and "B" licences were operating about 120,000 vehicles and "C" licence holders had about 820,000. The last figure was increasing at the rate of about 4,500 a month. Publicly owned road transport thus accounted for little more than 4% of total capacity. (W. J. HN.)

Motor Vehicles: see ACCIDENT PREVENTION; AUTOMOBILE INDUSTRY; ELECTRIC TRANSPORTATION; FEDERAL BUREAU OF INVESTIGATION; MOTOR TRANSPORTATION.

Mozambique: see PORTUGUESE OVERSEAS TERRITORIES.

Mules: see LIVESTOCK.

Municipal Government. A summary report on 1952 federal legislation affecting cities, issued by the Washington office of the American Municipal association, indicated the constantly expanding area of local government concern which was subject to congressional activity. It was estimated that of the total of 3,847 bills introduced in the 82nd congress, 2nd session, between 300 and 400, representing about 10%, related directly to cities, exclusive of those indirectly affecting cities. Legislation reflecting substantial gains to city governments, in some instances procured through the efforts of the association, included the following: extension of federal aid highway laws, with annual sums of \$137,500,000 reserved for urban projects in fiscal 1954 and 1955; exemption of municipal charges from price control; rent control legislation;

increased provision for defense area community facilities and services and for defense housing in critical areas; provision for payments on slum clearance projects as the work progressed rather than on its completion; extension until 1954 of the period during which city employees might join the federal social security system and a guarantee of full exploration early in 1953 of the extension of the system to employees not presently eligible; continuation of federal programs relating to airport development, hospital construction and school construction in federally affected defense areas.

Congress failed to act or acted inadequately on several matters directly affecting the cities. It failed to provide for a census of governments in 1952—authorized to be taken every five years by the preceding congress, and last taken in 1942—thereby postponing the next such census to 1957. It failed to act on bills to provide payments in lieu of taxes on federally owned real estate and on bills to establish a national commission to study federal-state-local relations. The public housing program, providing originally for 135,000 dwelling units each year and limited during fiscal 1952 to 50,000 units, was further reduced for fiscal 1953 to 35,000 units. Of the \$600,000,000 requested by congress for civil defense, only \$43,000,000 was voted; states and cities spent \$183,000,000 for this purpose in 1952 according to the first annual report of the Federal Civil Defense administration, and were expected to spend approximately \$60,000,000 in 1953; city expenditures for this purpose were running higher in 1952 than in 1951. (See also CIVIL DEFENSE, U.S.)

The proposed relaxation of the ban on the use of critical materials for municipal entertainment and recreational projects, scheduled for July 1, 1952, was deferred by the National Production authority because of the steel strike until early in 1953. The restraints on municipal borrowing imposed in 1951 under the voluntary credit restraint program were terminated by the president as of March 24, 1952.

Municipal Finance.—Cities in considerable number experienced serious financial difficulties in 1952. Budgets, taxes, debts and expenditures reached record high levels. Increased urban stipulations, migration of population to the suburbs in metropolitan areas, expanded municipal services, inflationary costs, higher average salaries and wages including pension costs and extension of fringe benefits such as shorter work weeks, more paid holidays and extended sick leave and vacation allowances made municipal personnel accounted in part for the increasing financial burden.

The most promising new source of local revenue, authorized in about 28 states, was the municipal income tax. According to the June 1952 issue of *Tax Policy*, 19 cities of more than 10,000 population—7 in Pennsylvania, 7 in Ohio, 4 in Kentucky, and Washington, D.C.—had income taxes in 1952. Of these Canaan and Warren, O., and Newport and Lexington, Ky., adopted such a tax in 1952. Income taxes were also adopted in 1952 in Akron, O., and St. Louis, Mo. Four Ohio cities with less than 10,000 population likewise adopted income taxes in 1952. As of Sept. 1, 1952, according to a report by the Pennsylvania bureau of municipal affairs, 282 Pennsylvania localities—199 school districts, 72 boroughs, 9 cities and 2 first-class townships—had imposed income taxes (except on corporate income, which was fixed by the state) under Pennsylvania's act 481, the most liberal of all grants of taxing powers by a state to its localities. This tax had brought about \$100,000,000 in additional local revenues since its enactment in 1947.

New York city continued its 3% sales tax in 1952 and adopted a motor vehicle use tax along with other local levies. Mississippi extended permission to tax sales, previously limited to cities of certain population sizes, to include cities in counties bordering

on the Gulf of Mexico. Syracuse, N.Y., adopted a 2% sales tax; in Monroe county, N.Y., which includes the city of Rochester, a sales tax became effective in Jan. 1952. Other cities imposing sales taxes in 1952 included: Tuscaloosa, Ala., Meridian, Miss., and Salinas, Calif., a state where more than 150 cities had sales taxes.

Statistics on government revenues in 1951, issued by the bureau of the census in Aug. 1952, showed substantial increases over 1950 for all levels of government. Among the local units cities had the largest increase, amounting to almost \$500,000,000 or 9%. The estimated total general revenue for cities in 1951 was \$5,834,000,000, compared with \$5,341,000,000 in 1950. Of the 1951 total, taxes comprised \$3,867,000,000 (property taxes amounting to \$2,938,000,000); fiscal aid from other governments totalled \$1,088,000,000; the remainder, \$878,000,000, came from charges and miscellaneous services, which showed the greatest relative increase for this period.

An analysis by the Municipal Finance Officers association of monthly and annual data compiled by *The Bond Buyer* revealed that for the first six months of 1952 municipal bond sales attained a record high totalling \$2,515,000,000, compared with \$1,510,000,000 and \$2,070,000,000 for the same period in 1951 and 1950, respectively. The June figure alone in 1952 was \$632,000,000, the highest on record. Bond approvals for June—\$301,000,000—also exceeded any other month except that of the November elections. This large increase in bond sales totals was attributed to greatly increased sales of refunding bonds and revenue bonds rather than to increased general obligation bond issues; the total of revenue bond financing for the six-month period was \$906,000,000—more than the total of such financing for any preceding 12-month period. By the end of August, according to *The Bond Buyer*, municipal bond sales totals had reached the record high of \$2,974,000,000, almost equalling total annual sales for either 1948 or 1949, and bond approvals had risen to \$819,000,000.

Prices for municipal bonds fluctuated notably during 1952. Bond yields, according to *The Bond Buyer's* index of 20 municipal bonds, declined from 2.11% on Jan. 3 to a low of 2.03% on May 1; on Sept. 18 it stood at 2.32%, the highest since Nov. 1948. The rise was attributed in part to the heavy volume of municipal debt and in part to the higher interest yields on federal government obligations.

Personnel.—The defense program occasioned by the Korean war produced a shortage of competent public personnel in some cities, where there was a lack of candidates with the desired qualifications or a loss of employees to defense industries. The report of the census bureau on *Public Employment in April, 1952*, however, showed practically no change in the number of nonschool city employees for the period from April 1951, when the total was 1,101,000, to April 1952, when it was 1,111,000. Pay rolls, on the contrary, maintained the upward trend characteristic of the postwar years, reaching a total of \$266,000,000 for nonschool city employees by April 1952, compared with \$239,000,000 in April 1951 and \$222,200,000 in April 1950.

Home Rule; Municipal Surveys.—The new home rule charter for New Orleans, La., authorized by constitutional provision in 1950, was submitted by the local charter committee in 1952 to the city council, which could submit it to the voters with or without modification. Its chief innovation was provision for a chief administrative officer, with considerable executive authority, to be appointed by the mayor. A number of Rhode Island cities established charter commissions in 1952.

The first comprehensive reorganization of the government of Washington, D.C., expected to require about a year to complete, was under way in 1952, under a law effective July 1. It empowered the district commissioners, appointed by the president, to

establish a framework of government under which the 95 offices and agencies would be consolidated into 2 staff agencies, 12 operating agencies and several smaller offices. The commission's plan contemplated creation of a citizen's advisory council of nine members to advise the commissioners on broad policy matters.

The Chicago, Ill., city council established a "little Hoover" commission of five members, headed by the city's budget director, to study possible economies, and appropriated \$100,000 for the purpose. Governmental survey commissions in San Francisco and Los Angeles, Calif., each submitted partial survey reports in 1952. The report and recommendations of the Survey committee of Rochester, N.Y., based on an earlier comprehensive survey by private consultants, were under study by a charter commission. The final report of the Mayor's Committee on Management Survey of the City of New York was nearing completion in the fall of 1952. Many volumes of special studies were prepared during the three years of the committee's existence, not all of which, however, were as yet publicly released.

Traffic and Parking.—The individual programs of the various cities were far too numerous to enumerate, but they included in 1952: construction of an automatic elevator garage in downtown Detroit, Mich.; continuation of its extensive garage building program by Baltimore, Md., and plans for a \$1,000,000 garage in the department store area of Philadelphia, Pa.; construction of its long-planned underground garage by Los Angeles; lease of land to the parking authority of Pittsburgh, Pa., for construction of an underground garage; approval of construction of a second underground garage by the Chicago park district; a long-range \$3,000,000 plan by Kansas City, Mo., to be carried out under federal-state-city urban redevelopment laws.

Urban Redevelopment.—By July 31, 1952, two and one-half years after inception of the program, the number of participating localities had reached 250, of which 168 had gone beyond the initial step of reservation of capital grant funds into the operation of approved local programs and obtained approval of 156 advances for preliminary planning, 81 final planning advances and 19 loan and grant allocations. These program participants had reserved \$205,000,000 in capital grant funds out of \$500,000,000 available. A survey by the Housing and Home Finance agency of 32 cities which had made the most progress under the program by the end of 1951 indicated a strong trend toward reuse of the newly developed areas for residential purposes, with privately financed dwellings predominating but some public housing included. (See also HOUSING.)

Rent Control.—Federal legislation ended all federal rent controls as of Sept. 30, 1952, except in critical defense housing areas and in localities electing prior to that date through their legislative bodies or by local referendum to continue rent controls on the basis of a finding that a substantial housing shortage existed. In the absence of further federal legislation, all federal rent controls were to expire on April 30, 1953. The federal Office of Rent Stabilization announced that up to Sept. 29—the last available day—1,316 communities out of 2,400 which had controls had voted to retain them, involving at least 12,700,000 persons in about 3,900,000 rental units out of a possible 20,000,000 persons in 6,000,000 units. A total of 70% of the major cities elected to retain controls. There were in addition about 120 critical defense housing areas where controls automatically continued. Feeling pro and con ran high in a number of cities, particularly Seattle, Wash., which dropped controls, St. Louis, Mo., and Columbus, O., where they were retained, and Chicago, where a landlords' "strike" designed to take 50,000 apartments off the market was proposed by a Citizens Committee for Rent Decontrol after controls had been extended. (See RENT STABILIZATION, OFFICE OF.)

Progress in Metropolitan Areas.—One of the most striking developments in half a century in meeting the vexing problem of local intergovernmental relations in metropolitan area was the enactment by the Georgia legislature in 1951 of the so-called "plan of improvement" for adjusting city-county relations between the city of Atlanta and Fulton county, devised after decades of study, which came into full effect on Jan. 1, 1952. In general, functions of the city and county were reallocated, with the city taking over all city-type services for the county, such as fire, police, parks and sanitation, and the county taking full responsibility for health services and welfare, which it already administered; certain functions, such as schools, roads and planning continued to be performed by both. The city annexed 82 sq.mi. of fringe areas, including five heavily populated residential sections, which more than trebled its area and increased its population by about 100,000.

In Philadelphia, where a constitutional amendment authorizing city-county consolidation was approved in 1951, an advisory consolidation committee was created by the city council to study the problems involved and the appropriate means for implementing the amendment. A Pennsylvania statute provided early in 1952 for a 14-member metropolitan study commission for Allegheny county "to promote the uniform development of the 129 municipalities within Allegheny County (including Pittsburgh) and to encourage those municipalities to co-operate in meeting the problems attendant to the tremendous growth of the county in recent years." The Community Services Commission for Davidson County and the City of Nashville, Tenn., appointed by the general assembly in 1951 to survey the governmental needs of metropolitan Nashville and the county, issued an extensive report in 1952, recommending annexation of a substantial area to the city and transfer to the county of four functions—health, hospitals, schools and welfare—deemed clearly county-wide in character. (See also ELECTIONS, U.S.; TOWN AND REGIONAL PLANNING; also under individual large cities.)

(A. M. DS.; L. GU.)

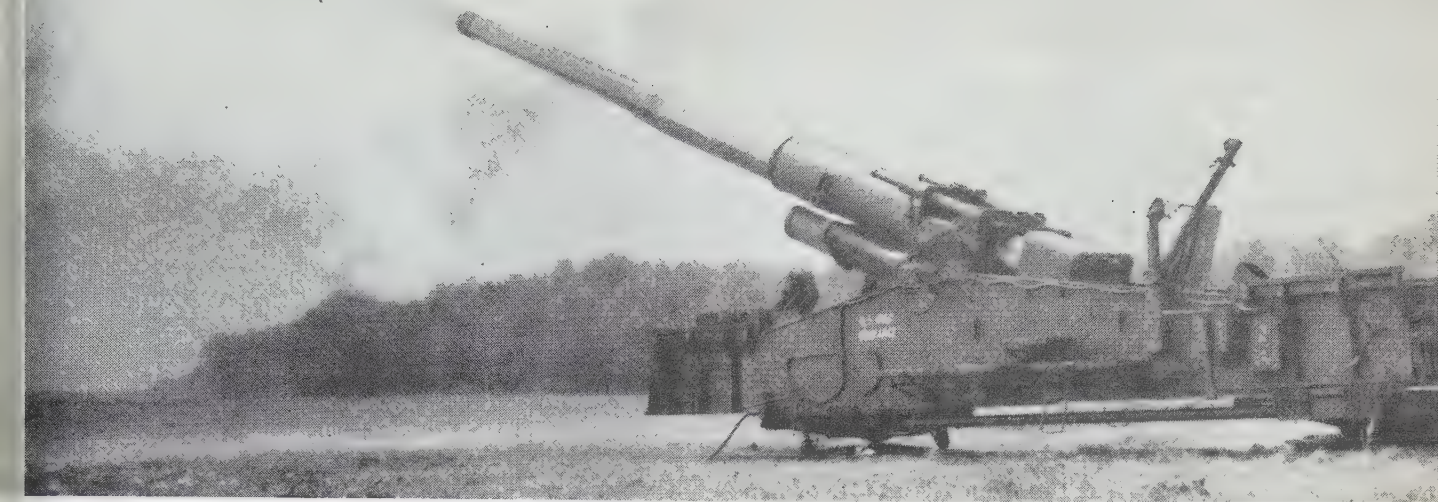
Canada.—Early in 1952 the Bank of Canada released some significant financial figures concerning Canadian municipalities: total current municipal expenditure (exclusive of provisions for debt repayment): 1939 \$286,700,000, 1949 \$474,200,000, 1951 \$571,500,000; total municipal revenue: 1939 \$309,900,000, 1949 \$521,100,000, 1951 \$630,500,000; revenue from taxation: 1939 \$271,600,000, 1949 \$432,400,000, 1951 \$528,800,000; net debt outstanding: 1939 \$1,228,600,000, 1949 \$1,052,600,000, 1951 \$1,358,700,000. After research, the Canadian Federation of Mayors and Municipalities noted that costs of municipal services were fast outstripping the limited revenue sources available and that municipal finance and taxation structures were too rigid or too limited to serve as adequate bases upon which the financial affairs of local government could be effectively carried on.

Although 117 out of 184 Manitoba municipalities had surpluses in 1951, the city of Winnipeg illustrated the problems of large urban municipalities by appealing to the provincial government for more money to pay education costs, all but administration costs for social services, 10% of its police force costs and a subsidy on trunk thoroughfares and bridges. In Ontario on March 2, 1952, rent controls ended in 708 municipalities but were retained in 215.

(C. CY.)

Munitions of War. **U.S. Army.**—A listing of the United States army's munitions items of interest for the year 1952 follows:

Battery.—The signal corps developed a process for refining low-grade domestic manganese for use in dry-cell batteries in place of imported high-grade manganese dioxide. The refined



U.S. ARMY'S 280-mm. mobile gun capable of firing both conventional and atomic shells. The giant self-propelled artillery piece was first photographed in 1952

product also approximately doubled the life of the battery.

Betatrons.—Three 24,000,000-v. betatrons, the first ever built for industrial operation, were being used in eastern and mid-western steel foundries to help speed the production of vital armour steel castings required in the army's tank program. These new X-ray giants could penetrate seven to nine inches of steel armour in little more than a minute and greatly speed and improve inspection techniques.

Body Armour.—Studies of penetration resistance of a new type of body armour by the quartermaster corps indicated that it might reduce battle casualties considerably. The eight-pound jacket, made of laminated nylon covered with a water-resistant shell, was submitted to field tests and issuance to combat troops in Korea was begun in 1952. Battle experience demonstrated that the jacket, with its resistance to low-velocity missiles, substantially reduced the number and severity of battle wounds.

Boot Insulation.—A new synthetic rubber insulation designed to replace wool fleece and felt in insulated combat boots was being tested by the quartermaster corps.

Bore-Hole Camera.—This camera for photographing rock strata was developed by army engineers. It would take continuous 360° pictures of a three-inch diameter bore hole for depths to 500 ft. Further tests were expected to improve performance and projection equipment.

Cable.—A new type of telephone and telegraph cable called "spiral-4," developed by the signal corps, was being used in Korea. It could carry about three times as much traffic as the type it replaced.

Cargo Tractor.—The M-8 cargo tractor could serve as a tracked personnel carrier, a cargo carrier or a heavy prime mover for such weapons as the 75-mm. Skysweeper anti-aircraft gun.

Chain Radar.—A guided missile could be followed through use of a chain radar system developed by the signal corps. This system made it possible to obtain accurate ballistic data along the missile's path. The chain consisted of stations spread along the range at advantageous points. Master stations were located at the major missile-launching areas and tracking was initiated simultaneously with the launching. Data from all stations were instantaneously relayed to the master station, enabling observers to watch flight characteristics of the missile. Photographic records were made of radar dials and oscilloscopes. At the terminal end, radar automatically trained cameras with telescopic lenses on the missile as it dived into the target, provid-

ing a record of this vital phase of the missile's trajectory.

Combat Camera.—A light, high-speed combat camera developed by the signal corps featured automatic film transport, four-inch f/2.8 lens and shutter operation permitting ten 1/500-second exposures in five seconds. It used 70-mm. film, 50 exposures to a roll. A built-in knife permitted removal of any exposure before the entire roll was shot. A combined view finder-range finder adjusted automatically for use with either normal lens, wide-angle 2½-in. f/4.5 or 8-in. f/4 lens. The entire outfit weighed only 22 lb.

Combat Garments.—The quartermaster corps was developing a single-layer sponge-plastic cold weather suit employing the vapour barrier principle. It was designed to be worn without underclothing and would reduce the number of items and weight of winter combat uniforms. Immersion tests proved that the buoyancy of the garment made a man unsinkable when wearing a 26-lb. pack. When coming out of the water, even in freezing temperature, the moisture on the body was promptly warmed by body heat.

Flare.—A flare which illuminated an area several hundred feet in radius and lasted more than five hours was invented in Korea by Lieut. Charles J. Husch. The device contained a mixture of diesel fuel, gasoline and napalm.

Jeep.—The new model M-38-A1, being produced by Willys-Overland Motors, Inc., under contract with the ordnance corps, was streamlined. A larger gasoline tank was provided, the hood lengthened and widened and a 72-h.p. F-head engine installed providing 20% more power. The more effective engine coupled with the larger fuel tank increased the cruising range from 180 to 300 mi. without refuelling. Larger springs, new shock absorbers and better brakes were added. Soft plastic seats replaced the hard canvas-covered pads. Ordnance-designed kits adapted the jeep to arctic, desert or water use. One kit, consisting of snorkel (intake) and snorter (exhaust) tubes, allowed the engine to "breathe" while submerged.

Paper Thermometers.—The quartermaster corps developed thermal indicators made of paper capable of determining temperatures ranging from 115° to 500° F. Although initially designed to ascertain thermal radiation of atomic blasts, these thermometers would probably be used in testing other appliances; they were inexpensive and readily disposable, or could serve as a permanent record.

Plastic Bags.—Plastic bags designed to replace glass bottles as containers for whole blood for military use were being tested by the army medical service.

Resuscitators.—A mechanical artificial resuscitator, light and

compact enough to be carried in the standard gas mask carrier with the mask, was developed by the army chemical corps and was being standardized. It could be operated in combat by one man.

Radio.—A broadcasting station on wheels, designed to carry psychological warfare messages to enemy territory, was developed by the signal corps laboratories at Fort Monmouth, N.J. The units installed in trailers could be transported by truck on land, by cargo planes aloft and by ships at sea. The range of the station was several hundred miles. A portable transmitting antenna could be raised 500 ft. in the air by balloon to allow the station to go on the air speedily.

Rifle Grenade.—The new rifle grenade, Energa, was in limited use in Korea. It weighed 0.1 lb. more than the M-9-A1, but its effective range was 100 yd. instead of 40 and its explosive charge constituted 11.6 oz. of the total instead of 4.

Shoepac.—An insulated rubber insert, applying the vapour barrier principle to the existing shoepac and giving greater protection under wet-cold conditions, was developed by the quartermaster corps and was being given field tests in Korea with favourable results.

Sleeping Bag.—As a result of a quartermaster development, processed chicken feathers were to be used in a newly designed sleeping bag-comforter combination which would replace the wool bag. The wind-resistant, water-repellent cotton-covered feather bag afforded twice the warmth of the wool bag.

Spark Plug.—A spark plug designed for underwater operation in amphibious vehicles was in production. It was assembled with a special connector making it an integral part of a waterproof, radio-shielded ignition system.

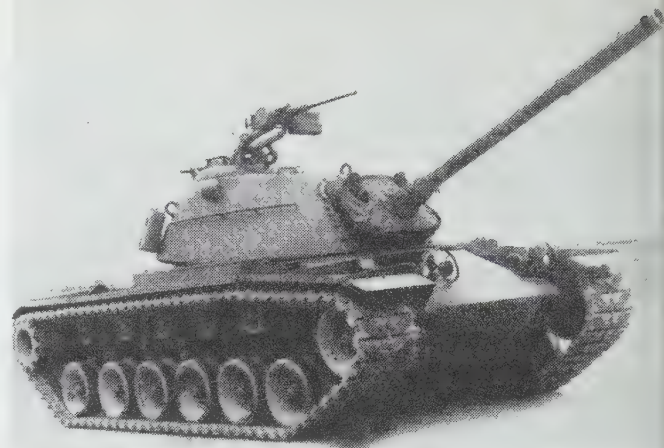
Tank Cannon.—The Oldsmobile company laid out its plant to comprehend the dual-purpose plan for sustaining the nation during peace and war, and was producing under "combined operations," on an assembly-line basis, the 90-mm. tank cannon on one line and automobiles on an adjacent line; the 3.5-in. bazooka rockets were being made along with auto engines. In its jet engine and forge plants, plans were under way for producing compressors and turbines for jet aircraft engines.

Tanks.—The M-47 was developed and produced after World War II. It, in essence, was a combination of a completely new turret, an improved World War II chassis and a post-World War II engine-transmission. It could turn in its own length, could traverse its turret manually or by power and had an automatic compensator to restore the aim of the 90-mm. gun after each shot. The T-48, or Patton-48, was the first completely new medium tank to be both developed and produced after World War II. It had wider tracks, a 90-mm. high-velocity gun with a quick-change tube, and a 50-calibre machine gun on the turret which could be fired and loaded from within. (R. S. T.)

U.S. Navy.—The shift of emphasis from research and development to production and procurement of naval ordnance, begun in the year 1951, was carried over into 1952. However, research and development continued to have an important share in the over-all program of the navy, with preference given to projects which were closest to fruition. Thus, a number of new weapons moved from planning boards to production lines and others were modified and improved after extensive evaluation tests on the first production models.

Accelerated production and procurement resulted in the awarding of more than 1,600 contracts in 1952, against approximately 1,100 in 1951—an increase of nearly 70%. Steps were taken to give small business a larger share in national defense production, by increasing advertised procurement, cutting proposals into smaller lots and sending a mobile exhibit of ordnance items on a tour of the United States.

The largest single procurement program was for three-inch



THE PATTON-48 medium tank, featuring a one-piece cast hull, was unveiled at the Chrysler corporation's arsenal, Newark, Del., in July 1952

rapid-fire anti-aircraft gun mounts, with a large proportion of the fleet's combatant ships receiving the new mounts during 1952. A completely automatic five-inch dual-purpose gun, with a rate of fire considerably higher than the World War II five-inch, was scheduled for installation in certain new ships under construction.

Development of fire control systems kept pace with the requirements and capabilities of the new gun batteries. Co-ordination between detection and acquisition of the target was improved through the introduction of new electronic equipment.

Encouraging progress was made in new weapons for anti-submarine warfare. New target-seeking torpedoes, to be launched from surface ships, submarines, planes and helicopters, were in production. A new rocket launcher, firing rockets containing several hundred pounds of explosives and controlled by a complete fire control system, was successfully tested and introduced into the fleet.

The production of aircraft rockets was expanded considerably to take care of increased requirements presented by the air force as well as by the navy. The largest program covered the 2.75-in. Mighty Mouse, the first air-to-air rocket to get into service. A fire control system developed for use with this rocket as well as with guns was released to production.

A significant development in the guided missiles field was the awarding of a contract to convert two heavy cruisers, the U.S.S. "Boston" and the U.S.S. "Canberra," to guided missiles ships. The conversion involved extensive modification of superstructures to permit the installation of missile systems. The addition of these guided missiles ships to the fleet would result in a major increase in naval fire power. (M. F. S.)

U.S. Air Force.—The air force spent \$300,000,000 for guided missiles in 1952 compared with \$130,000,000 in the previous year, while the navy spent \$153,000,000 compared with \$34,000,000.

A large portion of this money went for the purchase of actual production missiles, but some of it was used for completion of test and production facilities started in the previous year. The air force completed work on its long-range missile test facility at Patrick air force base, Cocoa, Fla. Missiles, of both air force and navy type, can be fired from Cocoa as far as 5,000 mi. into the South Atlantic, their progress monitored by a number of auxiliary tracking stations along the route.

Major expansion programs at three other missile test centres were completed during the year: an \$8,000,000 expansion at the air force's Holloman air force base, Alamogordo, N.M., used

or short-range and air-to-air missile testing; a \$7,000,000 program at the army-operated White Sands proving ground, N.M., used for ground-air or anti-aircraft missile tests; and a \$9,000,000 expansion at the navy's Point Mugu (Calif.) missile test centre. Holloman air force base was renamed Holloman air development centre.

Work was virtually completed and production ready to start at the new navy-sponsored guided missile production plant of Consolidated Vultee Aircraft corporation at Pomona, Calif., and also at a \$25,000,000 plant built by the Sperry corporation at Bristol, Tenn. Smaller guided missile production facilities were set up at a number of existing aircraft plants.

The development of large ramjet engines for long-range missiles was intensified. Pratt and Whitney Aircraft took over a special ramjet research laboratory at East Hartford, Conn., and Wright Aeronautical expanded its ramjet research facilities at Mt Wood-Ridge, N.J. Ramjets in the 40-in. diameter class were being tested, which, it was believed, might develop as much as 10,000,000 lb. thrust at high altitudes and high speeds. However, no large ramjets had been put into production.

Major progress in missile development was made in anti-aircraft missiles, in air-to-air missiles to be launched by interceptor fighters against attacking bombers, and in short-range surface-to-surface missiles, such as those to be used by the navy in ship-to-shore operations or by the army for front line contratroop use. The long-range intercontinental missile, the ultimate goal of push-button warfare, still lagged in development, however. The major problem was guidance control over long distances. Great progress had been made in short-range guidance, tracking and homing systems, but limited range precluded their application to intercontinental missiles.

Seven new missiles, all scheduled for production, made their appearance during 1952. The air force made its first firings of two "pilotless fighters," the Boeing XF-99 Bowmarc and the Hughes XF-98 Falcon. The Bowmarc was a ground-to-air missile which would perform all the functions of a piloted interceptor without the pilot. It was equipped with electronic equipment which would locate an attacking enemy bomber, lock onto it, track it and either collide with it or explode by proximity.

The Falcon had similar electronics equipment and operated in the same fashion, except that it was launched from an aeroplane. Plans called for it to be carried by a new, delta-wing supersonic fighter, the Convair F-102. The navy had a similar development in a missile known as the Sparrow 1, which was in production at Douglas Aircraft company. It had not been disclosed by what aeroplane type it would be carried.

The air force also introduced two "pilotless bombers," the Bell XB-63 Rascal and the Northrop XB-62 Snark. These types differed from the pilotless fighters in that they were intended for offensive rather than defensive use. The Rascal was a ground-to-air missile launched from a "mother" plane like the guided bombs of World War II, except that it had electronic homing controls for pinpointing its target. This obviated the necessity of flying a piloted aircraft into a well-defended target area; the mother plane could release the missile miles from the target.

The Snark was a surface-to-surface missile of medium-long-range capabilities, but not of intercontinental range. It was an extension in both range and speed of the principle introduced during 1951 in the Martin B-61 Matador, the first pilotless bomber. The navy had a development similar to the Snark. Built by Chance Vought Aircraft, it was known as the Regulus. These two new missiles had not outmoded the Matador; it was continuing in production and substantial numbers were built and tested.

The other new missile was the Terrier 1, a navy missile to be

used for fleet defense. It was a shipboard-to-air two-stage missile, similar in principle to the Boeing Bowmarc.

The year marked the elimination of machine guns in fighter type aircraft of the air force; in the future their sole weapons would be high-velocity rockets. Three new interceptors which were in service were already so armed with 2.75-in. missiles carried in the nose of the fuselage, in a retractable pod under the fuselage or in wing-tip pods, depending on the plane type (the planes were the Lockheed F-94C, the North American F-86D and the Northrop F-89). The interceptors carried up to 48 rockets. All future fighter designs were to carry this type of armament. (See also ARMIES OF THE WORLD; ATOMIC ENERGY; AVIATION, MILITARY; JET PROPULSION; NAVIES OF THE WORLD.)

(J. J. HY.)

Museums. United States.—During 1952, museums in the United States performed their established functions of collecting important objects, preserving them and using them for research and education. The principal directions of growth were in improved methods, expanded services and new museums.

Specimens, the raw materials for museum work, were acquired in several ways. The Chicago Natural History museum obtained many rare examples of early Mexican Indian workmanship from the National Museum of Mexico in exchange for objects of northern Indian and Pacific Island peoples. A large collection of Swedish materials was given the Busch-Reisinger Museum of Germanic Culture at Harvard university. The Samuel H. Kress foundation donated important groups of paintings to the Birmingham Museum of Art, Alabama, and the Portland Art museum, Oregon. Expeditions were sent out by museums to Afghanistan, Iran, Iraq, Turkey and Greece; to New Caledonia, New Guinea and Guam; to Cuba, Trinidad, the Canal Zone and British Honduras; as well as to many parts of the United States.

LEARNING AMERICAN HISTORY first hand during a 1952 summer study program for children at the Missouri Historical Society museum in St. Louis. After listening to stories about steamboats the children took turns at the eight-foot pilot wheel, an exhibit in the museum



The constant work of preserving museum collections usually proceeds quietly behind the scenes, but the Yale University Art gallery, New Haven, Conn., marked the 100th anniversary of the Jarvis collection with a special exhibition showing how 14 of the paintings had been cleaned and treated scientifically to protect them from deterioration. The George Eastman house in Rochester, N.Y., a museum of photography, began a \$100,000 program to preserve motion pictures of historic importance. Old reels were being copied on more durable film and special storage space was being prepared.

Research by museums increased knowledge in many directions. The Academy of Natural Sciences, Philadelphia, Pa., was requested to make a detailed biological study of the Savannah river near which a new atomic plant was under construction. The Franklin institute in Philadelphia leased two buildings to expand its research facilities.

The educational work of museums is primarily through exhibits, and there was important progress in building new and better displays. Among the new installations were the "Electric Theatre" in the Chicago (Ill.) Museum of Science and Industry; a series on "Aerology: Weather in Action" at the Buhl Planetarium and Institute of Popular Science, Pittsburgh, Pa.; the "Gallery of Living Invertebrates" at the American Museum of Natural History, New York city; and a "History of Communications" exhibit in the Ohio State museum, Columbus. In New York and Chicago museums placed exhibits in the show windows of leading stores where they were seen by many thousands of people who seldom visit the museums. While the United Nations Educational, Scientific and Cultural organization held an international seminar at the Brooklyn museum on "Museums in Education," steady progress was being made in correlating the work of museums and schools. When the Newark, N.J., public schools began a new science program in the elementary grades, the Newark museum revised its lending collection to fit. In Brooklyn, N.Y., the board of education installed an exhibit, the "World at Work," in the Brooklyn Children's museum especially for sixth, seventh and eighth grade classes.

Several new museums were opened during 1952, including the National Park Service museum at Custer Battlefield national monument, Montana, the Frye Art museum in Seattle, Wash., and the Wonder Workshop and Junior museum, Bridgeport, Conn. (See also SMITHSONIAN INSTITUTION.) (R. H. Ls.)

Accessions to Art Galleries and Art Museums.—Most princely of museum gifts during the 1952 season was the \$10,000,000 given by John D. Rockefeller, Jr., to the Metropolitan museum in New York "for enrichment of the Cloisters . . . and for the preservation, housing and presentation of its collections." The Cloisters in Fort Tryon park in upper Manhattan house the Metropolitan's superb collection of mediaeval art.

In Richmond the Virginia Museum of Fine Arts was left a \$4,000,000 fund and collection by Mr. and Mrs. A. D. Williams, deceased. Among the 42 old masters were notable canvases by Rembrandt, Frans Hals and Rubens.

Phillips Exeter academy, Exeter, N.H., with \$100,000 given by alumni, was to build the Lamont gallery where there would be a workshop as well as galleries for exhibitions.

The Kress foundation continued to give groups of paintings to museums. They presented 32 paintings to the Honolulu Academy of Fine Arts, 27 to the Portland (Ore.) Art museum and 23 to the Seattle Art museum. Among the most important were "St. Jerome" by Lorenzo Lotto (Venetian, 1480-1556), "Madonna and Child with Saints" by Luca Signorelli (Italian, 1450-1523), and "Portrait of a Man" by Tintoretto (Venetian, 1518-94), all given to Honolulu.

Another gift to Seattle was 20 old master drawings from Roy M. Backus, deceased. These included the "Judgment of Paris"

by Lucas Cranach (German, 1472-1553), "Peasants" by Pieter Bruegel, the Elder (Flemish, 1564-c.1637) and a "Madonna" by Albrecht Dürer (German, 1471-1528).

One of the most important single pictures to enter a museum collection was "The Musicians" by Caravaggio (Italian, 1573-1610), purchased for the Metropolitan museum in New York. The painting had been lost for many years, then was purchased unidentified for £100 by a retired English naval surgeon. The present purchase price was not revealed. Another important painting to go to the Metropolitan was the "Death of the Virgin" by Bartolommeo Vivarini (Italian, 15th century), a gift of Robert Lehman.

Two outstanding paintings were acquired by the Wadsworth Atheneum in Hartford, Conn. One of these was a dramatic picture of the hanging of a white-clothed monk, St. Serapion, by Francisco Zurbaran (Spanish, about 1628). The other was "The Tiger Hunt" by Peter Paul Rubens (Flemish, 1579-1640), acquired for the Sumner collection.

A most unusual Colonial American picture was acquired by the Detroit Institute of Arts. This was the "Head of a Negro" by John Singleton Copley (1738-1815), a most informal but realistic study for the period. It was a sketch for one of the figures in Copley's ambitious composition, "Watson and the Shark."

The Cleveland Museum of Art acquired for the Hanna fund a group of 16 Egyptian limestone reliefs from the tomb of a nobleman in Upper Thebes dating from the 15th or 16th dynasty, 690-650 B.C. They also acquired a great 17th-century Dutch painting, the "Music Party" by Pieter de Hooch. The purchase price was reported as more than \$60,000.

Another important Dutch picture, "The Housekeeper" by Nicholas Maes, signed and dated 1656, was acquired for the City Art museum of St. Louis.

A great Chinese painting was presented by an anonymous donor to the Cincinnati museum. This was a 13th-century scroll, the finest of six surviving paintings by Ma Yuan.

A very important French painting by Auguste Renoir, dated 1881, was acquired for the Minneapolis Institute of Arts. This had formerly been in the Neue Staatsgalerie in Munich and was purged by Hitler as "degenerate" art.

The Albright Art gallery in Buffalo purchased a monumental contemporary bronze, "Sacrifice" (the only casting made), by Jacques Lipchitz, 1947.

Probably the most outstanding early manuscript in America was acquired for the Morgan library in New York. This was a 9th-century French Gospels illuminated at Tours.

The Currier Gallery of Art in Manchester, N.H., inaugurated a policy of building up a collection modest in size but of top quality. As an example they purchased a "Self-portrait" by Jan Gossart (Mabuse) painted about 1515. (See also ART EXHIBITIONS; ART SALES; PAINTING.) (F. A. Sw.)

Great Britain.—The Wellington museum was opened in Apsley house, London, the former London residence of the first duke of Wellington. In York an extension of the Castle museum was opened in the old debtors' prison to house a series of ancient craft workshops, English costume displays and a military museum for the Yorkshire regiments.

The Museums association's new constitution, under which the qualifications of museum officials were recognized by the award of fellowships and associateships, came into effect on April 1.

Commonwealth.—Under the auspices of the committee for museums of the U.N.E.S.C.O. National Commission for Australia, a travelling exhibition was produced by museums throughout the country for circulation abroad, to illustrate the way of life of Australian aborigines.

Museums and art galleries in South Africa took a full part in the national celebrations that marked the tercentenary of Jan

an Riebeeck's landing at the Cape. A new series of dioramas in the South African museum, Capetown, containing life-size reconstructions of extinct reptiles of the Permian-Triassic period and characteristic types of contemporary flora, marked an important advance in display technique in South Africa.

The establishment of four Gandhi memorial museums at Rajahmundry, Sabarmati Ashram, Sewagram and Madura in India was proposed by the Gandhi Smarak Nidhi (Gandhi national memorial fund).

Europe.—Several rooms in the folklore department and important ceramic collections were reopened to the public at the Musée Royaux d'Art et d'Histoire, Brussels, in 1952. At Mariemont, the extensive collection of Tournai porcelain was completely classified and redisplayed. A new museum was established at Tourcoing, Fr., to display ancient costumes. The museum at Chalcis, Gr., was reopened and at Delphi all the sculpture was again on show. The reorganization of the museum on the Acropolis was expected to be completed by 1953. Finds from the 1937-40 excavations at Olympia were added to the collection of sculpture from the Temple of Jupiter already on exhibition at the site museum. Postwar restoration of the Heraklion museum in Crete, containing the material from Knossos and Phaestis, was finally completed.

A new museum, the Netherlands Costume museum, was reopened at The Hague, and major reorganizations, including rebuilding and rearrangement of displays, were carried out at the Rijks-museum, Amsterdam, and at Arnhem, Leeuwarden and Maastricht.

New or rebuilt museums to be opened in Poland included the Lenin museum at Cracow, historical museums in Wrocław, Cracow and Brzeg, a regional museum at Łowicz and a museum of natural and social history at Gorzów.

The International Institute for the Study of Castles established a museum, devoted to the study of the history of castles, at Rapperswil in Switzerland, and issued an appeal for plans and details of castles in all countries. (G. P. G.)

Music. The music year 1952 was marked by an unprecedented exchange of international travel. Entire orchestras and opera groups journeyed by ship and aeroplane across oceans and continents. The Boston Symphony orchestra made its first tour abroad, appearing in major European cities. George Gershwin's opera *Porgy and Bess* had highly successful performances by an all-Negro troupe in Berlin, Vienna and London. The Hamburg State opera took part in the Edinburgh Music festival. The Danish State orchestra flew from Copenhagen to the United States for a series of 38 concerts. Under the auspices of the cultural department of Indonesia, the Bali dancers were flown from their distant island to the United States, with their unusual orchestra of Balinese percussion instruments.

Numerous music festivals were presented in American and European music centres. Of these the most sumptuous was the Paris festival, sponsored by the Congress for Cultural Freedom and devoted to the presentation of musical masterpieces of the 20th century (April 30-June 1). Apart from Paris musical organizations, the Covent Garden opera of London, the Boston Symphony orchestra, the Vienna Philharmonic, the Radio orchestra (RIAS) of west Berlin, the Orchestre de la Suisse Romande and the Orchestra and Chorus of St. Cecilia, Rome, took part in the Paris festival. The operas *Wozzeck* by Alban Berg, *Billy Budd* by Benjamin Britten, *Four Saints in Three Acts* by Virgil Thomson and Vittorio Rieti's *Don Perlimplin* were staged. Among ballet performances at the Paris festival, Henri Sauguet's *Cordelia* and Georges Auric's *Coup de feu* were given for the first time.

Symphonic music was represented at the Paris festival by

works by Debussy, Ravel, Honegger, Milhaud, Poulenc, Koechlin, Messiaen, Roussel, Frank Martin, Stravinsky, Prokofiev, Shostakovich, Bartók, Schönberg, Hindemith, Vaughan Williams, Walton, Constant Lambert, Bohuslav Martinu, Dallapiccola, Villa-Lobos, Walter Piston, Samuel Barber and many others.

The change in popular acceptance of modern works was dramatically demonstrated when Pierre Monteux conducted, on May 8, Stravinsky's *Le Sacre du Printemps*, 39 years after he gave in Paris the world *première* of this challenging work. The music had provoked a riot then; in 1952 there was an ovation.

Among other music festivals in Europe were: the Holland festival at The Hague (June 5-July 4), of which the major event was the performance of the opera *Halewijn* by the Dutch composer Willem Pijper (June 26); *Maggio Musicale* in Florence (May 1-June 20); Strasbourg festival (June 10-25); a choral festival in Aldeburgh (June 14-22), held under the general guidance of Benjamin Britten; the Granada festival (July), in programs of choral and instrumental music by Spanish composers and Spanish-inspired works by French composers; the Festival of Swiss Musical Societies in St. Gallen (July 11-13), which featured a yodelling contest with 2,800 participants; the Lucerne festival (Aug. 9-31), in programs of orchestral music ranging from Bach to Hindemith; and the International Festival of Contemporary Music in Venice (Sept. 10-22).

The Edinburgh festival (Aug. 17-Sept. 6) opened with a Sibelius program conducted by Sir Thomas Beecham. The Hamburg State opera, appearing in Edinburgh for the first time, presented Hindemith's *Mathis der Maler*; the Concertgebouw orchestra of Amsterdam performed several major works by modern composers.

In 1952 the International Society for Contemporary Music gave its 26th festival in Salzburg, where the society was inaugurated in 1923. Works by composers of virtually every country in the world (except the U.S.S.R., which is not a member of the society) were performed.

The opening program (June 20) featured symphonic works by the following German composers: Wolfgang Fortner, Karl Amadeus Hartmann, Winfried Zillig and Werner Egk. The second concert (June 21) included works by Conrad Beck (Switzerland), Hanns Jelinek (Austria), Rudolf Wagner-Regeny (Germany), Paul Csonka (Cuba) and Marcel Quinet (Belgium).

A memorial concert of works by Arnold Schönberg (five orchestral pieces, monodrama *Erwartung* and variations for orchestra) was given on June 22.

A program of chamber music (June 23) included works by Josef Tal (Israel), Roman Vlad (Italy), Phyllis Tate (England), Alfonso Letelier (Chile), Don Banks (Australia), Karl Otto Runolfsson (Iceland) and Jean Martinon (France). Compositions for small orchestra by Claudio Santoro (Brazil), Nils Erik Ringbom (Finland), Humphrey Searle (England), Claus Egge (Norway), Edward Staempfli (Switzerland) and Knudage Riisager (Denmark) were presented on June 24. A concert of chamber music on June 25 consisted of works by Claus Adam (U.S.), Karl Schiske (Austria), Ronald Tremain (New Zealand), Henri Pousseur (Belgium), Marcel Mihalovici (France), Stefans Grové (South Africa), Lex van Delden (the Netherlands) and Guillermo Graetzer (Argentina).

Symphonic music by Tibor Harsanyi (Hungary-France), Bernd Aloys Zimmermann (Germany), Mario Peragallo (Italy) and Pierre Boulez (France) was performed on June 26. A concert of "modern classics" (Stravinsky, Hindemith and Béla Bartók) took place on June 27.

A tragic event marked the concert of orchestral works by modern Austrian composers (June 28). The program as scheduled was to include compositions by Georg Gruber, Cesar Bres-

gen, Wilhelm Huebner, S. C. Eckhardt-Gramatte and Gottfried von Einem. Shortly before the end of Huebner's piece, the conductor, Herbert Haefner, collapsed on the podium and died during a heart attack. The rest of the program remained unperformed.

The concluding concert of the Salzburg festival took place on June 29, with orchestral works by Matija Bravnicar (Yugoslavia), Yoritsune Matsudaira (Japan), Göte Carlid (Sweden), Marius Flothuis (the Netherlands) and Giorgio Federico Ghedini (Italy).

A series of concerts of contemporary music was given in February in Sydney, Austr., with works by Bartók, Britten, Schönberg, Shostakovich and the patriarch of Australian composers, Alfred Hill. A South African music festival was held in March in Capetown. *Tafelberg se Kleed*, an opera on South African themes by the resident composer-conductor Albert Coates, received its first performance; other works heard for the first time were a *Violin Concerto* by Erik Chisholm, English composer living in South Africa, and the *Second Symphony* by the native musician Arnold van Wyck.

There were no special festivals of national music in South America, but successful opera seasons were given in Buenos Aires and in Rio de Janeiro, and performances by visiting opera companies took place in capital cities of South American republics.

In Mexico, the most interesting music events were provided by the Orquesta Sinfónica Nacional. On Feb. 29 Carlos Chávez, the leader of this orchestra, conducted the first performance of his *Violin Concerto*.

A series announced as "Music of the Countries of Popular Democracy," devoted to compositions by Rumanian and Estonian composers, was given in Moscow in January.

In the United States, the 22nd annual Festival of American Music took place in Rochester, N.Y. (April 28–May 8), with works by Menotti, Samuel Barber, Walter Piston, William Schuman, Wallingford Riegger, Morton Gould, Ulysses Kay, Peter Mennin and others. Howard Hanson, the founder of the Rochester festival, conducted the symphonic works on the program.

A festival of the creative arts was inaugurated at Brandeis university, Waltham, Mass., under the general direction of Leonard Bernstein. On June 12 Bernstein conducted his new one-act opera, *Trouble in Tahiti*. On June 14 the Brandeis festival presented a modernized version of Kurt Weill's *Dreigroschenoper*, with a new libretto by Marc Blitzstein. On the same program, the first U.S. hearing of "musique concrète" was given, with a ballet performance of *Symphonie pour un homme seul*, composed for a magnetized tape-recording machine by the Paris radio engineer Pierre Schaeffer.

At Tanglewood, the annual Berkshire Music festival took place in the summer (July 5–August 10). Programs of classical and modern music were presented by the Boston Symphony orchestra and student groups.

The first International Contemporary Music festival in Pittsburgh, Pa. (Nov. 24–30), included programs of symphonic, choral and chamber music by modern composers. Special works were commissioned from European, Latin-American and North American composers, to be performed for the first time at the Pittsburgh festival.

The following new operas had their first performances in 1952: *L'Urugano* by Ludovico Rocca (Milan, Feb. 8); *Yuzuru* by Ikuma Dan (Tokyo, Feb. 11); *Boulevard Solitude* by Hans Werner Henze (Hanover, Feb. 17); *Leonore* by Rolf Liebermann (Basel, March 25); *Proserpina e lo straniero* by Juan José Castro (Milan, March 17); *Acres of Sky* by Arthur Kreutz (New York city, May 7); *Mila Goysalica* by Jakov Gotovac

(Zagreb, May 18); *The Farmer and the Fairy* by Alexandre Tcherepnin (Aspen, Colo., Aug. 13); and *Das Preussische Märchen*, ballet-opera by Boris Blacher (west Berlin, Sept. 23).

One of the most important musical events was the posthumous production of the opera *Die Liebe der Danae* by Richard Strauss (Salzburg, Aug. 14). The score was composed in 1940 and was scheduled for performance in Salzburg in Aug. 1944, but after the final rehearsal all theatres were closed by the Nazi regime, and the public performance of *Die Liebe der Danae* was cancelled.

A revised version of Hindemith's opera *Cardillac* was given for the first time in Zürich on June 20. *Wat Tyler*, historical opera by the English composer Alan Bush, awarded a prize during the 1951 Festival of Britain, was first performed on the Berlin radio on April 3, before its production in England.

Among new ballets, *Rondo vom goldenen Kalb* by Gottfried von Einem was produced in Hamburg on Feb. 1, and *Chemin de lumière* by Georges Auric, in Munich on March 27.

The following symphonic works were performed for the first time in 1952: *Symphony Concertante* by Gail Kubik (New York city, Jan. 7), awarded the Pulitzer prize for music; *Symphony Number Eight*, subtitled *Sinfonia dello Zodiaco* by Francesco Malipiero (Geneva, Jan. 23); *Die Harmonie der Welt* by Hindemith (Basel, Jan. 25); *Concerto for Horn and Orchestra* by Reinhold Glière (Moscow, Jan. 26); *Symphony Number Four* by Paul Creston (Washington, D.C., Jan. 30); *Symphony Number Two* by Alexandre Tcherepnin (Chicago, March 20); *Piano Concerto* by Alexei Haieff (New York city, April 27); *Sinfonietta for String Orchestra* by Nevit Kodalli (Ankara, Turk., May 3); *Symphony Number Seven* by Roy Harris (Chicago, Nov. 20); *Temptation of St. Anthony*, dance-symphony by Gardner Read (Chicago, Dec. 26).

Stravinsky conducted, on Nov. 11, in Los Angeles, the first performance of his *Cantata* for solo voices, female chorus and string quintet, to the text of four English poems of the 15th and 16th centuries.

(N. Sv.)

Popular Music.—In popular music, Johnnie Ray's formula of bursting into tears as he bellowed musical platitudes into a microphone brought him an amazing success. A song called simply "Cry," written by Churchill Kohlman but popularized by Ray, first made the Lucky Strike Hit Parade late in Jan. 1952, and was on top of the list a week later. Meanwhile Ray's own composition, "The Little White Cloud That Cried," a slight variation on the same idea, found its way into the first seven and remained there for eight weeks, although it never quite reached the top. "Please, Mr. Sun" did equally well. By midsummer the Ray voice and style had revived the solid 1930 hit of Roy Turk and Fred Ahlert, "Walkin' My Baby Back Home," and given it a 12 weeks' run on the current Parade, with several appearances at the top.

It was not an impressive year in popular music. The best songs were old-timers or deliberate echoes of already established melodies. Outstanding in the latter class was "Kiss of Fire," adapted frankly by Lester Allen and Robert Hill from the classic tango "El Choclo," by A. G. Villoldo. It made the Hit Parade for 14 weeks, half of the time at the top. "Auf Wiederseh'n Sweetheart," a simple chorus derived by John Sexton and John Turner from a German song by Everhard Storch became the rage in July and held its own for several months. Late in the year the old "Glow-Worm" of Paul Lincke reached the top of the Hit Parade, after Johnny Mercer had added electric modern lyrics to the original lines of Lilla Cayley Robinson, dated 1907.

Another phenomenon of 1952 was the spectacular success of Harold Rome's "Wish You Were Here," after the musical comedy of the same title had almost succumbed to bad notices.

definitely below Rome's standard, it was his biggest hit thus far. Eddie Fisher brought back a relic of 1931, "Lady of Pain," written by Erell Reaves and Tolchard Evans.

The hillbilly influence was emphasized in Curley Williams' "Half as Much," popularized by a Rosemary Clooney record, and "Jambalaya" ("On the Bayou"), which profited by the singing of Jo Stafford. Of a similar type was the rollicking "Shrimp Boats," with a melodic suggestion of the old "Under the Bamboo Tree." "I Went to Your Wedding," a banal torch song by Jesse Mae Robinson, was popularized largely by the recording of Patti Page.

The rest of the popular songs of 1952 had little to recommend them. "A Guy Is a Guy" imitated the ancient "Dutch Company" and "Why Don't You Believe Me?" was close to a phrase in Jerome Kern's "They Didn't Believe Me." "Because You're Mine" took its title from the Mario Lanza motion picture.

There was more originality in Leroy Anderson's "Blue Tango," for which Mitchell Parish supplied the text, and the same composer's catchy "Syncopated Clock" was heard frequently. Other tunes prominent in the Hit Parade were "Slow Poke," "Sin," "Down Yonder" and "Undecided" (all left-overs from 1951), "Domino," "Any Time," "Tell Me Why," "I'm Yours," "Wheel of Fortune," "Blacksmith Blues," "Here in My Heart," and "Somewhere Along the Way." (S. Sp.)

Jazz.—Jazz found the going arduous in 1952. No outstanding new names came to the fore, nor did any fresh ensemble sounds emerge. Rather, it was a year of regrouping and comebacks.

Woody Herman, after struggling long and painfully to piece together a first-rate crew, finally hit solidly with a young, ambitious band sparked by the veteran bassist Chubby Jackson. Count Basie, Duke Ellington and Stan Kenton followed virtually the same paths. Basie, after touring the U.S. with a seven-piece combination for a couple of years, re-formed a big band that to many ears was as thrilling as his great band of the late 1930s and early 1940s. Ellington lost the heart of his or-

ganization in 1951 when Johnny Hodges, alto saxophone, Lawrence Brown, trombone, and Sonny Greer, drums, left him to form their own group. Yet he rebounded in spectacular fashion, and in 1952, driven on by iron-wristed drummer Louie Bellson, again was a pace setter. Kenton, too, lost virtually his entire band at the end of 1951 and laboured for months to reassemble musicians of the calibre of those who departed. However, by midsummer he was leading what many considered to be the best jazz band he had ever had.

Packaged jazz concerts were generally quite successful. Norman Granz still topped them all with his Jazz at the Philharmonic unit by grossing nearly \$1,000,000 on his annual tour, but other shows like the Nat (King) Cole—Sarah Vaughan—Duke Ellington troupe and the Billy Eckstine—George Shearing package also did a large business. Aside from these few concert hall appearances, however, jazz was not welcomed in many places. Dixieland had its home in New York city (with week-end all-star sessions going especially strong), Los Angeles and New Orleans, where the devoted work of the New Orleans Jazz club kept interest alive. Other types of jazz groups found business flourishing only in a few New York night spots and in cities such as Chicago, San Francisco and Philadelphia.

In some quarters the work of Lennie Tristano began to attract more attention and suggested that from this direction might come the next modern movement in jazz.

Thus it was a quiet year for what is normally a turbulent art form, but the resurging interest in large orchestras and the spirited attendance at name-loaded concerts was a suggestion that the same sort of spark that was provided by Benny Goodman in 1934 might again ignite mass appeal. (J. T.)

Recordings.—Since the advent of the LP (long-playing 33 $\frac{1}{3}$ -r.p.m.) system in 1948, and until recently, record manufacturers and their customers were frequently more concerned about the physical sound emanating from a recording than they were about either the intrinsic merit of the music being performed or the ability of the performers. But by early 1952 this trend had reversed itself. Record buyers assumed, and correctly, that the technical advances in sound recording made in the

COMPOSER IGOR STRAVINSKY silhouetted against the stage as he conducted his opera *Oedipus Rex* in Paris during the 1952 concert series, "Masterpieces of the 20th Century." Masks for the opera were designed by Jean Cocteau, who also wrote the libretto



development of the LP system would be incorporated into every record offered for sale by each of the major companies. This was the year both the recording companies and the record buyers shifted their concern almost entirely to the music and its rendition. The large number of companies (more than 100), each set upon making its catalogue distinctive. This was an assurance to the buyers that a vast number of previously unrecorded works would be given estimable performances on records.

Among the year's most noteworthy recordings were the following: On the RCA Victor label—Beethoven's *Symphony Number Nine* played by the NBC Symphony orchestra and sung by the Robert Shaw chorale and soloists all under the direction of Arturo Toscanini; Purcell's short opera *Dido and Aeneas*, performed at the Mermaid theatre in London with Kirsten Flagstad and Thomas Hemsley in the title roles; and Schubert's *Die Schöne Müllerin*, sung by Aksel Schiotz with Gerald Moore accompanying. On Columbia—Alban Berg's unfinished opera *Lulu*, with a cast of soloists and the Vienna Symphony orchestra under the direction of Herbert Haefner; Schönberg's *Erwartung*, played by the Philharmonic Symphony orchestra of New York with soprano Dorothy Dow as soloist and Dimitri Mitropoulos conducting; a reissue of the famed Felix Weingartner performances of the complete symphonies of Beethoven and Brahms; a compilation of all the piano music of Ravel in a three-record LP set with Robert Casadesus as the soloist; and in the field of serious drama, a reading of Bernard Shaw's *Don Juan in Hell* by Charles Laughton, Agnes Moorehead, Charles Boyer and Sir Cedric Hardwicke. On Decca—the 32 piano sonatas of Beethoven played by Wilhelm Kempff. On EMS—Martinu's *Sonata for Flute and Piano* (1946), played by Rene LeRoy and George Reeves. On Cetra-Soria—a complete performance of Verdi's *Don Carlo*, with Nicola Rossi-Lemeni Maria Caniglia and Ebe Stignani in leading roles. On the Bartók Recording society label—a performance of Béla Bartók's *Viola Concerto* with William Primrose as the soloist and the new Symphony orchestra of London conducted by Tibor Serly. On Westminster—a first performance on LP records of Hector Berlioz' *The Trojans at Carthage*, sung in French by the soloists and Ensemble Vocal de Paris with the Orchestre Société des Concerts du Conservatoire conducted by Herman Scherchen; Schubert's *Op. 100, 166 and 168* performed by chamber groups; Beethoven's *Opus 127* (the 12th of the 16 string quartets) played by the Vienna Konzerthaus quartet; and the Bach *Brandenburg Concertos Number Two in F Major* and *Number Four in G Major* played by the London Baroque ensemble under Karl Haas. (J. J. Ry.)

Music in Industry.—The year 1952 witnessed a significant development destined to make planned programs of industrial music available over a greater geographical area of the United States—the long-playing magnetic-recorded tape and playback unit. Hitherto restricted to large metropolitan centres because of the cost of long-distance telephone line transmission, authentic work music could now be utilized by industrial management in smaller cities and isolated communities for the betterment of working conditions.

Because of the economies of its operation, the long-playing magnetic tape playback unit permitted the setting up of central transmission points in small cities where such service could not otherwise be profitably rendered. Similarly, industrial plants in one-industry towns, far from urban centres, could utilize tape-recorded work music to replace the more expensive and unsatisfactory in-plant record systems which, of necessity, limited the choice of music to that of phonograph records.

This development was pioneered and brought to fulfilment by the Muzak corporation, the originator of scientifically arranged work music programs. The consequent availability of authentic work music over greater geographical areas enabled defense

plants relocated in smaller communities, because of the government Plant Dispersal program, to utilize the same functionally designed music programs previously limited to the larger metropolitan centres.

Music for background purposes and atmosphere psychology made startling gains during 1952 in the retail merchandising field, notably supermarkets, largely because of the accelerated trend to self-service. With one out of every four supermarkets entirely self-service in the basic grocery, meat, dairy and produce departments, specialized music programs helped to offset lack of personal contact with customers by creating a friendly musical atmosphere.

Music Library Association: see SOCIETIES AND ASSOCIATIONS, U.S.

Mutton: see MEAT.

Mutual Security Program.

The Mutual Security agency was, during 1952, the branch of the United States government primarily concerned with aid to foreign countries. Created late in 1951, the MSA replaced the Economic Cooperation administration which had been set up to carry out the Marshall plan. The change marked a shift in emphasis from civilian aid to rearmament. Most of the funds appropriated by congress in 1951 and 1952 for Mutual Security aid were earmarked for military "end items": weapons, tanks, munitions, military and naval equipment and the like. Raw materials, food, manufactured goods, machinery and other supplies needed to carry out rearmament programs and to strengthen civilian economies were designated "defense support" aid. Technical assistance of many sorts made up the third main category of foreign aid provided by the United States. As in previous years, western Europe received the bulk of United States military and economic aid but assistance was also provided to most of the countries outside the soviet orbit in Asia, Africa and Latin America.

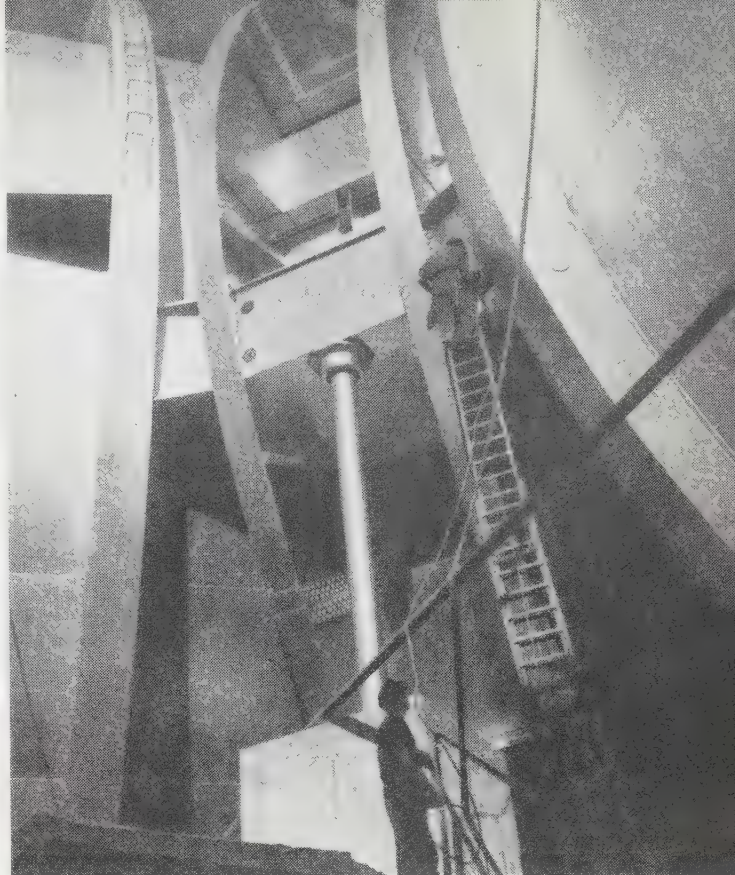
Congress gave the secretary of defense primary responsibility for the determination of military needs, the procurement of military supplies, their delivery and the supervision of their use. The department of state administered technical assistance programs in a number of countries. However, the director for mutual security, Averell Harriman, had a general co-ordinating and supervisory responsibility with regard to these activities. In addition, he was head of the Mutual Security agency which carried on some of the functions formerly performed by ECA, handled defense support aid and administered technical assistance programs in a number of countries. Within each country receiving aid, a team was formed, headed by the U.S. ambassador or minister, and including representatives of the MSA and the United States military authorities, to ensure that the policy of "one country, one program" was carried out. In Jan. 1952, William H. Draper, Jr., was appointed United States special representative in Europe to co-ordinate aid programs to countries in that area. Reporting to the president, Ambassador Draper acted for both the director of mutual security and the secretary of defense, and was the permanent United States representative to the North Atlantic council, the principal organ of the North Atlantic Treaty organization.

Through these, and some other channels, the United States provided slightly more than \$5,000,000,000 in foreign aid during the fiscal year ending June 30, 1952. European countries and their dependencies received \$3,600,000,000 of this aid; \$924,000,000 went to Asia and the Pacific area; \$191,000,000 to Latin America; and \$174,000,000 to the near east and Africa. About three-quarters of the nonmilitary aid to western Europe went to five countries: France (\$477,000,000); Britain (\$316,-

100,000); Italy (\$218,000,000); Greece (\$203,000,000); and Western Germany (\$201,000,000). Credits accounted for \$659,000,000 of United States aid during fiscal 1952, while grants amounted to more than \$4,300,000,000. Repayment of past credits, returns on previous grants and grants by foreign countries to the United States totalled \$503,000,000, so that the net outflow of foreign aid from the United States was slightly more than \$4,500,000,000 during the fiscal year. Although appropriations for military aid accounted for more than 70% of the money congress granted to the MSA for fiscal 1952, the amount of military aid actually used during that period came to less than \$2,000,000,000 out of the total gross foreign aid of \$5,000,000,000. Because of the time required for manufacture, many military items contracted for during fiscal 1952 would appear only in the aid figures for a later period when they were delivered. Similarly, many of the shipments of civilian goods appearing in the aid figures for fiscal 1952 were paid for out of appropriations granted in previous years. The house committee on foreign affairs estimated that at the end of fiscal 1952 nearly \$9,000,000,000 of unexpended aid appropriations was on hand, but all but about \$400,000,000 had been obligated in one way or another.

The Mutual Security act of 1952 extending the aid program and the life of the MSA for another year passed the house of representatives in final form on June 5 (230-115), the senate on June 9 (59-11) and was signed by the president on June 20. The new law made no fundamental changes in the aid policies defined by the 1951 act. In addition to making some changes in administration and practice, the act added expressions of congressional intent regarding various aspects of the program, for example, the fostering of private investment as a means of increasing the supply of strategic raw materials. After welcoming "the recent progress in political federation, military integration, and economic unification in Europe," congress in a new passage reaffirmed "its belief in the necessity of further vigorous efforts toward these ends. . . ." To encourage such efforts, the new act permitted Mutual Security funds to be granted to NATO, the European Coal and Steel Community created by the Schuman plan treaty, and the organization expected to emerge from discussions of the European Defense Community. Another section of the new act instructed the director of mutual security to withhold aid from any country that was not taking "decisive action to marshal its resources," individually or in co-operation with other countries, for the purposes of mutual security.

Most congressional debate about the act concerned the amount of money to be spent on foreign aid. Pres. Harry S. Truman, in a message to congress on March 6, recommended an appropriation of \$7,900,000,000 for the fiscal year ending June 30, 1953. Of this sum—\$571,000,000 greater than the appropriation for fiscal 1952—about \$5,400,000,000 was to be for military aid, four-fifths of it to European countries. The senate committee on foreign relations, when it reported at the end of April, recommended a cut of \$1,000,000,000 in the authorization, to be applied proportionately to all the items in the president's request. The senate cut the total by \$200,000,000, after defeating an attempt, supported by Sen. Robert A. Taft, to reduce the authorization by another \$1,000,000,000. The house committee on foreign affairs, reporting on May 12, recommended a cut of \$1,000,000,000 in the president's original request, the entire reduction to come out of aid to Europe. On the floor of the house another \$725,000,000 was stricken from the bill, most of the reduction falling on defense support aid to Europe. The house and senate conferees split the difference between the two bills so that in its final form the act authorized somewhat more than \$6,400,000,000 worth of aid. When the money bill reached



WIND TUNNEL at Modane, Fr., for testing airfoils, in use by forces of the North Atlantic Treaty organization in 1952

congress late in June, the house appropriations committee cut \$250,000,000 from the authorizations; the largest part of this sum was to come out of military assistance to Europe and much of the rest was saved by eliminating the proposed contribution of \$45,000,000 to the United Nations Korean Reconstruction agency. The full house then reduced its committee's figures by another \$245,000,000, the largest share again coming from the item for military assistance to Europe. The senate, hurrying to wind up its business, adopted the house's figures. When he signed the appropriation bill on July 15, President Truman called the amount "inadequate" and suggested that additional appropriations might be necessary before the end of the fiscal year.

The table below compares Mutual Security appropriations for fiscal 1953 with the president's requests. In addition to the amounts shown, unexpended funds from previous years were carried over into fiscal 1953. Up to 10% of the funds appropriated for military aid to Europe could be used for economic aid, and vice versa.

MSA funds could be used to purchase military equipment

	President's requests	Congressional appropriations
	(Millions of dollars)	
Europe		
Military	4,145.0	3,128.2
Economic	1,819.2	1,282.4
Near east and Africa		
Military	606.4	499.1
Economic and technical	196.0	181.1
Asia and Pacific		
Military	611.2	540.8
Economic and technical	408.0	270.6
Latin America		
Military	62.4	51.7
Economic and technical	22.0	20.3
Miscellaneous economic and technical assistance	53.8*	27.7
Total military assistance	5,425.0	4,219.8
Total economic and technical	2,499.0	1,782.1
Total mutual assistance	7,924.0	6,001.9

*This includes \$24,000,000 for the United Nations International Children's Emergency fund which did not appear in the president's message on mutual security assistance. Congress cut the figure to \$6,700,000.

manufactured in one western European country for delivery to another. This procedure enabled the manufacturing country to earn dollars and expanded European military production as well as providing cheaper supplies. In the fiscal year ending June 30, 1952, about \$600,000,000 of MSA funds were spent in this way. Another \$84,000,000 of defense department funds were spent in western Europe to procure supplies for United States forces. As procedural difficulties were overcome the volume of offshore procurement was expected to increase. France, where the largest sum was spent, counted on this form of dollar aid to balance its national budget; MSA funds were used to buy military equipment made in France which was then turned over to the French authorities. Difficulties arose during the year as the result of a misunderstanding as to how large a sum the United States had promised to spend for this purpose.

During 1952 there were almost continuous official discussions about trade with the soviet bloc. The Battle act, which replaced earlier U.S. legislation on this subject, came into full effect on Jan. 24, 1952. In the first six months of the act's operations, reported by Averell Harriman, the flow of strategic goods to the U.S.S.R. and its satellites had been regulated by agreement, following consultation with the countries receiving United States aid. Goods of primary strategic importance were completely embargoed, except for a few shipments made under prior contracts. In these cases the president used the discretion allowed him by the act to decide that cutting off aid to the countries making the shipments would be detrimental to the security of the United States because of their other contributions to mutual defense. Goods of secondary strategic significance were shipped to the soviet bloc when that seemed necessary to secure for the shipping countries, mostly in western Europe, supplies of important materials from the "iron curtain" countries.

Most United States aid to western Europe was conceived as part of the rearmament program of the NATO countries agreed on at the Lisbon conference in Feb. 1952. The expected economic impact of this program was a continuous source of con-

cern for most European governments throughout 1952. By diverting men and materials from production of goods for home consumption or export, rearmament was likely to increase balance-of-payments deficits and add to domestic inflationary pressures. Prospects of increasing living standards were jeopardized. United States aid in the form of military end items helped reach the arms goals but as a rule did little to relieve economic pressures. Defense support aid helped both in the manufacture of arms and in relieving some of the pressure on the civilian sector of the economy, but was available only in limited amounts. In order to carry the arms load, provide a satisfactory standard of living and get along with less foreign aid, the countries of Europe had to produce more and had to maintain internal financial equilibrium. During the first half of 1952, industrial production in western Europe was lagging but prices were fairly stable. There was some improvement in the foreign trade position of the area as a whole, compared with the first half of 1951, but the dollar deficit continued to be serious.

In these circumstances the Organization for European Economic Cooperation was devoting much of its energy to studying the problems involved in increasing European production by 25% by 1956. The council of the O.E.E.C., meeting at the ministerial level, on March 28 approved the report of a working party on productivity, trade and payments and financial stability which included special studies of the problems arising in coal, electricity, iron and steel, agriculture, housing, transport and manpower. The report made a number of recommendations about policies member governments might adopt and led to further studies by the O.E.E.C. of continuing problems. One of the most important of these was an examination by seven eminent independent economists of the internal financial situation of a number of countries, with particular attention to Great Britain, France, the United States and Belgium. The experts stressed the importance of monetary measures for bringing about stability, but a ministerial committee that reviewed the report took the view that a country's position might require a greater use of fiscal measures or direct controls.

The principal step forward in economic co-operation under the aegis of the O.E.E.C. was the prolongation on June 30 of the life of the European Payments union for another year. At the same time, a change was made in the terms of the agreement so that countries would have to pay a larger share of their debts to E.P.U. in gold in the early stages of their indebtedness. As a result, the E.P.U. could expect to increase its liquid assets, but debtors were compensated by a reduction in the amount of gold they would have to pay as they approached the limit of their quota. A series of special arrangements were also made with Belgium, Italy, Portugal and Switzerland whereby these countries would continue to grant some credit to the E.P.U. although they had already exceeded the limit of their obligation to do so, and would receive part of their future surpluses in gold. Fearful of the future strain on their resources, the E.P.U. managing board had hoped to secure additional dollar aid from the United States but the MSA refused the request.

France and Britain, at one time major creditors of the E.P.U., continued to be its debtors during 1952. France got a short-term credit of \$100,000,000 to relieve the pressure on its gold supply during the second quarter of the year, and repaid the loan in June. Britain exceeded its quota in May and thereafter had to pay its debts to the E.P.U. fully in gold. The tendency for countries to get into extreme positions caused difficulties for the E.P.U., but in mid-1952 there seemed to be some levelling off in the positions of a number of countries.

This improvement was in part the result of monetary measures taken in a number of countries to check inflationary



"I'VE GOT A RICH UNCLE!" a cartoon by Justus published in 1952 in the *Minneapolis Star*



EMBERG DAM at Kaprun in Salzburg, Aus. The concrete arch power dam, built with Marshall plan aid, formed a great water reservoir in the Austrian Alps.

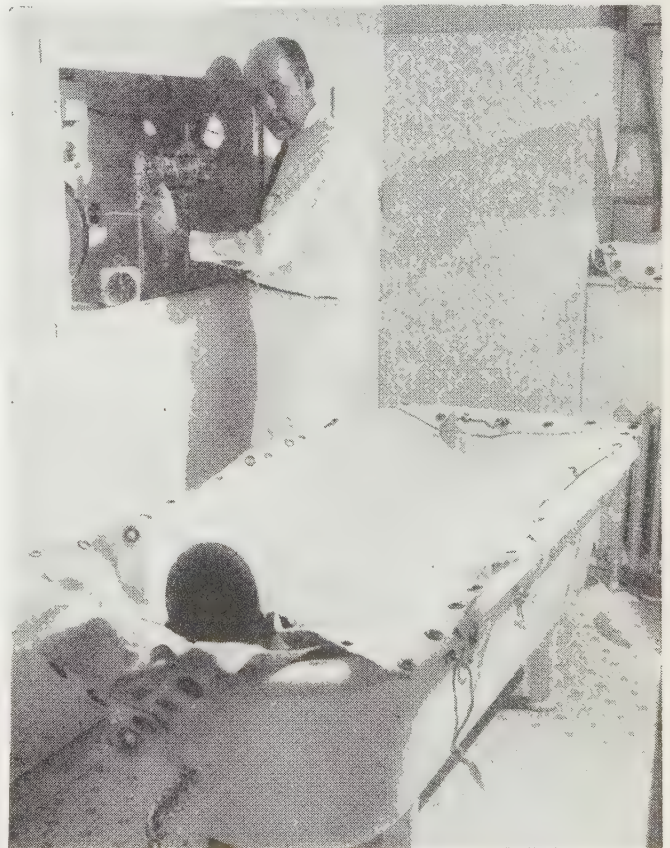
pressures. In the case of France and England, however, limitations on imports from other O.E.E.C. countries, taken originally in 1951, were somewhat intensified during 1952. Some other countries, including Germany, Italy and the Netherlands, were able to remove restrictions on imports, and by September these three countries and Belgium, Ireland, Norway, Portugal, Sweden and Switzerland had reached the O.E.E.C. goal of permitting the quota-free entry of 75% of their imports from other O.E.E.C. countries (measured by 1948 trade). A steering board for trade was created by the O.E.E.C. to deal with the problems of trade liberalization.

The greatest step forward in European economic co-operation during 1952 was taken outside the O.E.E.C. The Schuman plan treaty, creating a European Coal and Steel Community, was ratified, and the Community's principal organs were set up and started work. How fast they would proceed to create a single market and a co-ordinated investment program for the iron, coal and steel industries of France, Germany, Belgium, the Netherlands, Luxembourg and Italy depended in part on the fate of the treaty creating a European Defense Community including these countries and on the ability of France and Germany to reach some understanding on the Saar.

As the year drew to a close there were more and more indications that in all major capitals discussions were under way to find some method of reducing western Europe's dependence on United States aid and of making the military alliance of NATO an effective machine for dealing with common political and economic problems. "Trade, not aid" was the slogan put forward by R. A. Butler, the British chancellor of the exchequer. Effective action of whatever sort would depend largely on the United States, where a new administration, coming into office in Jan. 1953, would be faced with old problems in a new guise. (See also EUROPEAN UNION; NORTH ATLANTIC TREATY ORGANIZATION.) (W. DD.)

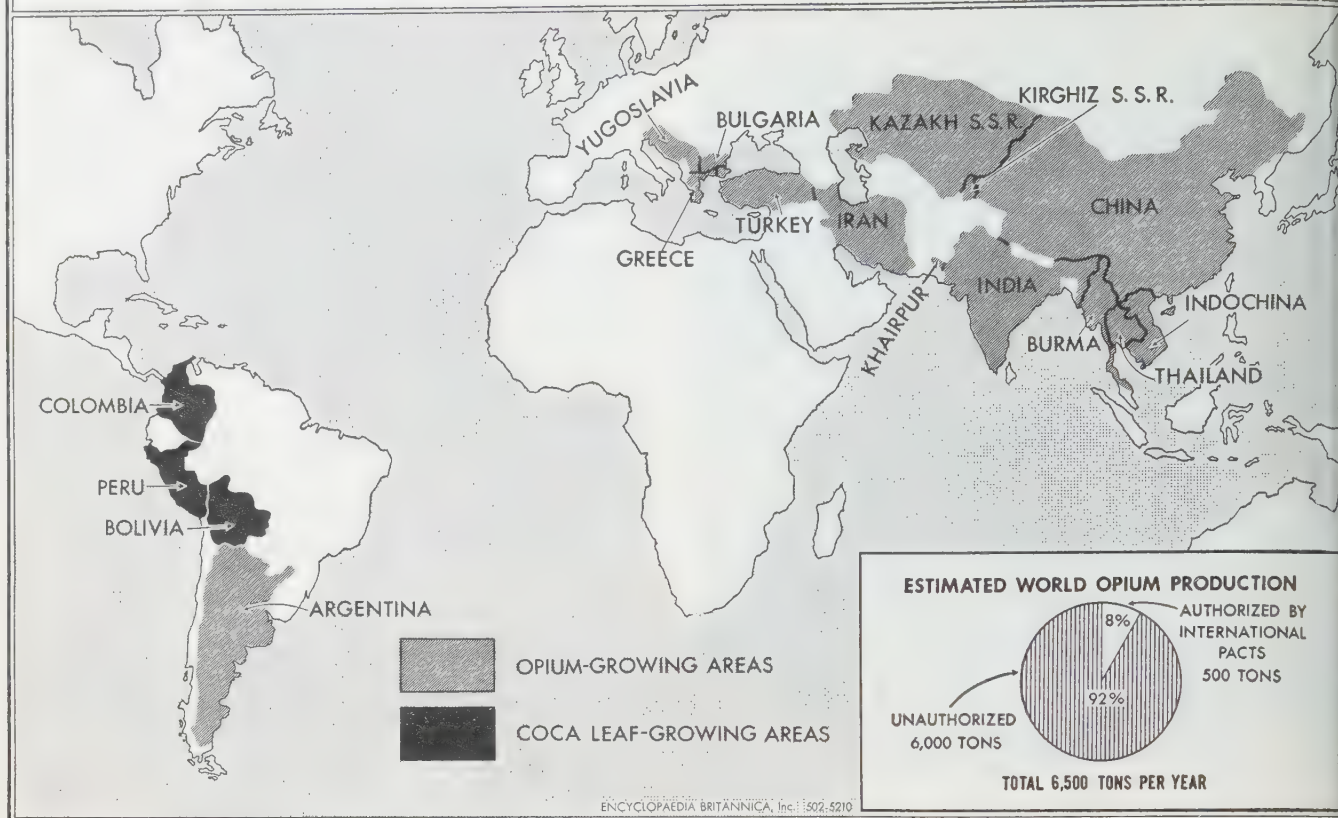
Naguib, Mohammed (1901-), Egyptian soldier and statesman, was born at Khartoum. He attended the Royal Military academy, Cairo, and was commissioned at the age of 19. During World War II Naguib was occupied with administrative duties. More active service followed in the war with Israel when he became a brigadier in command of a machine-gun and infantry regiment and won a reputation for leadership and courage. When the army's smouldering discontent about corruption in palace and government circles burst into flame in July 1952, Naguib was chosen as leader of the coup d'état. On July 23 King Farouk's palace was surrounded and all approaches to Cairo were guarded. Within a few hours the king was forced to abdicate and leave the country. Naguib made Aly Maher prime minister and announced the army's demands for reform, which were to affect not only political circles—particularly the Wafd, the principal political party—but also itself. Immediately he was bitterly opposed by the Wafd. On Sept. 7 Aly Maher resigned and Naguib became prime minister and minister of war and marine. In Cairo on Oct. 29 he signed, on behalf of the Egyptian government, an agreement with the Sudanese political parties, the text of which implied *de facto* recognition of the 1899 condominium agreement unilaterally abrogated by Egypt in 1951.

Narcotics and Narcotic Traffic. During the seventh session of the United Nations Commission on Narcotic Drugs, held in New York city in 1952, facts and figures were presented to the commission indicating that the international illicit traffic in narcotic drugs had increased dangerously. The commission recognized that strong efforts would have to be made immediately to cope with the problem, and recommended that the Economic and Social council request the U.N. secretary-general, Trygve Lie,



FLOW BATH for a patient in a government hospital for drug addicts at Lexington, Ky. Convalescents, following the withdrawal of drugs, were helped by baths in which a steady flow of hot water relaxed taut muscles; the canvas cover was for violent patients.

WORLD NARCOTIC-PRODUCING AREAS



1. To advise governments that this baneful trade cannot be combated successfully by national efforts alone, and that international co-operation is of essential importance;

2. To urge governments to take immediate steps, if they have not already done so, to adopt the practice of direct communication between national administrations controlling the illicit traffic; if within a country where more than one department exercises control thereof, the government concerned shall determine the channel through which such communication is to be conducted; and

3. To ask governments to review their preventive organizations to ensure that they are adequate to combat the illicit traffic within their territories.

The United States representative, H. J. Anslinger, reported that investigations, arrests and seizures in Japan proved conclusively that Chinese Communists had been smuggling heroin from China to Japan, and using the proceeds from the sale thereof to finance party activities and obtain strategic materials for China. While the source of all heroin seized in Japan was attributed to China, transhipped through Hong Kong or North Korea, approximately 50% of the total seized was either definitely labelled with a Chinese address as the source or else marked with well-known brands of Chinese heroin. Other seizures were traced by the statements of arrested Communists who stated the heroin was sold to raise funds for party activities. Still others were traced by the fact that large-scale traffickers who were arrested were closely associated with known smugglers of war materials to and from China.

These facts refuted the statements made by the soviet representative on the U.N. Commission on Narcotic Drugs, and proved that Communist China had been flooding Japan and other countries with opium and heroin.

The representatives of the Union of Soviet Socialist Republics and Poland voted almost invariably against all decisions and recommendations of the commission.

Important achievements of the commission during the 1952 session included:

1. Completion of the study of the principles embodied in the first 13 articles of the proposed international single convention on narcotic drugs.

2. Adoption of a resolution relating to synthetic drugs which recommended that the Economic and Social Council request the secretary-general to draw the attention of governments to the desirability, should they not already have done so, of

a. Bringing all synthetic narcotic drugs under their national legislation on narcotic drugs as soon as they appear;

b. Acceding without delay to the protocol of Nov. 19, 1948;

c. Limiting their estimates of such drugs to medical and scientific requirements;

d. Exercising strict control over the manufacture and therapeutic use of these substances; and

e. Making regulations to ensure that all packages containing a synthetic narcotic drug should be clearly marked with a double red line so that they may be identified by the competent services.

3. The adoption of a resolution which contained the recommendations of the commission to the Economic and Social Council on the report of the Commission of Inquiry on the Coca Leaf.

4. The adoption of a resolution (set forth in 1, 2 and 3 in the first paragraph of this article) relating to international co-operation to control the illicit traffic in narcotics.

5. The adoption of a resolution relating to the illicit trafficking in narcotics by the crews of merchant ships and civil aircraft.

Penalty Amendment to Federal Narcotic Laws.—In 1950 Congressman Hale Boggs of Louisiana introduced in congress a bill to provide increased penalties for violation of the federal narcotic and marihuana laws, particularly for second and subsequent violators. Late in 1951 congress passed the Boggs bill and the president signed it on Nov. 2, 1951.

Immediately after passage of the Boggs act, the bureau of narcotics started a nation-wide intensified effort aimed at second and third offenders. There were indications during the early part of 1952 that the increase in teen-age drug addiction had been halted. Another effect of the Boggs act was a noticeable shift by narcotic traffickers to other rackets, following the sentencing of a number of second and third offenders to long prison terms. Legislation similar to the Boggs act was enacted by several of the states as an amendment to their uniform state law. In Maryland, where this state legislation had been in effect for some months, the illicit narcotic traffic had been very substantially reduced. (See also DRUG ADMINISTRATION, U.S.; LAW.)

(H. J. A.)

National Academy of Sciences: see SOCIETIES AND ASSOCIATIONS, U.S.

National Association for the Advancement of Colored People: see SOCIETIES AND ASSOCIATIONS, U.S.

National Association of Manufacturers: see SOCIETIES AND ASSOCIATIONS, U.S.

National Association of State Libraries: see SOCIETIES AND ASSOCIATIONS, U.S.

National Budget: see BUDGET, NATIONAL.

National Bureau of Standards: see STANDARDS, NATIONAL BUREAU OF.

National Catholic Community Service: see SOCIETIES AND ASSOCIATIONS, U.S.

National Catholic Welfare Conference: see SOCIETIES AND ASSOCIATIONS, U.S.

National Congress of Parents and Teachers: see SOCIETIES AND ASSOCIATIONS, U.S.

National Debt: see DEBT, NATIONAL.

National Education Association: see SOCIETIES AND ASSOCIATIONS, U.S.

National Gallery of Art: see SMITHSONIAN INSTITUTION.

National Geographic Society. Astronomers of the National Geographic society-Palomar observatory sky survey in July 1952 entered the fourth year of their project of mapping the heavens with the 48-in. Schmidt wide-angle phototelescope. Their "portrait of creation" was more than half completed. A tailless comet of 15th magnitude in the constellation Cepheus, revealed on a plate exposed Aug. 18, was the sixth such discovery made by the survey. The photographic plates as completed continued to reveal hitherto unrecorded clusters of nebulae up to 350,000,000 light-years out in space and to contribute evidence on the birth and death of stars. The sky atlas, to consist of 1,870 photographs from separate plates, was expected to provide astronomers enough material for a century of study. Palomar's 200-in. Hale telescope was already being turned on interesting objects found on the sky survey plates.

Complementing the sky survey, a photographic sky chart detailing the southern Milky Way was completed in 1952 by Francis J. Heyden of Georgetown University observatory. Its 17 plates were made by phototelescope at Bocaiuva, Braz., by Father Heyden as a member of the U.S. army air forces-National Geographic society expedition studying the sun eclipse of May 20, 1947.

At Khartoum, Anglo-Egyptian Sudan, on Feb. 25, 1952, George Van Biesbroeck, representing the society, photographed the star field immediately surrounding the sun during the three minutes of eclipse totality. Returning to Khartoum six months later, he photographed the same star field at the same declination at night. Comparison of the photographs was expected to provide a check on the "Einstein shift"—an apparent displacement in the position of distant stars resulting from the sun's gravitational pull on the rays of star light passing close by.

Infant bluefin tuna and wahoo less than one-half inch long were noted among specimens netted in the Gulf Stream east of Miami by scientists of the National Geographic society-University of Miami study of ocean plankton. Their presence pointed to a spawning area of these two game fish in the northern part of the Caribbean sea. The research, begun in mid-1950 and using the laboratory ship "Megalopa," had traced the Florida lobster through 11 stages of growth during the six months it drifts before settling to the bottom as a lobsterling. The study was adding important clues to the movement of ocean currents.

The continuing National Geographic society-Bartol Research

foundation cosmic ray study program directed by Bartol physicist Martin A. Pomerantz in 1952 further correlated earthly cosmic ray intensity with the occurrence of solar flares and other violent activity on the sun, pointing to the sun as a source of cosmic rays. On Sept. 2, Pomerantz left for India to conduct eight months of cosmic ray field research from a base at Aligarh Muslim university, near New Delhi.

The first United States expedition of naturalists to the Fort Archambault region of French Equatorial Africa and French Cameroun in May and June, included National Geographic staff artist-naturalist Walter A. Weber and staff photographer Volkmar Wentzel. It brought back bird and mammal specimens for the Smithsonian institution and the American Museum of Natural History. The party was led by its principal sponsors, Dr. and Mrs. Carnes Weeks of Mt. Holly, S.C.

The society cosponsored a British summer study of the geology and glaciology of Norway's West Spitsbergen Island with Cambridge university, the Royal Geographical society of London and the Scott Polar Research institute, Cambridge.

Gilbert Grosvenor, president of the National Geographic society, received the Samuel Finley Breese Morse medal of the American Geographical society at that group's centennial celebration in New York city on Aug. 5.

Published in the *National Geographic Magazine* during 1952 were about 1,100 colour pictures—760 full pages—of peoples, places and natural history subjects throughout the world.

Four large ten-colour wall maps, drawn by the society's cartographers, were distributed as 1952 supplements to the magazine. Subjects were North America, southwest Asia, the far east and the Pacific ocean.

The society late in 1951 published *Stalking Birds with Color Camera*, a 328-page book containing 331 natural-colour photographs of North American birds. Text and pictures were largely the work of Arthur A. Allen of Cornell university, Ithaca, N.Y. A new enlarged edition of the *Book of Fishes* was scheduled for late 1952 publication. A new *National Geographic Magazine* cumulative index in two volumes, 1899-1946 and 1947-51, issued during the year, included a pictorial story of the society's scientific activities and its magazine.

News releases describing National Geographic-sponsored researches or supplying timely news background information on world areas suddenly coming into prominence were again sent regularly by the society's news service to daily newspapers, press associations and radio news staffs throughout the country requesting the service. Special maps accompanied some of the news releases. Geographic school bulletins continued to be sent for classroom use during the school year to about 35,000 teachers.

The society's membership at the year's end numbered 2,015,000 family units. Its headquarters address is 16th and M streets N.W., Washington 6, D.C. Officers: president and editor, Gilbert Grosvenor; vice-president and associate editor, John Oliver La Gorce; secretary, Thomas W. McKnew; treasurer, Robert V. Fleming. The society's research committee: chairman, Lyman J. Briggs; vice-chairman, Alexander Wetmore. (G. Gr.)

National Guard. During 1952 the national guard played a major role in the defense structure of the United States, with approximately 400,000 guardsmen in about 5,400 units in state and federal service.

More than 2,000 army and air guard units were in active military service, including 8 infantry divisions, 3 regimental combat teams, numerous nondivisional units and 22 air guard wings. Four national guard infantry divisions were serving overseas: the 28th division of Pennsylvania and the 43rd of Connecticut, Rhode Island and Vermont in Europe; the 40th

division of California and the 45th of Oklahoma in Korea. Numerous other army and air guard units served in Europe, the far east and other far-flung bases.

In addition, individual guardsmen specialists were serving in all branches of the army and air force around the world. Overall, approximately 150,000 officers and men of the national guard were in active military service.

In 1952 a number of national guard units and thousands of individual guardsmen started to return to civilian life and state control. Large-scale return of air guard units started in July and virtually the entire 80% of the air national guard that had been ordered to active military service was scheduled to be back in state status by the early part of 1953, with the bulk of the approximately 450 air units back by the end of 1952.

Congress passed legislation authorizing the retention of army national guard unit designations on active military service beyond the two years of active service required of national guardsmen. The states were authorized to organize parallel units for those kept on active military service to absorb national guardsmen returning to state service and for the training of new recruits.

Release from active military service of national guard anti-aircraft artillery units was announced by the department of defense, beginning in April 1952, as a means of increasing the anti-aircraft defenses of the United States. To bring these units to full strength, age requirements for original enlistments and re-enlistments in nondivisional national anti-aircraft artillery units were liberalized.

During 1952 approximately 200,000 army guardsmen and about 10,000 members of the air national guard participated in annual 15-day field training exercises, and a record attendance at field training and armoury-air base training was set.

National guardsmen again responded to local requests during emergencies such as floods, tornadoes and other domestic crises. They continued to train under an intensified program as members of first-line components of the armed forces with definitely established M-day missions.

(R. H. FL.)

National Income and National Product: see INCOME AND PRODUCT, U.S.

National Insurance: see SOCIAL SECURITY.

Nationalization of Industries: see COAL; GREAT BRITAIN AND NORTHERN IRELAND, UNITED KINGDOM OF; IRAN; RAILROADS; PUBLIC UTILITIES.

National Labor Relations Board. During the fifth year of administering Title I of the Labor Management Relations act (commonly known as the Taft-Hartley law), the National Labor Relations board again received a record number of both representation and unfair labour practice cases. These two types of cases constituted all but a small portion of the work handled by the board. During the 1952 fiscal year 15,900 of these cases were filed: 10,447 were petitions for representation elections and 5,453 involved charges of unfair practices against either employers or unions or both.

In this period the board also conducted the largest number of representation elections in its history: 6,873. More than 86% of the 791,000 eligible employees cast valid ballots. A majority of employees voted for union representation in 4,808 of these elections, or 69%. This compared with 74% in favour of union representation during fiscal year 1951, with 73% in 1950 and with an average of 81% under the Wagner act from 1935 to 1947.

The five-member board issued 2,506 formal decisions during the 1952 fiscal year: 315 in unfair labour practice cases and

2,191 in representation cases.

Important questions involved in the decisions by the board during the year included: (1) the extent of an employer's right to lay off, or to "lock out" employees during a collective bargaining dispute; and (2) the types of electioneering or "campaign tactics" which an employer or a union may use.

On the question of whether an employer may lock out employees, the board held that the statute declares these general principles: an employer may shut down a plant for genuine economic reasons, such as a decline in business, or for other reasons not connected with the union activity of his employees. But the law forbids a shutdown which is intended to defeat or curtail the employees' activities in union organization or in collective bargaining, unless the employees' activities in these areas make operation of the plant extremely difficult. Thus, a majority of the board held in two cases that an employer violated the act by locking out his employees in order to require them to accept his terms in collective bargaining.

The board ruled in these cases that an employer may not use a lockout either: (1) to break a deadlock in bargaining with the employees' representative; or (2) to counter union actions which he believes are undermining his bargaining position. The two cases presented nearly identical situations. In each, a group of employers, bargaining together through an association, had bargained in good faith with the employees' union to a deadlock. Thereupon, the union members at the plant of one employer in the group went on strike. There was no threat to strike any other employer, but the other employers viewed the strike at one plant as part of a strategy by the union to undermine the bargaining position of the employer group, by calling a strike against the individual employers in turn. To defeat this anticipated strategy, the employers whose plants were not struck laid off their employees for about a month in each instance. A board majority (Chairman Paul M. Herzog dissenting) ultimately held that these lockouts collided directly with the act's guarantee to employees of the right to engage in union activities without interference by the employer. Moreover, the board ruled, such a layoff of nonstriking employees was prohibited by the section of the law which forbids an employer to discriminate against employees because of their union activities.

In another case, union members engaged in brief, recurrent work stoppages as part of a campaign to obtain 100% organization in the plant. These stoppages, although limited to a few employees in a few departments, were disrupting work throughout the plant because of the close integration of operations. The board held, by a divided vote, that the employer was justified in shutting down the plant until he had obtained a no-strike pledge from the union. In another case, the board held that a group of automobile dealers were justified in locking out their mechanics because of the union's threat to strike the dealers' repair shops without notice. The board found that the strike threat created such uncertainty about future operations as to justify the lockout, in view of the fact that a sudden strike was likely to tie up customers' automobiles while under repair. In this case, union members at two companies had already struck.

The legal propriety of other tactics which a union or employer may use in economic contests and in election campaigns was at issue in a number of cases. A majority of the board (Member Abe Murdock dissenting) ruled that an employer could lawfully discharge employees who circulated handbills attacking the quality of the employer's product. The handbills were circulated as part of a campaign to compel the employer to meet the contract terms sought by the union, but they did not bear the union's name or state that they were related to a labour dispute. The circulars asserted that the employer, a televi-

station, was offering only "second-class" programs. The majority held that, in circulating such an attack on the product, the employees "went beyond the pale" of those concerted activities which are protected by the act.

A number of cases concerned the conditions under which an employer might make an antiunion speech to his employees during working time. The leading case involved a department store, where the company president assembled the employees on store premises during their paid time, to deliver a speech urging them to vote against a union. The speech was given only a few days before the board election, in which the employees were to vote on whether or not they wanted union representation. When the union requested a similar opportunity to speak to the employees, the company refused it. Union solicitation had long been banned in the store. A majority of the board (Member James J. Reynolds, Jr., dissenting) held that the refusal of speaking time to the union interfered with the rights guaranteed to employees. The board directed the employer to accord the union an equal opportunity to speak to the employees, if in the future its officials delivered preelection addresses during working hours on company premises. The board held that: "An employer who chooses to use his premises to assemble his employees and speak against a union may not deny that union's reasonable request for the same opportunity to present its case, where the circumstances are such that only by granting such request will the employees have a reasonable opportunity to hear both sides." Noting the existence of the general no-solicitation rule in the store, the U.S. court of appeals which reviewed the board's decision upheld it. The board also applied this doctrine in a number of representation election cases, where employers had made antiunion speeches on company time and premises just before a board election and then denied the union employees an equal opportunity for reply.

The legality of other types of union or employee activity was before the board in other cases. In one, the board reaffirmed its long-established rule that an employer may discharge employees who engage in an illegal strike. A board majority held in this case that the union had called the strike to compel the employer to agree to a contract providing unlawful preference for union members. In other cases, the board ruled that employers violated the law by discharging employees who (1) complained to other employees about the amount of work required by the employer, or (2) endeavored to persuade fellow employees to join in bringing a suit for back pay under the Wage and Hour law.

During 1952 Ivar H. Peterson was appointed to the board by Pres. Harry S. Truman, to fill the unexpired term of James J. Reynolds, Jr., who had resigned to return to private industry. In Sept. 1952 the board was composed of Chairman Paul M. Herzog and Members John M. Houston, Abe Murdock, Paul Styles and Peterson, with George J. Bott as general counsel. (See also LABOUR UNIONS; LAW; STRIKES.) (P. M. HG.)

National Museum: see SMITHSONIAN INSTITUTION.

National Parks and Monuments. United States.—Approximately 17,000,000 visitors were recorded at the 28 national parks of the United States in the 12-month period ended Sept. 30, 1952, and another 24,500,000 at other areas administered by the national park service of the U.S. department of the interior. The overall travel was 13% greater than that of a year earlier.

Small increases in protective staffs in some parks and monuments were more than offset by the additional work resulting from the increased public use. Roadside cleanup was reduced in several western national parks by the distribution of trash

bags to motorists who were requested to make use of them during their stay. A reduction in the cleanup problem, as well as in vandalism, also followed publication of an article in *Natural History Magazine* regarding the damage being wrought by what the author aptly termed "The Great American Litterbug." *Natural History Magazine* also supplied, for distribution to motorists, stickers bearing the slogan "Don't Be a Litterbug," for placement on the rear side window of their automobiles.

During 1952, a number of important donations were made to assure preservation of important scenic and historic properties as part of the national park system. The largest donation, totaling \$1,236,000, was for the acquisition of lands for the Cape Hatteras national seashore recreation area, N.C. Half of this sum was donated by the Avalon and Old Dominion foundations, set up by the children of Andrew W. Mellon; the other half was made available by the state of North Carolina. In 1937 congress authorized establishment of the national seashore recreation area, to include about 30,000 ac. of ocean front, unspoiled by commercial or other unsightly developments. Not far distant are two units of the national park system—Kill Devil Hill National memorial, where the Wright brothers made their memorable flight, and Fort Raleigh National Historic site, scene of the first attempt by the English to settle within the United States.

Linville Falls, in western North Carolina, and adjacent land became part of the Blue Ridge National parkway as a result of a \$95,000 donation by John D. Rockefeller, Jr., for purchase of the property. Jackson Hole Preserve, Inc., gave 800 ac. for inclusion in Grand Teton National park, Wyo.

Preservation of the site of Fort Caroline in Florida was virtually assured by the donation of approximately \$40,000 by Charles E. Bennett of Florida and others, to match funds made available by congress. Fort Caroline was the site of a 16th-century French Huguenot settlement. Part of the donated funds were earmarked for archaeological investigations.

Among other significant donations were 600 ac. for the Blue Ridge National parkway by the commonwealth of Virginia; 400 ac. for the Natchez Trace National parkway, by the state of Mississippi; and 35,000 ac. given by the Collier corporation to the state of Florida for eventual inclusion in Everglades National park, Fla.

The Harpers Ferry National Monument project in Maryland-West Virginia was brought nearer to completion when the state of West Virginia, with a \$350,000 appropriation, began acquiring approximately 400 ac. within the project, and the state of Maryland appropriated funds to acquire the 900 ac. comprising its portion of the project.

Three new areas were established during the year—Chicago Portage National Historic site, Ill.; Virgin Islands National Historic site, Saint Croix, V.I.; and Shadow Mountain National Recreation area, Colo.

The most spectacular occurrence of the year was the eruption, after 18 years of quiescence, in Halemaumau, firepit of Kilauea volcano, Hawaii National park. During the first few days of the eruption, 70,000 persons came to witness the activity, most of them arriving after dark, since the eruption was more spectacular at night.

Other noteworthy developments and activities of the year included purchase of the holdings of the Rainier National Park company, which for years had operated concession facilities in Mount Rainier National park, Wash.; greater public interest in the scenic qualities of Dinosaur National monument, Utah-Colo., as evidenced by increased popularity of exploratory boat trips down the scenic Green and Yampa canyons; dedication of the new museum at Custer Battlefield National monument, Mont.; and the appointment by Secretary of the Interior Oscar

L. Chapman of Horace M. Albright, a former director of the national park service, and John O. Brew, director of the Peabody Museum of Archaeology and Ethnology of Harvard university, to the advisory board on national parks, historic sites, buildings and monuments. (C. L. Wl.)

England and Wales.—The National Parks commission designated the North York Moors national park in Feb. 1952 and initiated action which would lead to the setting up of national parks in three further areas—Cornwall, Exmoor and the Yorkshire dales. A new long-distance route (*i.e.* proposed continuous right of way) was approved by the minister of housing and local government, the Cornish North Coast path (135 mi.), which would be largely within the Cornish national park. A loop route on easier ground was added in the Peak District national park to part of the Pennine Way long-distance route (250 mi.). The commission examined the proposals of the British Electricity authority for the extension of hydroelectric schemes at Dolgarrog and Maentwrog in Snowdonia and secured the inclusion, in the private act of parliament authorizing these extensions, of several important safeguards to the natural beauty of the area and its features of special scientific interest; notably provision for the appointment by the electricity authority, after consultation with the commission, of a landscape consultant to advise on spoil disposal, land restoration, etc.

Australia.—*New South Wales.*—Approval was given to a proposal to set up Warrumbungle national park (8,900 ac.), part of the Warrumbungle range (4,000 ft.) in the western part of the state. The area has high scenic value and is of geological interest.

Queensland.—Three additional national parks were set up: Mt. Spec (Townsville), 18,500 ac. of mountain, forest and jungle; Mt. Aberdeen (Bowen), 4,120 ac., a peak in the jungle commanding wide vistas; and Mt. Maria (Innisfail), 800 ac., a high jungle overlooking the sea. The reserved areas totalled 7,650,000 ac. The total number of visitors to the reservations during the year was 250,000.

Tasmania.—Scenic reserves were increased by 6,344 ac., which included a coastal strip of 100 mi. at the fiord of Port Davey and a camping area on the Derwent river at New Norfolk; the total national scenic reserves were thus brought to 527,720 ac. A road was built to open up skiing grounds in the Ben Lomond national park.

Canada.—The national parks were visited by 2,115,000 people during the summer, an increase of about 12% over 1951. Roads and tracks were maintained and extended, 226 mi. of highway hard surfaced, new walks, bridges and fire roads made.

Italy.—The directors of the Gran Paradiso national park (243 sq.mi.) contested a proposal to erect an overhead cable across part of the park, and secured a suspension of the proposal in order to permit further negotiation. Several special studies in biology, entomology and physiography were carried out in the park by the University of Turin. Plans were made for the establishment in 1953 of an alpine biological station, with a laboratory, at Cogne in the park.

Northern Rhodesia.—The build-up of flora and fauna in the Kafue national park was satisfactory. Busk tracks were made in the southern (Namwala) and northern (Kasempa) sections in preparation for limited opening of those areas in Aug.–Sept. 1953.

Southern Rhodesia.—New national parks were proclaimed at Victoria falls (207 sq.mi.), Zimbabwe (3 sq.mi.) and Mtarasi falls (7 sq.mi.), and the Robert McIlwaine national park (22 sq.mi.) was scheduled for proclamation. These additions brought the number of national parks and game reserves to seven, with a total area of 5,649 sq.mi. In the Wankie game reserve (5,249 sq.mi.) facilities for tourists were improved and water sup-

plies for game increased with boreholes and dams.

Tanganyika.—Regulations were prepared for the administration of the Serengeti national park (4,880 sq.mi.) which would include arrangements to charge 10s. a vehicle and 5s. a person for entry permits. (*See also* TOURIST TRAVEL.) (H. M. As.)

National Science Foundation: *see* SOCIETIES AND ASSOCIATIONS, U.S.

National Shipping Authority: *see* SHIPPING, MERCHANT MARINE.

National Temperance League, Inc.: *see* SOCIETIES AND ASSOCIATIONS, U.S.

National Wealth: *see* WEALTH AND INCOME, DISTRIBUTION OF.

Natural Gas: *see* GAS, NATURAL AND MANUFACTURED.

Naturalization: *see* ALIENS.

Nauru: *see* TRUST TERRITORIES.

Navies of the World. At the end of 1952 there were two great navies, those of the United States and of Great Britain. Other major fleets were those of the U.S.S.R., France and Italy, followed by Sweden, the Netherlands, Turkey, Spain, Australia, Canada, Argentina, Brazil and Chile. There were also no fewer than 42 not so well-balanced and lesser navies. Several of the smaller countries continued to add to their naval strength by acquiring small warships from the United States and Great Britain. The comparative strengths in ships, of and above the escort vessel categories, of the navies of the world were as shown in the table on page 495.

The principal trends in the navies of the larger maritime powers in 1952 were the building of large numbers of coastal and inshore minesweepers, the adaptation of large destroyers as fleet antisubmarine escorts, the conversion of smaller destroyer types into fast antisubmarine frigates, the reconstruction and conversion of aircraft carriers to operate larger and faster aircraft and an increase in the speed and underwater endurance of submarines.

Among the naval events of the year which shocked and stirred the world were the loss of 176 officers and men when the United States destroyer minesweeper "Hobson" was cut in halves by the United States aircraft carrier "Wasp" in the Atlantic on April 26; the disappearance of the French submarine "La Sibylle" with her crew of 48 on Sept. 24; and the explosion of Great Britain's first atomic bomb in the Monte Bello Islands off Australia in which the British frigate "Plym" was expended on Oct. 3. Several large-scale international naval exercises were carried out by North Atlantic Treaty organization countries, including Exercise "Beehive II" in the Mediterranean and Exercise "Castanets" and Exercise "Mainbrace" in western and northern European waters, respectively.

Many British warships were concerned in the Korean campaign and others were called upon to deal with the emergencies in the middle east. Many United States, Australian, Canadian and New Zealand warships were active in the Korean theatre.

United States Naval Strength.—A giant aircraft carrier of 59,900 tons, named "Forrestal," was laid down. Twelve aircraft carriers of the "Essex" class were converted on lines similar to the newly completed "Oriskany" and the recently converted "Essex" to enable them to operate heavier aircraft. At the end of 1952 all four of the "Iowa" class battleships were in commission. Four heavy cruisers and 17 destroyer escorts which had been on the disposal list since the end of World War II were restored to the navy list and placed in the reserve fleet. The United States navy comprised 28 fleet aircraft carriers, 8 light fleet carriers, 66 escort carriers, 15 battleships, 2 battle cruisers, 29 heavy cruisers, 43 light cruisers, 348 destroyers, 269 escort

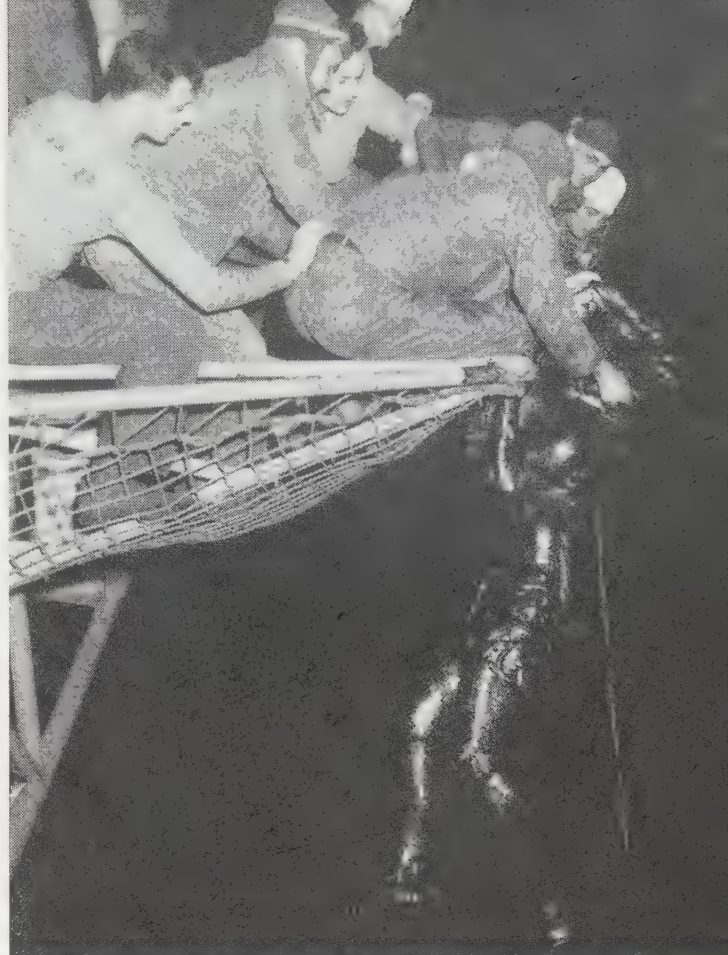
destroyers and frigates, 200 submarines, 219 minelayers and minesweepers, 148 patrol vessels, 950 amphibious craft, 675 fleet auxiliaries and 1,800 service craft, a total of 4,800 vessels.

British Naval Strength.—Late in 1952 there were six fleet aircraft carriers, six light carriers and one escort carrier. The newly built large fleet aircraft carrier "Eagle" was accepted into the royal navy on March 1. Progress was made with the construction of the light fleet carriers "Albion," "Bulwark" and "Centaur," but the remaining ship of the class, the "Hermes," was not launched. The light carriers "Hercules" and "Leviathan" were still suspended. Of the five surviving battleships, only one was in commission at the end of the year, the "Vanguard" being flagship of the home fleet and the four of the "King George V" class relegated to reserve and laid up in a state of preservation.

There were 26 cruisers including a cadets' training ship and a trials ship. No building progress was made with the cruisers "Blake," "Defence" and "Tiger." Destroyers numbered 93, excluding 15 under conversion to fast frigates and 4 large destroyers of the "Daring" class being completed. There were 165 frigates and 53 submarines, excluding 4 midget submarines. Other vessels included 3 fast minelayers, 3 aircraft maintenance carriers, 2 monitors, 60 ocean minesweepers and many coastal craft, miscellaneous ships and auxiliaries.

Commonwealth.—Australia had a compact navy including a light fleet carrier (a sister ship was under construction in Great Britain, and until it was completed the British government was lending a similar ship), 3 cruisers, 5 destroyers (4 more under construction), 5 fast antisubmarine frigates under conversion from destroyers, 14 frigates and 32 fleet minesweepers.

Canada also had a well-balanced navy of 1 light fleet carrier (lent from Britain and to be replaced by a new ship, the



HAULING UP a survivor from the minesweeper "Hobson" after it was rammed by the U.S. carrier "Wasp" and sank with 176 of its crew. The collision took place during mid-Atlantic night manoeuvres in April 1952. This survivor was coated with fuel oil from the "Wasp's" ruptured tanks

Navies of the World, Dec. 1952

	Fleet air- craft Car- riers	Light air- craft Car- riers	Escort air- craft Car- riers	Battle- ships	Cruis- ers	Coast defense ships and mon- itors	Destroy- ers	Frigates and Escort types	Sub- ma- rines
United States	28	8	66	15	74	1	348	269	200
Great Britain	6	6	4	5	26	2	93	165	53
U.S.S.R.	—	—	—	3	14	3	85	64	370
France	—	2	1	2	5	—	9	28	12
Italy	—	—	—	2	3	—	3	43	—
Sweden	—	—	—	—	4	3	12	9	24
Netherlands	—	1	—	—	2	—	6	10	7
Turkey	—	—	—	—	1	—	10	—	11
Spain	—	—	—	—	6	—	20	12	6
Australia	—	1	—	—	3	—	10	14	—
Canada	—	1	—	—	2	—	11	24	—
Argentina	—	—	—	2	5	1	11	11	3
Brazil	—	—	—	1	2	—	9	8	3
Chile	—	—	—	1	2	—	6	6	7
New Zealand	—	—	—	—	2	—	—	6	—
Peru	—	—	—	—	2	—	1	6	4
Greece	—	—	—	—	1	—	3	19	4
India	—	—	—	—	1	—	3	5	—
Norway	—	—	—	—	—	—	5	14	9
Portugal	—	—	—	—	—	—	5	8	3
China	—	—	—	—	—	—	7	23	—
Pakistan	—	—	—	—	—	—	3	3	—
Poland	—	—	—	—	—	—	2	—	4
Thailand	—	—	—	—	—	1	—	4	4
Dominican Rep. . . .	—	—	—	—	—	—	2	9	—
Rumania	—	—	—	—	—	—	2	—	1
Colombia	—	—	—	—	—	—	2	2	—
South Africa, Union of	—	—	—	—	—	—	1	4	—
Indonesia	—	—	—	—	—	—	—	10	—
Egypt	—	—	—	—	—	—	—	8	3
Denmark	—	—	—	—	—	—	—	4	3
Yugoslavia	—	—	—	—	—	—	—	7	—
Mexico	—	—	—	—	—	—	—	7	—
Israel	—	—	—	—	—	—	—	5	—
Venezuela	—	—	—	—	—	—	—	24	—
Japan	—	—	—	—	—	—	—	*	—
Cuba	—	—	—	—	—	—	—	*	—
Belgium	—	—	—	—	—	—	—	*	—
Republic of Ireland .	—	—	—	—	—	—	—	*	—
South Korea	—	—	—	—	—	—	—	*	—
Iran	—	—	—	—	—	—	—	*	—
Ecuador	—	—	—	—	—	—	—	*	—
Burma	—	—	—	—	—	—	—	*	—
Uruguay	—	—	—	—	—	—	—	*	—

*Four or fewer.

Other naval forces, not shown in the table because they comprise only minor war vessels, are those of Bulgaria, Ceylon, Finland, Haiti, Honduras, Hungary, Iceland, Iraq, Nicaragua, Panama, Paraguay and the Philippines.

"Powerful"), 2 cruisers, 11 destroyers (4 of which were to be converted to fast antisubmarine escorts), 24 frigates (14 more were under construction or projected), 30 fleet minesweepers and numerous smaller craft.

U.S.S.R.—The total available naval strength at the end of 1952 was 3 battleships, 14 cruisers, 3 coast defense ships, 85 destroyers, 38 frigates, 370 submarines, 26 escort vessels and numerous minesweepers, minelayers, patrol vessels, torpedo boats and ancillary ships.

France.—Two more destroyer escorts (frigate type) were acquired from the United States. The construction of the anti-aircraft cruiser "De Grasse" was continued. The fleet comprised 2 light aircraft carriers, 1 escort carrier, 2 battleships, 5 cruisers, 9 destroyers, 28 frigates, 12 submarines and numerous patrol vessels, miscellaneous ships and auxiliaries.

Italy.—The navy consisted of 2 old battleships, 3 cruisers, 3 destroyers, 15 frigates, 5 torpedo boats, 23 corvettes and a number of minesweepers and auxiliaries, 3 destroyers and 7 torpedo boats having been converted and rerated as escorts (frigates).

Other European Countries.—Sweden had 4 cruisers, 3 coast defense ships (small battleships), 12 destroyers, 4 of which were to be converted into frigates, 3 antisubmarine frigates, 6 torpedo boats (small destroyers), all to be converted into frigates, 24 submarines, 2 minelayers and numerous motor torpedo boats, minesweepers and other vessels.

The Netherlands had a well-balanced navy of 1 light fleet aircraft carrier, 2 light cruisers (2 larger cruisers were nearing completion), 6 destroyers, 10 frigates, 7 submarines, 4 escort minesweepers, 1 minelayer and a number of other warships.

Spain had 6 cruisers, 20 destroyers, 12 frigates, 6 submarines,

6 minelayers, 7 fleet minesweepers and many minor warships and auxiliaries. Six corvettes, four submarines and seven fleet minesweepers were being built.

Turkey possessed 1 battle cruiser more than 40 years old, 10 destroyers, 11 submarines, 13 ocean minesweepers and numerous other warships and auxiliaries.

South America.—Argentina had 2 old battleships, 5 cruisers, 1 coast defense ship, 11 destroyers, 4 torpedo boats (smaller destroyers), 7 frigates, 3 submarines, 8 minesweepers and other craft.

Brazil possessed 1 old battleship, 2 cruisers, 9 destroyers, 8 frigates, 3 submarines, 10 corvettes and numerous smaller craft.

Chile had 1 old battleship, 2 cruisers, 6 destroyers, 6 frigates, 7 submarines and a number of miscellaneous ships.

Modern Types of Warships.—The principal types of modern warships in the navies of the world were as follows:

Fleet Aircraft Carriers.—"Midway" (U.S.), 45,000 tons, fourteen 5-in. guns, 137 aircraft, 212,000 s.h.p., 33 knots; "Eagle" (British), 36,800 tons, sixteen 4.5-in. guns, 110 aircraft, 152,000 s.h.p., 31½ knots; "Oriskany" (U.S.), 30,800 tons, eight 5-in. guns, 100 aircraft, 150,000 s.h.p., 33 knots; "Implacable" (British), 26,000 tons, sixteen 4.5-in. guns, 72 aircraft, 148,000 s.h.p., 32½ knots.

Light Fleet Aircraft Carriers.—"Saipan" (U.S.), 14,500 tons, 50 aircraft, 120,000 s.h.p., 33 knots; "Theseus" (British), 13,350 tons, 35 aircraft, 40,000 s.h.p., 25 knots; "Belleau Wood" (U.S.), 11,000 tons, 45 aircraft, 100,000 s.h.p., 32 knots.

Battleships.—"Iowa" (U.S.), 45,000 tons, nine 16-in. and twenty 5-in. guns, 212,000 s.h.p., 33 knots; "Vanguard" (British), 44,500 tons, eight 15-in. and sixteen 5.25-in. guns, 130,000 s.h.p., 30 knots; "South Dakota" (U.S.), 35,000 tons, nine 16-in. and twenty 5-in. guns, 130,000 s.h.p., 28 knots; "Jean Bart" (French), 38,750 tons, eight 15-in. and nine 6-in. guns, 150,000 s.h.p., 30 knots; "King George V" (British), 35,000 tons, ten 14-in. and sixteen 5.25-in. guns, 110,000 s.h.p., 28½ knots.

Large (Battle) Cruisers.—"Alaska" (U.S.), 27,500 tons, nine 12-in. and twelve 5-in. guns, 150,000 s.h.p., 33 knots.

Heavy Cruisers.—"Des Moines" (U.S.), 17,000 tons, nine 8-in. and twelve 5-in. guns, 120,000 s.h.p., 33 knots; "Oregon City" (U.S.), 13,700 tons, nine 8-in. and twelve 5-in. guns, 120,000 s.h.p., 33 knots.

Light Cruisers.—"Worcester" (U.S.), 14,700 tons, twelve 6-in. and twenty 3-in. guns, 120,000 s.h.p., 32 knots; "Fargo" (U.S.), 10,000 tons, twelve 6-in. and twelve 5-in. guns, 100,000 s.h.p., 32½ knots; "Superb" (British), 8,000 tons, nine 6-in. and ten 4-in. guns, 72,500

s.h.p., 31½ knots; "Tre Kronor" (Swedish), 7,500 tons, seven 6-in. guns, 100,000 s.h.p., 33 knots; "Diadem" (British), 5,900 tons, eight 5.25-in. guns, 62,000 s.h.p., 32 knots.

Destroyers.—"Mitscher" (U.S.), 3,675 tons, 5-in. and 3-in. guns; "Daring" (British), 2,610 tons, six 4.5-in. guns, 54,000 s.h.p., 34 knots; "Gearing" (U.S.), 2,425 tons, six 5-in. guns, 60,000 s.h.p., 35 knots; "Jutland" (British), 2,400 tons, five 4.5-in. guns, 50,000 s.h.p., 31 knots; "Öland" (Swedish), 1,800 tons, four 4.7-in. guns, 44,000 s.h.p., 35 knots.

Frigates.—"Relentless" (British), 1,705 tons, two 4-in. guns, two 21-in. torpedo tubes, 40,000 s.h.p., 34 knots; "Mounts Bay" (British), 1,580 tons, four 4-in. guns, 5,500 i.h.p., 19½ knots; "Amethyst" (British), 1,490 tons, six 4-in. guns, 4,300 s.h.p., 18½ knots; "Brecon" (British), 1,175 tons, six 4-in. guns, three 21-in. torpedo tubes, 19,000 s.h.p., 25 knots.

Submarines.—"Tang" (U.S.), 1,570 tons, six 21-in. torpedo tubes, 20 knots; "Amphion" (British), 1,120 tons, one 4-in. gun, two 5-in. guns, ten 21-in. torpedo tubes, 4,300 b.h.p., 18 knots; "Créole" (French), 820 tons, one 3.5-in. gun, ten 21.7-in. torpedo tubes, 3,000 b.h.p., 17 knots; "K-1" (Russian), 1,457 tons, two 4-in. guns, ten 21-in. torpedo tubes, 22½ knots. (R. V. B. B.)

Navy, U.S. Department of: see GOVERNMENT DEPARTMENTS AND BUREAUS, U.S.

N.E.A.: see SOCIETIES AND ASSOCIATIONS, U.S.

Nebraska. Known as the "Cornhusker state," Nebraska is situated in the west north central portion of the U.S. Land area: 77,227 sq.mi., including an estimated 564 sq.mi. of water. Population (1950 census), 1,325,510, an increase of 9,676 or 0.7% since 1940. Urban population constituted 46.9% of the total. Capital city: Lincoln, pop. 98,884; largest city: Omaha, pop. 251,117.

History.—The regular session of the state legislature was to meet Jan. 6, 1953. Nebraska is represented in congress by two senators and four representatives. The elected state officials for 1951-53 were: governor, Val Peterson (Rep.); lieutenant governor, Charles Warner (Rep.); attorney general, Clarence S. Beck (Rep.); auditor, Ray C. Johnson (Rep.); treasurer, Frank B. Heintze (Rep.); superintendent of public instruction, Freeman Decker (nonpartisan); secretary of state, James Pittenger (Rep.) (appointed upon the death of incumbent Frank Marsh); chief justice, Robert Simmons (nonpartisan).

Education.—The 6,127 elementary schools in 1950-51 had 8,835 teachers and 171,543 enrolled pupils; the 551 high schools, 3,108 teachers and 60,084 pupils; the 4 state normal schools (which since 1949 also grant liberal arts degrees), 238 teachers and 4,516 students. Total expenditures for common schools for the year ending June 30, 1951, were \$52,786,583. The state university is located in Lincoln; there are 3 other universities, a municipal university in Omaha, Creighton (Catholic) University in Omaha, and Nebraska Wesleyan (Methodist) in Lincoln. There are 14 four-year colleges and 5 junior colleges. There are 253 private, parochial and denominational schools in the state. The state holds 1,632,439 ac. of land, valued, in 1952, at \$18,962,800, as a permanent endowment for its public schools. The permanent public school endowment fund was \$15,077,485.

Social Insurance and Assistance, Public Welfare and Related Programs.—For the biennium, 1951-53, the legislature appropriated \$42,007,620 for public assistance, \$21,831,720 of which came from federal funds. This represented the largest public assistance budget in the state's history. During 1951-53 (first eight months of 1952) there was an average case load of 756 persons per month receiving blind aid with average payments of \$63.93; 22,306 persons per month receiving old-age assistance with average payments of \$52.80; and 7,361 dependent children receiving aid with average payments of \$37.27. A 1952 special session of the legislature raised the maximum old-age assistance payments from \$55 to \$60 per month.

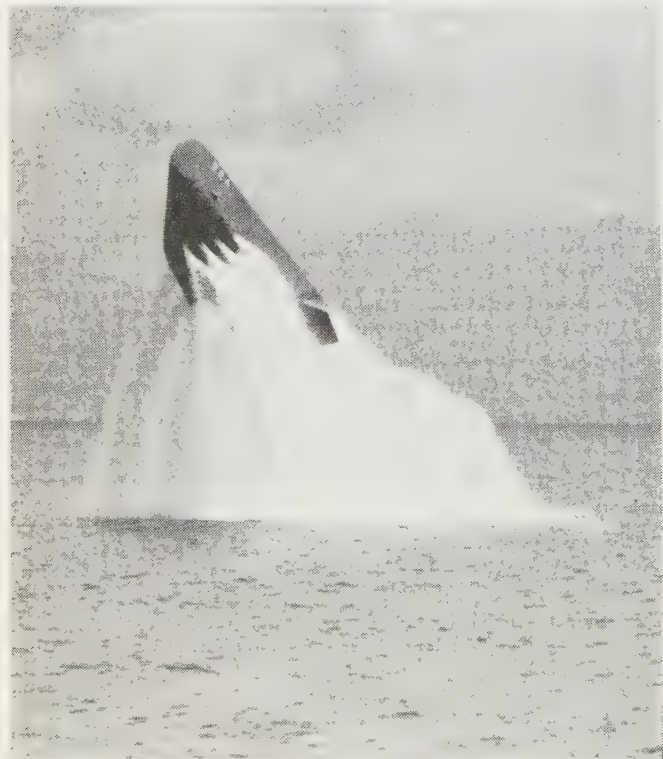
The state maintains 18 charitable, mental, reformatory and penal institutions under the supervision of the state board of control. On July 1, 1952, the total population of these institutions numbered 8,660. The state had 112 hospitals (13,844 beds) registered with the American Medical association.

Communications.—The total road mileage of the state in 1952 was 105,729, of which the state maintained 9,659 mi. There were 6,326 mi. of steam railway. The 1951 legislature appropriated \$34,990,000 for highway purposes for the 1951-53 biennium.

There were 372 airports in the state, 5 of which were state-owned and 65 municipally owned. There were 25 daily newspapers and 440 other newspapers and periodicals of all kinds published in the state. The state had 24 radio stations and 2 television transmitters.

Banking and Finance.—The state budget for the 1951-53 biennium was \$173,269,571.08, the largest in its history. For the fiscal year ending June 30, 1952, the state's revenues were \$80,909,182.89, expenditures were \$84,835,542.70. Federal grants furnished were \$15,482,160.90. The net long-term debt of the state was nil.

On June 30, 1952, there were 287 state banks in the state with total resources of \$425,581,807.66. On the same date there were 123 national



SUBMARINE U.S.S. "Pickerel" coming up out of the Pacific ocean at an angle of 48° during 1952 sea trials near Hawaii. The "Pickerel" was a guppy (Greater Underwater Propulsive Power) submarine with a snorkel (breathing apparatus for lengthy submersion)

Table I.—Principal Crops of Nebraska

Crop	Indicated		Average 1941-50
	1952	1951	
Corn, bu.	254,880,000	187,620,000	223,532,000
Wheat, bu.	97,371,000	58,073,000	70,067,000
Oats, bu.	47,272,000	60,816,000	61,349,000
Barley, bu.	2,924,000	4,620,000	17,892,000
Rye, bu.	1,720,000	1,717,000	3,570,000
Potatoes, bu.	8,250,000	6,000,000	10,518,000
Sugar beets, tons	812,000	683,000	704,000
Hay, tons	6,009,000	6,234,000	4,481,000
Sorghum grain, bu.	1,840,000	1,664,000	2,374,000
Beans, dry (100-lb. bags).	952,000	838,000	921,000
Soybeans, bu.	2,112,000	1,276,000	546,000

Source: U.S. Department of Agriculture.

banks with total resources of \$1,046,327,000.

Agriculture.—There were in 1952 approximately 107,183 farms in the state with a total area of 47,466,828 ac. Tenant farmers (1950) operated 38.9% of all farms.

Manufacturing.—In 1952 there were 1,133 manufacturing establishments (not including dairy establishments employing less than 5 persons), with 58,400 production workers, earning \$135,377,549. The chief industry is meat-packing, mainly at South Omaha. (J. W. Rs.)

Mineral Production.—Table II shows the tonnage and value of those mineral commodities produced in Nebraska in 1949 and 1950, listing

Table II.—Mineral Production of Nebraska

Mineral	(In short tons, except as noted)		1949	
	1950	Value	Quantity	Value
Clays	100,000	\$ 109,000	87,000	\$ 85,000
Petroleum (bbl.).	1,547,000	3,300,000	330,000	730,000
Sand and gravel	5,078,000	3,168,000	5,115,000	2,912,000
Stone	737,000	1,042,000	505,000	841,000
Other minerals		6,403,000		5,534,000
Total.		\$14,022,000		\$10,102,000

all items whose value exceeded \$100,000. Data for 1951 were not yet available. Nebraska ranks 41st among the states in value of mineral output, with 0.12% of the U.S. total.

Necrology: see OBITUARIES.

Negroes, American. The issue of civil rights for Negroes was intensified during the presidential election year of 1952, beginning with sharp controversy in both the Republican and the Democratic national conventions. In each the split between advocates of strong federal reform and states rights gradualism was compromised in the final party planks on civil rights, but militant pressure by Negro political leaders, especially that led by Congressman Adam C. Powell, Jr. (Dem., N.Y.), forced more forthright campaign stands from the candidates of both major parties. During the year, Pres. Harry S. Truman appointed two Negro members to his committee on government contract compliance, to enforce the anti-discrimination clauses in government purchases and orders.

Legal Developments.—The U.S. supreme court restrained the Brotherhood of Railway Trainmen from contract discrimination against Negroes, and also agreed to hear on appeal anti-segregation school suits from Kansas and South Carolina, which decisions would also cover pending cases from Delaware, Florida and Virginia. In the Cicero, Ill., riot case, a federal court found the police chief and three town officials guilty of conspiracy to violate the civil rights of Harvey Clark, whose moving into a restricted apartment house precipitated the riots. The Delaware chancery court ruled that Negro children must be admitted to mixed high and elementary schools because of unequal facilities. Still unsettled on appeal were several of the most important general suits involving the legality of the entire system of educational segregation, including those in Delaware, Virginia, South Carolina, Florida, Louisiana and the District of Columbia. The murder by bombing Christmas night, 1951, at Mims, Fla., of Harry T. Moore, a Negro educator and state coordinator of the Florida branches of the National Association for the Advancement of Colored People, had national repercussions. Moore, who was heading a campaign for the indictment of the sheriff of Lake county for the fatal shooting of a Negro prisoner in his charge, was posthumously awarded the 1952 Spingarn medal. Representatives of 75 trade unions formed a



NEGRO DOLLS specially designed to fill a need among Negro children and replace white dolls painted brown or dolls based on stereotypes of the "mammy" or "pickaninny." The new dolls were anthropologically correct, based on careful measurements of scores of Negro children

National Negro Labor committee to combat discrimination in industry.

Educational and Cultural.—By 1952, state universities in 12 southern states had admitted Negro students, primarily to certain graduate and professional divisions (Arkansas, Delaware, Kentucky, Louisiana, Maryland, Missouri, North Carolina, Oklahoma, Tennessee, Texas, Virginia, West Virginia), and four of them to the undergraduate college. It was estimated that more than 1,100 Negroes attended those institutions during the year. At the triennial convention of the united chapters of Phi Beta Kappa, Howard university, Washington, D.C., and Fisk university, Nashville, Tenn., were among the new colleges admitted. Negro college enrolments became difficult to trace with increasing integration; the U.S. office of education estimated this total as 74,526 in 1950; the 1951 annual *Crisis* survey reported 42,226 or more Negroes enrolled, with 6,130 bachelor degrees granted, 271 masters and 14 Ph.D.s. The University of Tennessee, Knoxville, admitted its first Negro student, and Groton school, Groton, Mass., announced its first Negro accepted. The public-school system of Cairo, Ill., abandoned segregation without untoward incident.

After a successful tour of the United States, a third version of George and Ira Gershwin's opera, *Porgy and Bess*, with a star Negro cast including William Warfield and Leontyne Price, was sent to Europe under state department auspices, and received ovations in Vienna and Berlin. Similar reception was given Dean Dixon, Negro orchestral conductor, in many European centres, culminating with invitations to conduct at the Venice International and the Sibelius festival of 1952, the latter leading to his appointment as coconductor of the Gothenburg, Swed., and the Helsinki, Fin., orchestras. Dixon in his concert programs featured several compositions of Negro composers, notably the works of Howard Swanson, whose *Short Symphony* received

the New York Music Critics' Circle award in 1951, and of Ulysses Kay, Guggenheim fellow at the American academy at Rome. Discrimination at Constitution hall, Washington, D.C., was broken with a spring concert at which Dorothy Maynor was soloist, while *Porgy and Bess* played at the National theatre as the second attraction under its new nondiscriminatory policy.

The film version of Alan Paton's *Cry, the Beloved Country* was selected as the British nominee for the International Selznick award contest. Its star, Canada Lee, a well-known Negro actor, died May 9 in New York city.

Ralph Bunche was elected president of the American Political Science association. Peter M. Murray, already a member of the house of delegates of the American Medical association, was elected vice-president of the Medical Society of the County of New York.

In sports Negro athletes set six Olympic records at the Helsinki games, while five Negro boxers won gold medals in the boxing world championships. Heavyweight Joe Walcott was the recipient of the Edward J. Neil trophy award, and the Professional Golfers association, after a long campaign sponsored by Joe Louis, approved participation by Negroes in P.G.A. co-sponsored tournaments. (See also EDUCATION; LAW.)

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Nehru, Jawaharlal (1889–), Indian statesman, born at Allahabad, United Provinces, on Nov. 14. For his earlier career see *Encyclopædia Britannica*. Arrested in Aug. 1942, following congress' call for civil disobedience, Nehru was released in June 1945, and in March 1946 took a leading part in the negotiations with the British cabinet mission on Indian independence. In September of that year he became vice-president of the first all-Indian executive council (i.e., prime minister of the interim government). On Aug. 15, 1947, when the Indian subcontinent was partitioned, he was appointed prime minister and minister for external affairs, posts in which he continued when India became a republic on Jan. 26, 1950. Nehru entered upon his fifth term as congress president on Sept. 8, 1951.

The Indian prime minister's year began with a brief election tour of West Bengal (Dec. 31, 1951–Jan. 2, 1952) followed by a visit to Bihar. On Feb. 13 it was made known that he had been returned with a substantial majority for the Allahabad-East-cum-Jaunpur constituency. He addressed a conference of state governors and *rajpramukhs* held in New Delhi on March 14–15. Many of the prime minister's engagements during 1952 emphasized India's quest for material betterment and technical development: he inaugurated the Indian Science congress and opened the Jute Research institute's laboratories in Calcutta (Jan. 2); signed the India-U.S. technical co-operation fund agreement (Delhi, Jan. 5); laid the foundation stone of Kandla Port, on the Gulf of Kutch (Jan. 10); opened an important chemical and dyestuffs plant at Parnera, Bombay (March 17); opened a community projects conference (Delhi, May 7); and inaugurated the Central Road Research institute near New Delhi (July 16). On June 14 he had made a nation-wide broadcast on the country's food situation. (See also INDIA; PAKISTAN.)

Nepal. An independent kingdom in the Himalayas, Nepal lies between India and Tibet. Area: c. 54,000 sq.mi. Pop. (1951 est.): 7,000,000. Aboriginal stock is Mongolian, with Hindu admixture. Language: Gorkhalis, or Gurkhas, speak Parbatia, of Sanskrit origin; Bothias use Tibetan; Newars, from

southern India, speak Gubhajius, resembling Tibetan but with many Sanskrit words. Religion: Buddhism mixed with Hinduism. Capital, Kathmandu (pop. c. 110,000). Ruler, Tribhubana Bir Bikram Shah Deva.

History.—Inaugurating on July 4, 1952, the newly constituted 61-member advisory assembly at Kathmandu, King Tribhubana said that the establishment of the assembly was another big step toward democracy. He also said that the cordiality between Nepal and Tibet had not been affected by the presence of Chinese in the latter country.

On July 21, however, the new constitutional regime suffered a setback when Bishewar Prasad Koirala, chairman of the Nepali Congress party, ordered his elder brother Matrika Prasad Koirala to resign from the premiership because he had refused to reconstruct the cabinet according to the party's wishes. On Aug. 10, M. P. Koirala resigned from office and the king reluctantly took over the administration himself. On Aug. 14 he proclaimed that he would rule through five advisers till a representative council of ministers could be set up.

On Sept. 3 the Nepali Congress party asked the king to put an end to the advisers' regime and to entrust the party with the forming of a new government. The next day King Tribhubana flew to New Delhi and was greeted at the airport by Jawaharlal Nehru, the Indian prime minister. Shortly after his return to Kathmandu he appointed on Sept. 26 a 15-member commission to investigate land holdings and to suggest reforms.

On July 30, in a northwestern district, 14 Nepali Communists were arrested when they were returning through one of the passes from Tibet. Documents said to be important were seized.

It was announced from Delhi on Aug. 25 that the Indian government had expressed to the British and Nepali governments its desire that the 1947 arrangement under which Gurkha recruits for the British army were attested in special recruiting depots on Indian territory near the Nepali border should be terminated and alternative arrangements made. Under the 1947 arrangement India maintained 12 Gurkha battalions (the old Indian army had 20) and the British army 8. As some of the latter were serving in Malaya, the Indian Communist party criticized the government for allowing the "recruitment of Gurkhas on Indian soil for the British war against the people of Malaya."

Finance and Banking.—Estimated gross revenue 12,500,000 rupees. Monetary unit: Nepal rupee, with an exchange rate (Nov. 1952) of 13.33 rupees to the pound sterling, or 4.76 rupees to the U.S. dollar.

Foreign Trade.—(1944–45) Imports 32,520,000 rupees; exports 37,376,000 rupees. Estimated exports to India (1951) 130,000,000 rupees; estimated imports from India 66,000,000 rupees. Principal imports: textiles, cigarettes, salt, paraffin, sugar, spices, machinery, medicines and boots and shoes. Principal exports: food grains, jute, timber, oilseeds, potatoes, hides and skins.

Transport and Communications.—Roads (1950): 237 mi. suitable for motor vehicles. Licensed motor vehicles (Dec. 1950): cars 220; commercial 80.

Nervous System: see PSYCHOSOMATIC MEDICINE.

Netherlands. A kingdom of northwest Europe, the Netherlands is bounded north and west by the North sea, east by Germany and south by Belgium. Area: 12,868 sq.mi. (not including the waterways and sheets of water larger than 185 ac.). Pop.: (1947 census) 9,625,499; (Oct. 1951 est.) 10,286,250. Language: Dutch. Religion (1947): Roman Catholic 38.50%, Dutch Reformed 31.03%, Reformed Churches 7.93%, nonchurch members 17.04%. Chief towns (pop., 1951 est.): Amsterdam (cap., 845,266); Rotterdam (684,658); The Hague (571,853); Utrecht (195,121); Haarlem (164,007); Eindhoven (143,965); Groningen (137,719); Tilburg (122,551); Nijmegen (112,799). Ruler, Queen Juliana; prime minister in 1952, Willem Drees.

History.—The most important event in domestic politics in 1952 was the general election for the second chamber, which

took place on June 25. During the campaign preceding the election, both Liberal and Anti-Revolutionary (Calvinist) parties levelled strong criticism at the post-World War II government policy which was said simply to exemplify the influence wielded by the Labour party in the government coalition. Tendencies of state socialism, exaggerated bureaucratism and stifling taxation, were counts in the indictment. The Labour minister of finance, Pieter Liefstinck, was a favourite butt of criticism, although he turned for the better which the country's financial situation had taken made some of it less effective. Meanwhile the other chief member of the governing coalition, the Catholic People's party, was obviously subject to severe internal tension. Conservative elements hinted that other partners might be found in place of Labour; this tendency toward the right caused a good deal of alarm among the party's left wing and Catholic workmen.

The result of the election afforded clear proof that thousands of the latter were so much disgruntled as to desert the party and to vote on the Labour party list. The proportional representation system does not allow very sharp changes and those that occurred, although seemingly small, came as a great surprise. For the Labour party the result was gratifying: in a house of 100 it increased its seats from 27 to 30. The wide popularity of the premier, Willem Drees, was no doubt a factor in the success, but its most important aspect seemed to be that it could be regarded as the first substantial realization of the "break-through," advocated and predicted by Labour since World War II, or, in other words, of a realignment of parties on issues of practical politics instead of religious principles.

According to custom the cabinet had resigned before the result was known. The formation of a new cabinet proved a lengthy and wearisome business. The Catholic leaders insisted on having more parties included and a tussle about the redistribution of portfolios ensued. On Sept. 1 a new Drees cabinet was announced with himself as prime minister, L. J. M. Beel (Catholic) as minister of the interior, Cornelis Staf (Christian Historical) as minister of defense and J. A. van de Kieft (Labour) as minister of finance. An innovation was the appointment of two foreign ministers in the persons of J. W. Beyen (nonparty) and J. M. A. H. Luns (Catholic).

The favourable trend in the country's financial and economic affairs that had first manifested itself about the middle of 1951 continued during 1952. Both the movement of prices in the international market and government measures taken in 1951 were responsible for a considerable improvement of the country's balance of payment. While in the first seven months of 1951 only 66% of imports were covered by exports, the proportion in the same period of 1952 was 92%. The stock of gold and foreign currency, which amounted to 895,000,000 guilders in July 1951, reached 2,926,000,000 guilders in July 1952. The deficit in the European Payments union was not only wiped out, but the Netherlands became a considerable creditor. The dollar shortage, however, remained. The improved financial position was one factor in making the Netherlands bank decide (Jan. 22) to lower the bank rate from 4% to 3½%. The deflationary policy was partly responsible for an increase of unemployment (165,824 unemployed in Jan. 1952).

In January negotiations were started at The Hague between the Netherlands government and delegates of the Indonesian republic about the Netherlands-Indonesian union (dating from the Round Table conference of 1949) and the status of western New Guinea. In regard to the first question, the Dutch government declared its readiness to replace the union relationship by a complex of agreements in international law. In regard to New Guinea it proved impossible to reach a compromise so that the negotiations were broken off in February. (See also INDONESIA.)



SPRING FLOWER FESTIVAL in 1952 in Bloemendaal, Neth. The annual parade of colourful and scented tableaux follows the cutting of flowers which is done soon after blooming time to safeguard life in the young bulbs, a major Dutch export

The improvement of the Dutch balance of payments removed one of the obstacles that stood in the way of a complete economic union of Belgium, the Netherlands and Luxembourg (the Benelux economic union). New difficulties were created when certain interests in Belgium began to complain with increasing violence of the competition they were suffering from Dutch imports. Because the level of wages and prices was lower in the Netherlands, various Dutch products were cheaper than the Belgian equivalents. A clamour arose for measures to protect Belgian products if the Dutch price level were maintained. A raising of that level might, however, jeopardize the Dutch trading position in the international market.

In the negotiations held in Paris for the creation of a European Defense Community it was the policy of D. U. Stikker, Liberal minister of foreign affairs, to advocate a close integration of the projected European army into the wider NATO (North Atlantic Treaty organization) framework. He wished to see the Federal Republic of Germany included somehow in NATO. On May 27 he put his signature to the agreement for the creation of the European Defense Community. According to his statement in the second chamber on Feb. 7, the government had come to realize that it was hardly possible to proceed further on the road of functional organization without accepting political federation. In his view the European Defense Community was already to be considered as a partial federation. Since a European federation seemed the logical and inevitable development, the government was determined to accept the situation and energetically to promote the project.

In April Queen Juliana and her consort paid an official visit to the United States, and on April 3 the queen addressed the U.S. congress. (See also KOREAN WAR; NETHERLANDS ANTILLES; NETHERLANDS NEW GUINEA; NORTH ATLANTIC TREATY ORGANIZATION; SURINAM.) (P. GL.)

Education.—Schools (1949-50): government infant 294, pupils 48,208, teachers 1,260; private infant 2,720, pupils 267,478, teachers 6,245; government elementary 2,401, pupils 319,680, teachers 9,685; private elementary 4,697, pupils 860,478, teachers 24,939; day secondary 1,281, pupils 209,818, teachers 11,614; evening secondary 126, pupils 15,905, teachers 1,095; agricultural 236, pupils 50,380; technical and housewifery 892, pupils 236,278, teachers 11,405. Teachers' training colleges 89, students 10,545, lecturers 1,152. Universities: state 4, students 17,928, professors and lecturers 684; technical 4, students 8,367, professors and lecturers 274; free 2, students 2,271, professors and lecturers 99.

Finance and Banking.—Budget: (1952 est.) revenue 4,701,000,000 guilders, expenditure 3,801,000,000 guilders; (1953 est.) revenue 5,124,000,000 guilders, expenditure 5,616,000,000 guilders. National debt (June 1950): 26,704,000,000 guilders. Currency circulation (June 1952):

2,975,000,000 guilders. Bank deposits (Aug. 1952): 3,993,000,000 guilders. Gold reserve and foreign exchange of Central bank (July 1952): U.S. \$764,000,000. Monetary unit: guilder or florin, with an exchange rate of 10.64 guilders to the pound sterling and 3.805 guilders to the U.S. dollar.

Foreign Trade.—(1951) Imports 9,673,000,000 guilders; exports 7,431,000,000 guilders. Main sources of imports (1951): Belgium-Luxembourg 18%; Germany 12%; U.S. 11%; U.K. 8%. Main destinations of exports: U.K. 16%; Belgium-Luxembourg 15%; Germany 14%; Indonesia 5%. Main imports: textiles, fibres and manufactures 13%; coal, petroleum and products 11%; iron and steel manufactures 9%; grain 6%. Main domestic exports: milk, dairy products and eggs 12%; textile fabrics including garments 8%; machinery and apparatus 8%; chemicals and related products 7%.

Transport and Communications.—Roads (Jan. 1950): main 1,724 mi.; secondary 2,694 mi.; third class and unclassified 10,713 mi. Licensed motor vehicles (Dec. 1950): cars 138,625, commercial vehicles 88,126. Railways (1950): 1,925 mi., of which 555 mi. were electrified; passenger-miles 3,802,000,000; freight, tonnage carried 21,200,000; ton-miles 1,870,000,000. Inland waterways: 4,335 mi., of which c. 1,000 mi. were for ships of more than 1,000 gross tons. Shipping: merchant vessels of 100 gross tons and more (July 1951) 1,602; total tonnage 3,237,333. Air transport (1950): passenger-miles 469,000,000; freight ton-miles 19,500,000. Telephones (1951): 781,678. Radio receiving sets (1951): 1,600,000.

Agriculture and Fisheries.—Main crops (metric tons, 1951): wheat 270,000; rye 458,000; barley 210,000; oats 491,000; potatoes 3,796,000; sugar (raw value) 366,000; rapeseed 21,000; linseed 20,000; dry peas 76,000; broad beans 9,000; flax fibre 25,400. Livestock (May 1951): cattle 2,882,000; pigs 1,947,000; horses used in agriculture (May 1950) 252,000; sheep 371,000; poultry 25,460,000. Meat production (metric tons, 1951): 382,000, including beef and veal 166,000, pork 212,000. Dairy production (metric tons, 1951): milk delivered 45,213,000 hl.; butter 84,600; cheese 140,400. Fisheries: total catch (1951) 280,000 metric tons; herring exports (1950) 33,860 metric tons, valued at 17,500,000 guilders.

Industry.—Industrial establishments (1948): 115,580; persons employed 1,227,297. Total working population (1950): 3,953,000. Fuel and power (1951): coal 12,420,000 metric tons; lignite 252,000 metric tons; crude oil 714,000 metric tons; manufactured gas 1,680,000,000 cu.m.; electricity 5,796,000,000 kw.hr. Raw materials (metric tons, 1951): pig iron 524,400; crude steel 552,000; zinc (smelter) 22,600; aluminum (primary metal, 1950) 10,800; tin, metal 21,400; salt (1950) 419,000. Manufactured goods (metric tons 1951): cement 702,200; cotton yarn 62,300; wool yarn 21,100; rayon filament yarn 24,400; rayon staple fibre 11,900; paper (1950) 325,000; leather footwear (1949) 18,500,000 pairs. New dwellings completed (1951): 58,668.

Netherlands Antilles.

Six islands in the West Indies constitute the Netherlands Antilles. Three small islands, on the northern edge of the Caribbean sea near Puerto Rico, are Saba (5 sq.mi.), St. Eustatius (7 sq.mi.) and the southern half of St. Martin (17 sq.mi.). The three principal islands lie 500 mi. to the southwest, off the coast of Venezuela. They are Curaçao (210 sq.mi.), Aruba (69 sq.mi.) and Bonaire (95 sq.mi.). The population of all six islands was estimated in 1951 at about 166,000, and that of the capital city, Willemstad, on Curaçao, at about 48,000. The official language is Dutch, but a mixture of Dutch, Spanish, English and other tongues, known as Papiamentu, is equally widespread.

During 1952 the governor, appointed by the crown, was A. A. M. Struycken. The prime minister was M. F. da Costa Gomez.

History.—All citizens of the Netherlands Antilles are subjects of the crown of the Netherlands, with the same rights and duties as those resident in the mother country. Constitutional relationships between the parliament, set up in 1950, and the imperial government had not been settled in 1952. Repeated conferences took place during 1952, as they had in 1951, in the ministry of overseas territories in The Hague.

The effort to bring about the organization of labour employed in the oil refineries on Curaçao and Aruba, so as to exert more influence on the policy of the companies, continued during 1952, and late in the year the Oil Workers International union of the United States consented to send one of its officials to look into the situation.

The future economic relations of the Netherlands Antilles with Venezuela continued to preoccupy the authorities both at The Hague and at Willemstad. Early in 1952 a counsellor for Caribbean affairs was appointed to the Dutch embassy in Caracas, Venez., and a person selected by the cabinet at

Willemstad was designated to the post, becoming virtually the first diplomatic representative of the Antilles in Venezuela.

(C. E. Mc.)

Education.—In 1951 there were 48 elementary schools with 15,912 pupils, 31 higher elementary schools with 11,765 pupils and 3 secondary schools with 417 students.

Finance.—The monetary unit is the Netherlands Antilles guilder or florin, valued at \$0.530264 U.S. currency during 1952. The budget for the fiscal year 1951 estimated expenditure at 55,273,236 f. and revenue at 55,362,515 f. Actual revenue in 1950 amounted to 60,588,122 f. The public debt on Jan. 1, 1952, was 8,450,000 f.; notes in circulation 35,217,000 f.; gold reserves 35,217,000 f.

Trade and Communications.—Exports in 1951 totalled 1,324,800,000 f., imports were 1,447,200,000 f. More than 98% of the exports consisted of petroleum products and about 80% of the imports consisted of crude petroleum, principally from Venezuela. The U.S. supplied about two-thirds of the nonpetroleum imports.

The highway mileages of the islands of the Netherlands Antilles in 1950 were as follows: Curaçao, 210; Aruba, 150; Bonaire, 32.5; St. Martin, 17; Saba, 4.5 and St. Eustatius, 2.5. On Jan. 1, 1951, 5,008 automobiles and 1,712 trucks were in use on Curaçao and 3,379 automobiles and 1,063 trucks on Aruba. On Jan. 1, 1952, there were 6,456 telephones, of which 4,117 were on Curaçao and 2,145 on Aruba.

Manufactures.—The three refineries—Curaçaoische Petroleum Industrie Maatschappij, N.V. (Shell) on Curaçao and Lago Oil and Transport Co. (Standard Oil Company of New Jersey) and the Eagle Oil Co. (Shell) on Aruba—produced 39,300,000 metric tons of refined petroleum products in 1950, including 29,300,000 tons of heavy oils, 5,500,000 tons of gasoline and 2,100,000 tons of diesel oil.

(J. W. Mw.)

Netherlands New Guinea.

The western part of this second and largest island of the world, with smaller adjacent islands, forms part of the territory of the kingdom of the Netherlands. Area: c. 152,100 sq.mi. Pop.: c. 700,000 of whom (1951 est.) 339,787 were in districts under regular Dutch administration. Europeans numbered 9,869; Indonesians, 11,013; other Asiatics (mainly Chinese) 3,027. The Papuans form the principal native stock. Principal towns: Hollandia (cap., pop. 1951 est., 32,059), Manokwari, Sorong and Merauke. Governor in 1952, S. L. J. van Waardenburg.

History.—The budgets for 1950 through 1952 were finally submitted to parliament in the Netherlands for approval, together with a bill covering a 40,000,000 florin New Guinea development loan. The 1952 budget called for ordinary expenditure of 59,000,000 florins; the capital budget amounted to 8,533,000 florins. The annual report on the administration in 1951 was presented to the United Nations in August.

Under the auspices of the South Pacific commission (representing the joint interests in the area of Australia, Great Britain, France, the Netherlands and the United States) an experimental community project was started in the Nimboran plain, south of Hollandia; it aimed at raising the economic level of the Papuan population through adapting them to agriculture on the basis of co-operation by several clans. The same commission sponsored an investigation into the depopulation process, threatening New Guinea as it did other primitive societies exposed to contact with modern civilization. In June a geological and mining reconnaissance expedition under the auspices of the Delft Institute of Technology (the Netherlands) started operations in the Cyclops range of mountains on the north coast. The New Guinea Petroleum company continued to exploit the Klamono field on the western tip of the island (approx. 5,000 bbl. a day) and prepared the discovered fields near Mogoy and Wasian, farther east near the MacCluer gulf, for regular development. Apart from crude oil, exports of products such as copra and resins marketed by the indigenous population also began to rise.

The general picture thus showed increasing activity, but the administration and the impetus toward development of this primitive territory continued to be hampered to some extent by uncertainties regarding the future status of New Guinea, in view of Indonesian annexation ambitions (*see* INDONESIA). In the Netherlands, on the other hand, determination to carry on the task, based on article 73 of the U.N. charter, and to make adequate finances from Dutch treasury funds available for a long-

term development plan was becoming more positive. After a new cabinet had taken office in the Netherlands these intentions were confirmed in the speech with which the queen opened the sessions of parliament on Sept. 16. (W. G. P.)

Netherlands Overseas Territories: see NETHERLANDS ANTILLES; NETHERLANDS NEW GUINEA; SURINAM.

Neutrons: see PHYSICS.

Nevada. A state of the mountain group of western states, Nevada was the 36th state to be admitted to the Union, on Oct. 31, 1864; it is popularly called the "Sagebrush state" or the "Silver state." Land area 109,789 sq.mi.; water area 751 sq.mi. Pop. (1950 census) 160,083, a gain of 45.2% since 1940. Rural population 68,458; urban 91,625; white 149,707; nonwhite 10,176. The principal cities are: Carson City, the capital, 3,082; Reno, 32,497; Las Vegas, 24,624; Sparks, 8,203; Elko 5,393; Ely, 3,558.

History.—A number of important events occurred in Nevada during 1952. The huge Basic Magnesium project at Henderson, Nev., passed from state control to private ownership. The atomic bomb tests in southern Nevada attracted nation-wide attention. Through the efforts of the state's Colorado river commission, contracts were signed for the purchase of power generated at the great Shasta dam. The primary election held in September resulted in a number of unexpected nominations, including the nomination of Thomas B. Mechling (Dem.) for U.S. senator, and Clifton Young (Rep.) for member of the house of representatives.

On Jan. 1, 1952, elected officers were: governor, Charles H. Russell; lieutenant governor, Clifford A. Jones; secretary of state, John Koontz; state controller, Peter Merialdo; state treasurer, Dan W. Franks; surveyor general, Louis D. Ferrari; inspector of mines, Mervin J. Gallagher; superintendent of state printing, J. A. McCarthy; clerk of the supreme court, Ned A. Turner; superintendent of public instruction, Glenn A. Duncan; attorney general, W. T. Mathews.

Education.—In June 1952 Nevada had 178 elementary schools with a total enrolment of 24,766; teachers numbered 911. High schools totalled 37, with an enrolment of 7,144 and a staff of 341 teachers. Kindergarten enrolment was 2,546 in 16 kindergartens with 40 teachers. Total school population was 34,456. Average annual salaries paid to high school teachers was \$3,650, to elementary teachers \$3,231 and to kindergarten teachers \$3,310. State-wide expenditures for elementary and secondary education, all schools, was \$11,818,032 for the year, of which \$2,563,077 was provided as state aid.

Social Insurance and Assistance, Public Welfare and Related Programs.—For the fiscal year ended June 30, 1952, \$668,488 was expended by the state health and welfare departments. In addition, \$1,912,316 was expended for old-age assistance benefits to 2,755 persons, who received an average monthly amount of \$54.91. On June 30, 1952, the state prison had 287 men and 5 women inmates; total expenditures for the fiscal year were \$285,643. The Nevada school of industry had 31 boys and 3 girls under school control; total expenditures for the fiscal year were \$71,725. The state hospital for mentally ill persons had 392 patients in average daily residence during the fiscal year; expenditures were \$331,474. The state children's home had 48 boy and 43 girl residents during the fiscal year, and the cost to the state was \$185,627.

Communications.—During the fiscal year ended June 30, 1952, the total disbursement for highways was \$8,078,124. There were approximately 6,174 mi. of road in the designated state highway system, including secondary roads. Railroad mileage totalled 1,646 in 1952. Motor vehicle registrations in 1951 totalled 89,845, of which 87,617 were privately owned and 2,228 publicly owned. There were 385 registered aircraft and 67 established airports in 1951.

Banking and Finance.—On July 1, 1952, there were 31 individual banking institutions in the state, of which 23 were branches, 5 were national banks and 3 were state banks. The resources of Nevada banks totalled \$219,020,757, and deposits were listed at \$204,902,828.

The credits of the state for the fiscal year ended June 30, 1952, amounted to \$33,630,015; the debits to \$32,782,419. There was a

Table I.—Principal Crops of Nevada

Crop	Indicated 1952	1951	Average 1941-50
Barley, bu.	925,000	816,000	762,000
Potatoes, bu.	416,000	364,000	504,000
Wheat, bu.	581,000	502,000	482,000
Hay, ton	651,000	585,000	600,000
Oats, bu.	352,000	320,000	338,000
Corn, bu.	114,000	120,000	74,000

Source: U.S. Department of Agriculture.



NEWS REPORTERS, cameramen and guests scattered over the hill called News Nob, 10 mi. from an atomic bomb target at Yucca Flat, Nev., before witnessing the first nonsecret atomic explosion, in April 1952

treasury balance of \$10,894,910. The state had bonds outstanding in the amount of \$1,000,000 for the construction of office and institutional buildings. The par value of bonds and securities held by the state totalled \$8,603,377, and they produced an income of \$185,971. Nevada has no sales taxes, income taxes or inheritance taxes. A 2% tax on gambling netted the state \$1,859,129, and a state property tax of 69 cents on each \$100 of valuation netted \$2,316,789. The total assessed valuation of the state for 1952 was \$366,508,300.

Agriculture.—The total farm value of the principal crops in 1950 was \$17,256,000; the total acreage harvested was 511,000. In 1950 the cash income from crops sold was \$5,513,000; from livestock sold, \$42,650,000.

Manufacturing.—Manufacturing in Nevada is limited in scope and production. In 1947 there were 126 industrial establishments in the state, employing approximately 2,667 persons and paying approximately \$8,409,000 in wages for the year. The value added by manufacturing was approximately \$27,777,000. Expenditures for new plants and equipment totalled \$2,959,000 in 1947. By 1952 chemicals and allied products were being manufactured in ever-increasing quantities at the Basic Magnesium project at Henderson, Nev. (J. E. SPR.)

Mineral Production.—Table II shows the tonnage and value of those mineral commodities produced in Nevada in 1949 and 1950, listing all

Table II.—Mineral Production of Nevada

(In short tons, except as noted)

Mineral	1950		1949	
	Quantity	Value	Quantity	Value
Barite	48,000	\$ 269,000	71,000	\$ 417,000
Copper	53,000	21,869,000	38,000	14,995,000
Gold (oz.)	178,000	6,246,000	130,000	4,564,000
Gypsum	605,000	1,614,000	495,000	1,348,000
Lead	9,000	2,540,000	11,000	3,358,000
Mercury (flasks, 76 lb.)	1,000	55,000	4,000	331,000
Sand and gravel	2,617,000	2,253,000	1,347,000	1,212,000
Silver (oz.)	1,537,000	1,391,000	1,800,000	1,629,000
Stone	274,000	270,000	519,000	669,000
Talc	8,000	171,000	9,000	147,000
Tungsten concentrate (60% WO ₃)	1,000	*	1,000	*
Zinc	22,000	6,136,000	20,000	5,070,000
Other minerals		5,685,000		3,632,000
Total		\$48,499,000		\$37,372,000

*Value included with other minerals.

items whose value exceeded \$100,000. Data for 1951 were not yet available. Nevada ranks 2nd among the states in the production of diatomite and magnesite, and stands 30th in value of mineral output, with 0.41% of the U.S. total.

New Brunswick. Second largest of the four Atlantic provinces of Canada, New Brunswick entered the confederation in 1867. Area: 27,985 sq.mi. Pop. (1951)

515,697.

History.—Liberal premier John B. McNair called the final session of the 41st provincial legislature on Feb. 19, 1952. The agenda included more than 150 separate bills completing a three-year revision of the provincial statutes. The 1947 federal-provincial five-year tax agreement was renewed. In September McNair called an election with nearly a year of his term still to run. The returns were surprising: from 47 seats in the 1948 election, the Liberals dropped to 16; from 5 seats the Conservatives rose to 36. Defeated largely because of their 4% sales tax to finance education and social services, imposed in 1950, the 17-year rule of the Liberals had ended; Conservative Hugh John Flemming was named premier.

Education.—Latest available statistics for provincially controlled schools were for 1948: total enrolment, 98,331; average daily attendance, 81,057; teachers, 3,019; total revenue, \$7,562,848.

Finance.—Following the 1951 change-over in the province's fiscal year, receipts and expenditures were available only for the April 1-Dec. 31, 1951, period. Receipts were \$38,176,652; expenditures were \$33,586,602. Main sources of revenue: federal grants, \$9,900,000; gasoline tax and motor vehicle fees, \$7,900,000; social service and education tax, \$5,600,000; liquor commission, \$4,600,000. Main expenditures: public works, \$7,300,000; old-age pensions, \$5,900,000; education, \$4,400,000; municipal subsidies, \$1,500,000.

Agriculture.—The biggest news on the agricultural front in 1952 was the potato boom, with March prices rising to as high as \$8.50 per barrel, which was reminiscent of the all-time high of \$10 per barrel during World War I. However, the total returns to farmers were limited by the fact that the 1951 crop acreage had been decreased by 10% because of poor prospects at that time.

Forestry.—Producers shipped 2,000,000 cords of pulpwood during the 1948-51 period, which was exceeded among the provinces only by Ontario. After a slump, the pitprop industry revived during the winter of 1951-52. A rapid spread of spruce budworm threatened to destroy more than 4,000 sq.mi. of heavy forest. Intense aerial spraying was undertaken to halt the infestation.

Fisheries.—Statistics of 1951 revealed that the provincial fishing industry had reached a \$22,000,000-per-year status (compared with \$5,000,000 in 1938).

Minerals.—Mineral production in 1951 passed the \$10,500,000 mark for the first time in provincial development. The major factor was coal production of 651,100 tons worth \$4,874,000. The search for base metals was accelerated by the presence of 20 companies actively prospecting. (C. Cy.)

New Caledonia: see PACIFIC ISLANDS, FRENCH.

Newfoundland and Labrador. A province of Canada, Newfoundland joined the confederation in 1949. Area: Newfoundland Island, 42,734 sq.mi.; Labrador, c. 112,000 sq.mi. Pop.: Newfoundland (1951) 361,416; Labrador (1951) 7,890.

History.—Economic development continued to hold the centre of the provincial stage during 1952, with the Liberal government of J. R. Smallwood running into increasing criticism of its projects. Some of the criticism took political shape when the Liberals lost the ridings of Ferryland and St. John's West in by-elections to the Conservatives, who increased their legislative representation from four to six in the 28-seat house. Despite this evidence of opposition, Smallwood continued to press his economic development program by the use of provincial surpluses: he revealed that in 1951 Newfoundland salaries and wages totalled \$150,000,000 against an estimated \$200,000,000 for 1952. To spur mineral development the premier created a department of mines separate from the department of natural resources.

The provincial economy was improved by the \$200,000,000 spent by the United States government on its military bases at Fort Pepperrell, Hamon and Argentia.

Education.—School attendance increased from 75,006 in 1949 to 84,000 for the 1951-52 school year. The provincial Memorial university began operating full scale.

Transportation.—Gander airport was improved by the creation of longer runways and more living and administrative accommodation. The Canadian National railways spent \$2,000,000 to improve the Newfoundland section of its system, but the reduced travel rates so stimulated business that passenger service was hard put to cope with it. Although the federal government had placed \$1,000,000 on account with the provincial government for construction of the island section of the trans-Canada highway, little work was done.

Finance.—The provincial treasurer announced a \$1,300,000 surplus on current account at the end of March 31, 1952, fiscal year, and budgeted for a \$6,300,000 surplus on current account for 1952-53. He also announced a \$15,500,000 surplus in the capital account on March 31, 1952, in spite of having spent \$11,000,000 on capital expansions during the period.

Fisheries.—Because of low fish prices, better paying employment ashore, and stiff competition from mechanized fishing trawlers, the old-time Newfoundland dorymen were decreasing in numbers. In 1948 there were 28,000 such fishermen; in 1952 there were only an estimated 17,000. The island fishing industry was forced to modernize, and was turning from traditionally hand-salted cod to fresh-frozen cod.

Industry.—By 1952 there were 11 government-sponsored industries in operation, producing such things as cement, gypsum board, birch flooring, plywood, machinery, leather, furniture, textiles, optical instruments and fish oil.

Minerals.—Spurred by \$33,000,000 of general mineral production in 1951, and by knowledge of rich deposits already unearthed, ten Canadian and U.S. mineral-exploration companies spent \$2,600,000 on prospecting; they discovered new potential mines of asbestos, gold, nickel, titanium and zinc. The world's biggest ore conveyor went into operation at the Wabana iron mine on Bell Island.

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New Guinea: see NETHERLANDS NEW GUINEA; PAPUA-NEW GUINEA; TRUST TERRITORIES.

New Hampshire. One of the New England states of the United States and one of the original group of 13, New Hampshire is popularly known as the "Granite state." Area: 9,304 sq.mi., including 287 sq.mi. of inland water. Population (1950 census) was 533,242, representing a gain of 41,718 or 8.5% over the population for 1940. In 1950, 306,806 persons, or 57.5% resided in urban territory and 226,436, or 42.5% in rural territory. There were 532,275 whites and 967 nonwhites, and 58,134 foreign-born whites. Capital: Concord, with pop. (1950) of 27,988. Other cities: Manchester, 82,732; Nashua, 34,669; Portsmouth, 18,830; Berlin, 16,615; Dover, 15,874; and Keene, 15,638.

History.—There was no session of the legislature in 1952. A major development was the decision of the U.S. government to proceed with the construction of the Portsmouth-Newington jet bomber base, the site for which had been the subject of a bitter dispute involving strong local opposition. It was estimated that the construction of this base would bring in 1,000 officers and 6,000 airmen and that the over-all personnel would mean an increase of the population of New Hampshire by 2½%.

By May, the New Hampshire Business Development corporation, established by the legislature in 1951, had been organized. Its purpose was to facilitate the granting of industrial loans, and 72 corporations subscribed \$65,000 in working capital and 50 lending agencies agreed to underwrite loans up to a total of \$715,000.

State officers in 1952 were: governor, Sherman Adams; secretary of state, Enoch D. Fuller; state treasurer, Winfield J. Phillips; adjutant general, Charles F. Bowen; attorney general, Gordon M. Tiffany; commissioner of education, Hilton C. Buley; commissioner of agriculture, Perley I. Fitts. Senate president Blaylock Atherton was named acting governor for a period of three months beginning Aug. 1, to enable Governor Adams to participate actively in Gen. Dwight D. Eisenhower's campaign for the presidency.

Education.—In 1951-52 there were 75,862 pupils enrolled in 511 schools in the state, the distribution being as follows: 1,046 pupils enrolled in rural schools; 2,975 pupils in public kindergarten classes; 48,034 pupils enrolled in elementary schools and in the elementary grades in combined elementary-secondary schools; 5,125 pupils in grades seven and eight in approved junior high schools; and 18,682 pupils in the ninth grade of approved junior high schools and in senior high schools. There were 3,142 full-time teachers, including 1,859 elementary, 1,237 secondary and 46 not classified as to teaching level. Total payments covering expenditures of school districts for the year ending June 30, 1951, were \$19,191,773.34, including \$855,862.62 for general expenses; \$5,827,161.69 for high schools, and \$12,508,749.03 for elementary schools. In 1949-50 Catholic parochial elementary schools had a total registration of 19,306, while other private elementary schools had a registration of 683. The total number of students enrolled in approved public academies, accredited secondary schools and other private secondary schools in the same year was 6,440.

Other state educational institutions were the University of New Hampshire at Durham; Keene Teachers college at Keene; and Plymouth Teachers college at Plymouth.

Social Insurance and Assistance, Public Welfare and Related Programs.—As of July 1952 the numbers and categories of cases receiving public assistance under the Social Security act were as follows: old-age assistance, 6,769 for the month, with expenditures of \$295,335; old-age aliens, 43, with expenditures of \$8,111; aid to dependent children, 1,290 families, representing 3,208 children, with expenditures of \$129,919; aid to needy blind, 299 cases, with expenditures of \$14,758; aid to permanently and totally disabled, 24 cases, with expenditures of \$1,278. Total obligations for direct relief and expenditures for public assistance were \$558,412 for July 1952, compared with \$667,441 for July 1951 and \$703,313 for Jan. 1952. In the fiscal year 1950 New Hampshire received \$3,085,000 in federal grants for public assistance, while in the same year payments by the state to recipients of public assistance amounted to \$6,645,000. The sum of \$5,139,000 was collected in contributions for unemployment insurance in 1950 and \$7,765,000 paid in benefits under state laws. Funds available for benefits at the close of 1950 amounted to \$19,863,000. In the week ending May 24, 1952, the state had 10,500 unemployed compared with 9,800 a year previously. The net appropriation for the operation of the state prison at Concord for the fiscal year ending June 30, 1953, was \$280,821.86; and for the Industrial School for Committed Minors at Manchester, \$232,520.75.

Communications.—At the end of 1949 there were 12,511 mi. of rural roads in New Hampshire, including highways under state, local and federal control. Disbursements from state highway funds for 1949 amounted to \$17,659,000. In 1949 there were 937 mi. of steam railways owned within the state compared with 1,002 mi. in 1940. At the close of 1949 there were approximately 36,000 business and 105,000 residential telephones in operation.

Banking and Finance.—As of March 31, 1952, there were in New Hampshire 51 national banks with deposits of \$192,208,000 and resources of \$215,885,000, compared with 51 banks with deposits and resources, respectively, on June 30, 1951, of \$185,182,000 and \$208,577,000. Fifty-seven state-chartered banks had on June 30, 1952, deposits of \$382,515,501 and resources of \$438,081,894, compared with 57 institutions reporting deposits and resources, respectively, of \$346,486,889 and \$413,532,250 on June 30, 1951. There were 24 state-chartered building and loan associations with assets of \$31,505,044, compared with 24 institutions with assets of \$28,248,416 for the year 1951. There were two federal savings and loan associations with combined assets of \$33,567,045. As of June 30, 1951, state-chartered savings banks and savings departments of trust companies reported deposits of \$344,728,489.47 which was \$204,079.93 less than the amount for the preceding year, 1950, which had marked an all-time high.

Cash receipts of the state treasury department for the fiscal year ended June 30, 1952, were \$88,863,703.98; cash disbursements, \$88,302,719.86. Cash balance, June 30, 1952, was \$4,996,265.24; cash balance, June 30, 1951, was \$4,435,281.12. The total net bond and note indebtedness on June 30, 1952, was \$22,065,803.13.

Agriculture.—The estimated acreage from which crops were harvested or hay cut, or which was planted in orchards, amounted to 383,000 in 1949. Cash receipts from farm marketings in 1950 amounted to \$64,148,000 with an additional \$554,000 in government payments. Value of farm products consumed at home amounted to \$5,785,000, thus bringing the total farm income to \$70,487,000.

Table I.—Principal Crops of New Hampshire

Crop	Indicated 1952	1951	Average 1941-50
Corn, bu.	598,000	602,000	551,000
Oats, bu.	148,000	180,000	233,000
Hay, tons	409,000	403,000	416,000
Potatoes, bu.	943,000	975,000	1,186,000
Apples, bu. (commercial)	600,000	1,216,000	857,000
Maple syrup, gal.	57,000	57,000	56,000
Maple sugar, lb.	14,000	14,000	20,000

Source: U.S. Department of Agriculture.

Manufacturing.—There were estimated to be about 1,075 manufacturing establishments in New Hampshire as of Sept. 1950, and approximately 83,000 persons employed as of Feb. 1951. A 1951 estimate reported that manufacturing pay rolls would probably exceed \$400,000,000 in that year. The estimated value added by manufacture in 1950 was \$306,932,000. The principal categories of manufactures were textiles, lumber products, paper, leather and leather products, and machinery. (W. E. Ss.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in New Hampshire in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available.

Table II.—Mineral Production of New Hampshire

Mineral	Quantity	Value	Quantity	Value
	1950		1949	
Sand and gravel (short tons)	1,713,000	\$ 226,000	2,001,000	\$ 237,000
Stone (short tons)	16,000	384,000	7,000	381,000
Other minerals		1,101,000		766,000
Total		\$1,711,000		\$1,384,000

able. New Hampshire ranks 46th among the states in the value of mineral output, with 0.01% of the U.S. total.

New Hebrides. This Anglo-French condominium consists of a group of about 30 islands and many islets in the western Pacific. Area: 4,633 sq.mi. Pop. (1946 census, partly est. native pop. only): 45,000; (Dec. 1949 est.,

nonnative pop.) British 436, French 1,230, Asiatics 1,828; (1951 est., total pop.) 49,000. Native population is Melanesian with Polynesian admixture. Religion: mainly pagan. Capital, Vila (pop. 1,200). Resident commissioners in 1952: British, H. J. M. Flaxman; French, P. Anthonioz.

History.—The New Hebrides suffered severely from a hurricane early in Dec. 1951: the death toll was 110, about 4,000 people were made homeless and many small craft were wrecked. The condominium estimates for 1952 made provision for a program of port, road and bridge improvement, but the heavy demands of reconstruction after the hurricane absorbed most of the available labour, and it seemed improbable that the program could be started before the end of the year. (K. G. B.)

Education.—Government primary schools (1951): two British, three aided Melanesian mission; various other mission schools.

Finance and Trade.—Currency: sterling and French. Budget (1952 est.): revenue £363,000; expenditure £324,000. Foreign trade (1950): imports £528,000; exports £1,419,000. Principal exports: copra, kauri pine.

New Jersey. New Jersey, the "Garden state," is one of the northeastern states of the United States bordering the Atlantic ocean. It was the third state to enter the union, approving the constitution on Dec. 18, 1787. It has an area of 7,836 sq.mi. of which 314 sq.mi. are inland water. The population in 1950 numbered 4,835,329, of which 4,186,207, or 86.6% was urban and 94.3% was white. The population of the capital, Trenton, was 128,009 in 1950; other large cities were Newark, 438,776; Jersey City, 299,017; Paterson, 139,336; Camden, 124,555; and Elizabeth, 112,817.

History.—Some of the more important measures approved by the legislature in 1952 were: a package of five related laws designed to meet the problem of the uninsured and financially irresponsible motorist, including a Motor Vehicle Security Responsibility law and an Unsatisfied Claim and Judgment Fund law; an increase in maximum unemployment and disability benefits from \$26 to \$30 per week; a series of laws which strengthened the existing narcotic legislation; and an "equal pay for equal work" law designed to eliminate discrimination against women in salaries. During the year the legislature created a number of new governmental agencies, including: an air safety commission with authority to investigate the safety of airports and aircraft at any time; a commission to promulgate a state building construction code and supervise its enforcement by municipalities and state agencies; a three-member state highway authority in the state highway department to finance, construct, operate and regulate "modern express highway" projects; a state law enforcement council to provide for continuing examination of law enforcement; and a commission to study transit facilities used by New Jersey commuters.

The chief officers during 1952 were Alfred E. Driscoll, governor; Lloyd B. Marsh, secretary of state; Theodore Parsons, attorney general; Walter T. Margetts, Jr., state treasurer; and Arthur T. Vanderbilt, chief justice.

Education.—Public school day enrolment totalled 562,280 for grades 1 through 8 in June 1952, enrolment for grades 9 to 12 was 157,742 and for special classes 6,704. The number of day school teachers was estimated at 29,266. The 4 universities, 9 liberal arts colleges, 8 professional and technical colleges and 10 junior colleges had a combined enrolment of 23,417 full-time and 16,636 part-time students in March 1952. The 6 state teachers' colleges had a total enrolment of 6,514, while the 40 professional and technical schools had 1,318 full-time and 3,116 part-time students. The state commissioner of education was Frederick M. Raubinger.

Social Insurance and Assistance, Public Welfare and Related Programs.—In July 1952 the state's welfare system cared for 13,476 patients in institutions for the mentally ill, while the county hospitals cared for an additional 6,410. The state institutions for the mentally deficient and epileptic contained 6,354 patients, tuberculosis sanatoria had 2,634 patients, 643 pupils were in training schools for juvenile delinquents and 218 veterans were in soldiers' homes. Old-age assistance recipients numbered 22,003 in July 1952. The number of children assisted by the board of child welfare totalled 20,177; 821 received blind assistance and the number of general assistance recipients was 13,748. The state prison and three reformatories for adult offenders contained 3,875

Table I.—Principal Crops of New Jersey

	Indicated 1952	1951	Average 1941-50
Corn, bu.	10,476,000	9,712,000	7,994,000
Wheat, bu.	2,080,000	2,106,000	1,481,000
Hay, short tons	467,000	467,000	431,000
White potatoes, bu.	4,625,000	7,476,000	11,462,000
Sweet potatoes, bu.	2,310,000	2,310,000	2,256,000
Asparagus, all purposes, 30-lb. crates	2,457,000	2,161,000	—
Green peppers, bu.	1,998,000	1,936,000	—
Tomatoes for fresh market, bu.	1,550,000	2,090,000	—
Tomatoes for processing, tons	242,000	316,000	—
Apples, bu.	2,050,000	3,318,000	2,460,000
Peaches, bu.	1,363,000	1,992,000	1,524,000

Table II.—Principal Industries of New Jersey

Industry	1950	1949
Chemicals and allied products	\$915,509,000	\$755,787,000
Food and kindred products	479,816,000	433,500,000
Electrical machinery	447,512,000	377,686,000
Machinery (except electrical)	350,916,000	319,351,000
Textile mill products	336,136,000	333,832,000
Fabricated metal products	311,355,000	262,085,000
Transportation equipment	296,498,000	226,326,000
Primary metal products	242,369,000	187,808,000
Apparel and related products	235,365,000	270,754,000
Stone, clay and glass products	189,679,000	136,993,000
Petroleum and coal products	186,828,000	128,990,000

inmates. Benefit payments to the jobless totalled \$5,164,357 during July 1952.

Communications.—The total highway mileage of New Jersey on Jan. 1, 1952, was 28,467, of which 6,100 mi. were unimproved. State and federal funds disbursed for roads totalled \$49,093,064 during the fiscal year 1950-51. Motor vehicle registrations totalled 1,698,138 in 1951. The 23 railroads operating within the state had a track mileage of 2,950 and a line mileage of 1,999 on Dec. 31, 1951. Civil, commercial and municipal airports numbered 77 in 1951.

Banking and Finance.—Deposits of the 139 institutions under the supervision of the state department of banking and insurance amounted to \$3,073,837,000 on June 30, 1952, an increase of \$132,644,000 over the previous June 30. The deposits of the 116 commercial institutions were \$2,362,293,000, an increase of 2.5%, while the deposits in the 23 savings banks showed \$711,544,000, an increase of 12%. The number of national banks in New Jersey numbered 201 on June 30, 1952, with total assets of \$2,859,235,000. The 466 state-chartered savings and loan associations had assets of \$721,352,209 on Dec. 31, 1951.

Agriculture.—In 1951 the total value of agricultural production was \$360,024,000. Cash income from crops amounted to \$119,069,000, from livestock \$240,029,000 and from government payments \$926,000. The value of the 19 crops for fresh market (excluding potatoes and strawberries) totalled \$30,316,000; the value of the crops for processing amounted to \$21,409,000.

Manufacturing.—Wages paid to manufacturing workers in 1951 totalled \$3,050,091,047; for the first quarter of 1952 they amounted to \$789,447,646. In March 1952, 813,085 workers were employed in manufacturing. (R. H. M.)

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in New Jersey in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available.

Table III.—Mineral Production of New Jersey

Mineral	1950		1949	
	Quantity (In short tons)	Value	Quantity	Value
Clay	602,000	\$1,278,000	537,000	\$1,314,000
Coke*	1,481,000	?	1,345,000	?
Iron ore	658,000	5,652,000	502,000	4,469,000
Manganiferous residuum	184,000	†	159,000	†
Marl (greensand)	4,000	304,000	6,000	277,000
Peat	26,000	186,000	26,000	181,000
Sand and gravel	7,620,000	8,636,000	5,555,000	6,982,000
Sandstone, ground	132,000	937,000	108,000	755,000
Stone	4,672,000	9,119,000	4,071,000	7,897,000
Zinc	55,000	17,259,000	51,000	14,443,000
Other minerals . . . . .	...	3,020,000	...	2,267,000
Total		\$46,391,000		\$38,584,000

*Values for processed materials are not included in the totals.

†Value included with other minerals.

New Jersey ranks 31st among the states in value of mineral output, with 0.39% of the U.S. total.

New Mexico. A state in southwestern United States, popularly known as the "Sunshine state," New Mexico was admitted to the union in 1912. Area: 121,666 sq. mi. (121,511 sq. mi. land, 155 sq. mi. water); pop. (1950): 681,187, a 28.1% increase over 1940; rural 339,298; urban 341,889; white 630,211; nonwhite 50,976. Capital, Santa Fe (27,998). Other cities: Albuquerque (96,815); Roswell (25,738); Carlsbad (17,975); Clovis (17,318); Hobbs (13,875); Las Cruces (12,325).

History.—The first Republican governor in New Mexico in 20 years took office in 1951. Otherwise the administration, legislative and congressional representation were Democratic. The

chief officers of the state during 1952 were: governor, Edwin L. Mechem; lieutenant governor, Tibo J. Chavez; secretary of state, Beatrice Bassett Roach; auditor, Robert Donald "Boh" Castner; treasurer, R. R. Grissom; attorney general, Joe L. Martinez; superintendent of public instruction, Tom Wiley.

The 1951 legislature rescinded the Indian liquor prohibition law, created a nine-member bipartisan legislative council and a board of educational finance for institutions of higher education and modified the primary law to provide for a preprimary nominating convention.

The gasoline tax was reduced from seven cents to six cents, and the Kit Carson Memorial state park was established at Taos.

Education.—For the school year 1950-51, 3,886 teachers served in municipal schools at an average salary of \$3,401.44, and 1,387 teachers in rural schools at \$3,006.18. The total pupil enrolment was 155,661 and total expenditures were \$35,310,483.50.

Social Insurance and Assistance, Public Welfare and Related Programs.—During the fiscal year ended June 30, 1952, a total of \$1,449,998.07 was paid for unemployment benefits; unemployed veterans received a total of \$2,389; and self-employed received \$600.

For the same fiscal year, 12,012 beneficiaries received \$3,825,000 from old-age and survivors insurance.

The penitentiary appropriation was \$400,000 for 635 inmates (Sept. 1); insane asylum \$1,200,000, 1,153 inmates (Sept. 1); Los Lunas mental hospital \$177,000, 120 inmates (Oct. 1); industrial school \$85,000, 130 inmates (Oct. 1); Girls' Welfare home \$190,000, 126 inmates (Oct. 1).

Communications.—New Mexico had an estimated 52,902 mi. of unsurfaced roads and 10,610 mi. of surfaced highways, both county and state, in 1952. The state highway department expended \$22,728,547.39. Steam railway companies operated 2,495 mi. of main track. There were 97 airports, 1,872 mi. of controlled civil airways and 4 scheduled air carriers. There were about 142,700 telephones.

Banking and Finance.—On March 31, 1952, there were 26 national banks with total deposits of \$284,208,000; loans \$86,365,000; investments \$129,026,000; and on Dec. 31, 1951, there were 25 state banks with deposits of \$112,518,884.84; loans \$35,873,885.22; investments \$44,497,061.16.

Total resources of 12 building and loan associations in 1951 were \$15,383,884.60 and of 7 federal savings and loan associations \$24,901,814.26.

The total of all state receipts for the fiscal year ended June 30, 1952, was \$112,342,911.40; total disbursements \$106,450,064.50; and total bonded debt \$19,463,000.

Agriculture.—The total estimated value of agricultural production in 1951 was \$109,229,000; acreage harvested 1,398,000. Livestock was estimated at \$246,124,000 (Jan. 1, 1952).

Table I.—Principal Crops of New Mexico

Crop	Indicated 1952	1951	Average 1941-50
All hay, tons	454,000	418,000	435,000
Sorghums, grain, bu.	2,115,000	3,410,000	4,311,000
Wheat, bu.	953,000	1,094,000	4,105,000
Corn, bu.	1,118,000	1,116,000	2,045,000
Beans, dry, bags	120,000	140,000	584,000
Cotton, bales	300,000	273,000	157,000
Oats, bu.	660,000	518,000	893,000
Barley, bu.	506,000	430,000	610,000
Broomcorn, tons	3,600	4,400	6,330
Peanuts, lb.	6,650,000	6,020,000	8,717,000
Apples, bu.	770,000	825,000	659,000

Source: U.S. Department of Agriculture.

Manufacturing.—Manufactured products were valued at \$102,997,000 and an average of 13,512 employees received \$38,971,000 in wages and salaries in 1950. (F. D. R.)

Mineral Production.—Table II shows the tonnage and value of those mineral commodities produced in New Mexico in 1949 and 1950, listing all items with value exceeding \$100,000. Data for 1951 were not yet

Table II.—Mineral Production of New Mexico

Mineral	1950		1949	
	Quantity (Short tons, except as noted)	Value	Quantity	Value
Coal	727,000	\$ 3,917,000	1,004,000	\$ 5,227,000
Copper	66,000	27,581,000	55,000	21,823,000
Fluorspar	20,000	742,000	13,000	446,000
Gold (oz.)	3,000	119,000	3,000	114,000
Lead	4,000	1,121,000	5,000	1,470,000
Manganiferous ore	74,000	66,000	66,000	—
Natural gas (000 cu. ft.)	212,909,000	6,387,000	204,961,000	5,985,000
Natural gasoline (bbl.)	3,021,000	8,898,000	2,733,000	7,728,000
Petroleum (bbl.)	48,001,000	115,100,000	47,645,000	116,250,000
Petroleum gases (bbl.)	1,998,000	2,061,000	1,292,000	1,462,000
Potassium salts (K ₂ O equiv.)	1,073,000	31,944,000	932,000	27,950,000
Pumice	351,000	1,110,000	351,000	1,026,000
Sand and gravel	938,000	923,000	883,000	611,000
Silver (oz.)	339,000	306,000	381,000	345,000
Stone	365,000	244,000	138,000	106,000
Zinc	29,000	8,311,000	29,000	7,278,000
Other minerals . . . . .	...	1,530,000	...	1,004,000
Total		\$210,294,000		\$198,825,000

*Value included with other minerals.

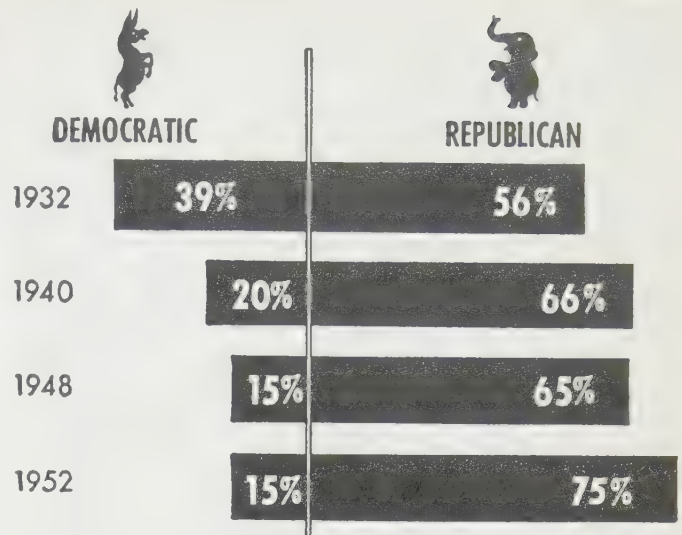
available. New Mexico ranks 1st among the states in the production of potash, 2nd in manganese ore and 3rd in copper, and stands 14th in the value of mineral output, with 1.77% of the U.S. total.

Newspapers and Magazines. U.S. Newspapers.— Coverage of an exciting presidential campaign, with the Korean war in the background, monopolized the news in United States newspapers during 1952. But in the business offices, rising publishing costs and the boom of the new teletypesetter also received much attention. Hundreds of newsmen reporting the two presidential conventions in Chicago in July faced the new competition of television, which joined with radio in carrying the convention story to the public. Campaign surveys showed newspaper editorial pages preponderantly supporting the Republican candidate. One poll of about half the dailies reported 75%, representing 81% of the circulation, favouring Republican Dwight D. Eisenhower, 15% supporting Democrat Adlai E. Stevenson, with about 10% neutral. In comparison, the largest Republican support in any previous election was 66% in 1940 opposing Pres. Franklin D. Roosevelt's third term. The 1952 record was credited to the switch of neutral or Democratic southern dailies. Another poll of about 3,000 weekly newspapers in 47 states reported 66% Republican.

Teletypesetter and wire delivery of news on tape to operate typesetting machines, which started in 1951, continued to be the leading innovation. The year end was expected to see teletypesetter circuits in all states and half the daily newspapers using the service. Already the International Typographical union had become concerned over the labour-saving aspects and had signed its first compromise contracts in Rockford, Ill., on May 8—after a seven-week strike—and in Harrisburg, Pa., on July 1. These agreements limited use of tape to spot news and banned feature copy. The C.I.O. American Newspaper guild in July voted to study the effect of the teletypesetter on reporters. On Aug. 5 Associated Press started radio-teletype news service linking all of South America. The effect of television on newspaper circulation led to concern, but surveys showed no serious result so far.

A \$10 increase in June took the price of newsprint to an average of \$126 a ton—the second rise in a year, which meant a 26% increase in 19 months and a rise of \$50,000,000 a year in newspaper costs. On the west coast 43 newspaper publishers joined forces to build a \$5,000,000 paper mill at Tacoma, Wash., but a 12-year effort to make newsprint of Louisiana "bagasse" was declared unsuccessful.

For the sixth year, newspaper costs increased faster than income. The profit margin of the average daily was down 17% from that of 1951, and narrower than in any year since 1945. Circulation totals, which reached the record-breaking figure of 14,000,000 in 1951, seemed to be levelling off; large city morning and Sunday newspapers declined almost 1% although the evening papers of smaller cities held or increased. Street sale and subscription prices were increased everywhere; New York tabloids went to 4 cents and the Sunday *Times* to 20 cents. Advertising volume tended to be slightly above 1951 except as it dipped during the summer steel strike; although local advertising held up better than general advertising, it was expected that the high total of \$513,000,000 in national advertising in 1951 would be approached. Advertising rates were increased; members of the Inland Daily Press reported their rates 32% above those of 1945. The number of weekly newspapers was reported to be down to 8,892 with an average circulation of 1,943 per newspaper and a total circulation of 17,269,183. Because the number of weeklies using "ready prints" or "patent insides" was down to 1,412, Western Newspaper union on March 29 discontinued its printed service which dated from 1865 and once supplied 7,000 weeklies with 1,250,000 weekly copies printed in 27 plants. Among other rising costs of the year was an increase of from 6% to 20% on Western Union press rates.



NEWSPAPER SUPPORT of Democratic and Republican candidates in U.S. presidential elections (Source: Editor & Publisher)

The longest strike of the year was on the *Tacoma News Tribune* (Wash.) when A.F. of L. pressmen and C.I.O. guildmen tied up the newspaper for 17 weeks, ending Aug. 12. The International Typographical union convening in October voted a 2½% assessment on its 85,000 members to raise a \$10,000,000 special defense fund, part of which was to continue the 11 Unitypno newspapers that the union was publishing in various cities at a combined loss of \$3,500,000. Giving a 284-to-53 vote of confidence to its president, Woodruff Randolph, the union voted to continue fighting the closed-shop ban of the Taft-Hartley law, following the Dec. 27, 1951, order of the U.S. seventh circuit court enjoining the union to obey the law. The American Newspaper guild convening in July voted a new by-law giving the national office more authority over local guilds. In February John L. Lewis' United Mine workers "catch-all" district 50, attempting to organize newspaper printers, closed the *Hazard Herald* (Ky.).

The most notable newspaper lawsuit in 1952 was the prosecution of the *New Orleans Times-Picayune* and *States* by the federal department of justice for violation of the Sherman Anti-trust act with their "unit advertising rate"; on May 17, a Louisiana federal court found the newspapers guilty of unfair competition with the *New Orleans Item*, but the decision was to be appealed. This decision followed anti-trust prosecution of the *Mansfield News-Journal* (O.) on Jan. 15 and of the *Lorain Journal* (O.) on Dec. 11, 1951. The department of justice also began investigating the advertising practices of the *Kansas City Star* and *Times* (Mo.), and newspaper publishers were concerned because these decisions would become a pattern for 170 morning-evening newspaper combinations elsewhere. Another notable case was the trial in Lake Charles, La., of five newspapermen on the charge of defaming 16 public officials and 3 gamblers in an antigambling crusade; the newsmen were acquitted in April after a long trial. In two decisions newspapers were upheld in discharging employees for being members of the Communist party. Discussion of the right of newspapers to examine public records resulted in flare-ups in various states; one brought a contempt action against the *Atlanta Constitution* (Ga.) in April. The *China Daily News*, foreign language newspaper of Chicago, Ill., was indicted in May for violating "the trading with the enemy act."

The 111-year-old *Cincinnati Inquirer* (O.) was sold on June 7 by the estate of John R. McLean for \$8,000,000 to the employees of the newspaper. The 121-year-old *Boston Post* (Mass.), owned by the Edwin A. Grozier family for 61 years, was sold in

June to John Fox, Boston and New York financier. The Ridder brothers, owners of 12 newspapers and radio stations in New York city, St. Paul, Minn., Duluth, Minn., and other cities, bought the *San Jose Mercury and News* (Calif.) on July 24 and the *Long Beach Press-Telegram and Independent* (Calif.) on Aug. 10. The eight Speidel newspapers, capitalized at \$6,000,000 and published in six states, were set up as employee owned on June 20 by John Ben Snow. The *Johnstown Tribune and Democrat* (Pa.) were merged into an all-day newspaper on Sept. 8. Joint publishing operation was started in September by three newspapers of Salt Lake City—the *Tribune*, *Deseret News* and *Telegram*. Robert L. Smith on Sept. 1 bought the tabloid *Los Angeles Daily News* (Calif.) from Manchester Boddy; it had been founded in 1923 by Cornelius Vanderbilt.

Magazines.—A boom of men's magazines, stressing adventure and exposé, was the 1952 innovation; led by *Esquire*, numerous titles such as *Stag*, *Male*, *Cavalier*, *Adam*, *Man's Day*, *Man's Life*, *Mr. America*, *Saga*, *Fury*, grossed 9,000,000 newsstand sales. Comic books with more than 300 titles continued to be the biggest business on the newsstands; rising costs reduced their size and threatened to raise the 10-cent price. Paper became more plentiful and dropped somewhat in price, to an average of \$180 a ton. Advertising increased sharply early in the year but suffered a midyear slump; earlier, a total for the year of \$550,000,000, 11% over 1951, was forecast, as magazine advertising was rising faster than either newspaper or radio advertising. Circulation went up as much as 6% early in the year but later declined; *Life* led with 5,358,000, followed closely by *Ladies Home Journal*, *Woman's Home Companion*, *Saturday Evening Post* and *McCall's*, all far above 4,000,000 each. Many magazines raised copy prices from 25 to 35 cents. The first 10% rise in postal rates went into effect, and slow postal delivery led one magazine group to try house-to-house delivery.

(G. M. Hy.)

The National Press Photographers association embarked on the first stage of a co-ordinated nation-wide educational program for the promotion of photo-journalism in 1952. In collaboration with Encyclopædia Britannica, Inc., and selected colleges and schools of journalism throughout the country, the association conducted three short courses in the field of camera reportage. These courses, which were held at the University of Kansas, Boston university and the University of Wisconsin in 1952, were designed to supplement educational ventures for photo-journalism already established at certain institutions of higher learning throughout the United States.

The pattern for this national program, conducted by and for press photographers, had been set by independent short courses already established at Kent State university, Kent, O.; the Southern Short course, University of North Carolina, Chapel Hill; the N.P.P.A. Region 1 seminar at Boston university (Mass.); the University of Missouri Photo workshop, Jefferson City; the Michigan Press Photography conference, Michigan State college, East Lansing; and the Press Photographers' Short Course, the University of Illinois, Urbana. (X.)

Canada.—During 1952 the Canadian Press completed its teletypesetter service to 25 Ontario dailies. Plans were under way for conversion next in Manitoba and Saskatchewan, then Alberta and British Columbia, and finally the Atlantic provinces.

The Roy Thomson chain of dailies expanded to 15 with the purchase of the *Vancouver News-Herald* (B.C.) from the *Vancouver Sun*. In October J. K. Cooke, owner and publisher of *New Liberty* magazine, purchased *Saturday Night* and *Canadian Home Journal*, to make him a leading national magazine publisher in Canada. An advertisement in October announced that all the shares of the daily newspaper *Toronto Telegram* (Ont.) were for sale and that tenders would be received up to Nov. 18.

Le Devoir of Montreal, Que., was the first Canadian daily to increase its price to 10 cents per copy.

During the year, the *Windsor Star* (Ont.) was fined \$1,000 for contempt of court upon the publication of an article which "made laughing stock of court procedure." The *Vancouver Sun* (B.C.) won an appeal against a judgment for \$1,025 which had been awarded when a reader suffered a nervous breakdown after reading a news item (which turned out to be false) that members of her family had been killed in a car-train crash; the British Columbia court of appeal ruled that an inaccurate news report was not actionable unless it was published with malice.

On March 23, 1952, the *Royal Gazette*, Halifax (N.S.), the oldest continuous newspaper publication in North America, celebrated its 200th anniversary. (C. Cy.)

Great Britain.—The year 1952 saw the virtual end in Britain of the newsprint famine, but some newspapers were prevented by the high price of paper from taking full advantage of the permitted increase in their size. Figures indicated, however, that the downward trend of circulations resulting from the 1951 rise in prices had been arrested.

The equalized price of newsprint was increased on Jan. 1, 1952, by £1 to £66 a ton, which proved to be the highest peak reached. In February the ministry of materials decided to fix a ceiling price for pulp imported from Scandinavia. The equalized price was reduced in March to £63 2s. 6d. and again in June to £55 15s.

The general easing in the newsprint supply position turned the sellers' market into a buyers' market almost overnight. From Aug. 24 freedom of consumption was restored. Because of the continued high price of newsprint, the newspapers were slow to take advantage of these improvements in supply. Several national dailies made larger spaces available to advertisers.

At the beginning of 1952 restrictions on deliveries of mechanical printing paper deprived publishers of periodicals of from 15% to 20% of their paper supplies. The restrictions were withdrawn in June and the only limiting factor to supplies of paper was the amount of wood pulp imported, this being governed by the amount of currency made available by the treasury and the price of the wood pulp in Scandinavia. The periodical press was hampered also by advances in the price of paper, rises in wages and salaries and printing charges. In spite of this the trend of sales of periodicals and magazines showed that a number were getting back sales lost in 1951 because of selling price increases.

Commonwealth and Europe.—From South Africa was reported the disappearance of the "last two liberal and progressive journals in South Africa," the weekly *Forum* and the monthly *Common Sense*, both more than ten years old. The Capetown weekly newspaper, the *Guardian*, was banned under the new Suppression of Communism act. *Die Volksblad*, a Bloemfontein newspaper, was fined for contempt of the appellate division of the South African supreme court.

A report of the United Nations Educational, Scientific and Cultural organization showed that France published 164 daily newspapers, Britain 121, Switzerland 117 and Belgium 76; the highest proportion of readers was in Britain where 600 newspapers were sold daily to every 1,000 people.

The International Press institute, an organization of editors of the free world, held its first general assembly in Paris. The institute noted a "growing tendency towards government restriction of legitimate news sources, even in democratic countries with a strong tradition of a free press." An International Federation of Journalists was launched at a conference in Brussels. Its constitution restricted membership to those national organizations of trade unions "dedicated to the freedom of the press."

The Allied council in Austria protested against the action

Number of Daily Newspapers in the World, 1950-51

Except as indicated, the following data were derived from enumerations of the lists in *Editor & Publisher International Year Book, 1951* [1951] and represent papers in course of publication in the latter part of 1950. Papers published less than five times a week are not included in this table.]

Afghanistan*	15	Gibraltar†	1	Norway*	209
Alaska	7	Gold Coast†	9	Pakistan†	41
Albania*	12	Greece*	60	Panamá	6
Algeria*	10	Greenland*	1	Paraguay	6
Anglo-Egyptian		Guatemala	5	Peru	52
Sudan (condominium)†	4	Haiti	6	Philippines, Republic of the	13
Angola*	3	Hawaii	4	Poland	34
Argentina	182	Honduras	2	Portugal*	33
Australia†	62	Hong Kong†	15	Portuguese India†	6
Austria	34	Hungary*	53	Puerto Rico	2
Azores*	7	Iceland	5	Réunion*	2
Baleares Islands†	5	India†	300	Rhodesia, Southern†	2
Belgian Congo†	4	Indochina*	30	Romania	40
Belgium	42	Indonesia, United States of*	81	Salvador, El	8
Bermuda†	2	Iran*	35	Saudi Arabia*	2
Bolivia	7	Iraq	25	Scotland†	16
Borneo†	3	Ireland, Northern†	5	Seychelles†	1
Brazil†	254	Israel	14	Sierra Leone†	4
British Guiana†	3	Italy*	92	Singapore†	16
British Honduras†	1	Japan†	193	Somaliand*	2
British West Indies†	14	Jordan*	6	South Africa, Union of†	18
Bulgaria	9	Kashmir*	7	Spain	105
Burma†	31	Kenya†	4	Sweden	129
Canada	95	Korea, South*	48	Switzerland	117
Cayman Islands†	5	Lebanon*	40	Syria*	35
Ceylon†	8	Leeward Islands*	4	Tanganyika†	3
Channel Islands†	3	Liberia†	1	Tangier*	2
Chile	52	Libya†	2	Thailand*	22
China*	450	Luxembourg*	5	Togoland*	1
Colombia	26	Macao*	1	Trieste*	5
Costa Rica	6	Madagascar*	4	Tunisia*	9
Cuba	51	Madeira*	5	Turkey*	72
Cyprus†	12	Malaya, Federation of†	20	Union of Soviet	
Czechoslovakia	20	Malta†	4	Socialist Republics†	500
Denmark*	131	Man, Isle of†	1	United States (continental)?	1,873
Dominican Republic	5	Martinique	1	Uruguay	30
Ecuador	26	Mauritius†	9	Vatican City*	1
Egypt*	50	Mexico	101	Venezuela	24
Eire†	8	Morocco*	11	Virgin Islands	3
England†	108	Mozambique*	3	Wales†	4
Fiji Islands†	1	Netherlands*	133	Windward Islands*	3
Finland	58	Netherlands Antilles	5	Yugoslavia	18
France*	180	New Caledonia*	1	Zanzibar†	1
French Equatorial Africa*	2	New Zealand†	48		
French West Africa*	5	Nicaragua	10		
Germany	399	Nigeria†	8		
				Total	7,300

*United Nations Educational, Scientific and Cultural Organization, *Mass Communications: Press, Radio, Film* (Paris, 1950).

†Benn Brothers, Ltd., *The Newspaper Press Directory and Advertisers' Guide* (London, 1951).

‡Diplomatic sources—embassies and consulates.

§Estimates. U.S.S.R. information agencies do not differentiate between dailies and papers and bulletins published one to four times a week.

|| Estimate. See *India Press Yearbook for 1950* (Madras, 1950). *Benn's Newspaper Press Directory* lists by name 217.

¶Japan Newspaper Publishers and Editors Association, *The Japanese Press 1951* (Tokyo, 1951).

¶¶N. W. Ayer & Son's *Directory of Newspapers and Periodicals, 1952* (1952). Data are for 1951. Data on U.S. newspapers in *Editor & Publisher International Year Book* are limited to English language dailies of general circulation; this reduces the Ayer total by more than 100.

of the Soviet element who had unilaterally banned more than 100 newspapers in the towns and villages and confiscated thousands of copies of newspapers and magazines. Under a press decree passed in 1945 the Allied council was the only agency competent to confiscate, or prohibit the publication, circulation or distribution of newspapers and periodicals in Austria.

Because of declining circulation of French Communist daily newspapers, an appeal was made for 200,000,000 fr. "for the defense of the Communist and democratic Press." The pro-Communist weekly *Action*, founded as an underground periodical in 1943, ceased publication because of financial difficulties. André Stil, editor of the Communist newspaper *L'Humanité*, was arrested and imprisoned for nearly two months under a law of 1848 on demonstrations. His newspaper had published an article calling on people to protest against the arrival of Gen. Matthew Ridgway, the new supreme commander, Allied forces, Europe.

Draft proposals for new press laws to safeguard the freedom of the press and ensure the accuracy of news reported were published in the German Federal Republic. The *Overseas Weekly* of Frankfurt, published for Americans in Europe, cut its selling price by half. Publication of the *Berliner Morgenpost*, suppressed by Hitler, was resumed after an interval of nearly 20 years; it absorbed the *Berliner Anzeiger*.

A bill introduced into the Italian parliament set forth the government proposals for the control of the press, which empowered the police to sequester offending periodicals in certain cases; established that copies of all publications should be deposited with the authorities before sale; and provided for penalties for those who prevented by threats or violence the

publication and sale of approved periodicals. The Rome correspondent of the Moscow *Pravda* was expelled from Italy and the head of the Polish news agency in Rome was also requested to leave.

A faculty of journalism was set up at Moscow university. The publication of the Russian-language magazine *Amerika*, produced by U.S. authorities for distribution in the U.S.S.R., was suspended because of progressive restrictions on distribution and on the free sale of the periodical. At the same time the U.S.S.R. was asked to suspend Soviet embassy publications issued in the United States. (See also ADVERTISING.)

BIBLIOGRAPHY.—Harold Herd, *The March of Journalism. The Story of the British Press from 1622 to the Present Day* (London, 1952); *The History of The Times*, vol. IV; *The 150th Anniversary and Beyond 1912-1948*, in two parts (London, 1952); Sir Philip Gibbs, *The Journalists' London* (London, 1952).

(D. Hn.)

New York. New York, one of the original 13 states, has been known since 1784 as the "Empire state." Northernmost of the middle Atlantic states, it covers an area of 49,576 sq.mi., of which 1,632 sq.mi. are water. It is the

most populous of the states of the United States, the 1950 census giving it a total of 14,830,192 persons, or 9.8% more than in 1940. The principal cities and their 1950 populations are: New York 7,891,957; Buffalo 580,132; Rochester 332,488; Syracuse 220,583; Yonkers 152,798; Albany (state capital) 134,995; Utica 101,531; Schenectady 91,785; Niagara Falls 90,872; Binghamton 80,674.

History.—The 1952 session of the legislature passed a total of 1,209 bills, of which 374 were vetoed by Gov. Thomas E. Dewey and 835 became law. Most controversial was the Metcalf-Hatch bill permitting use of homeless cats and dogs for research in behalf of medical science. Under the new law, those animals may be requisitioned by health officers, after confinement in a public pound, and turned over to authorized laboratories for medical experimentation.

Despite vigorous opposition by a farm bloc, a bill legalizing sale of yellow oleomargarine was passed in both houses. Effective July 1, 1952, the law permits manufacture and sale of yellow oleomargarine when packaged or stamped as such.

In an effort to increase New York city's water supply, a law was enacted authorizing the state to join with New Jersey, Pennsylvania and Delaware in developing the Delaware river basin. The bill provided for a joint commission to study and proceed with the \$550,000,000 project, if all states concur and the project receives congressional approval.

The legislature continued the state civil defense commission and reappropriated \$25,000,000 in state aid for public bomb shelters. Another bill authorized any city or county, with the approval of the commission, to issue up to \$30,000 in bonds a year to meet civil defense expenses.

Automobile liability insurance requirements were expanded to include all drivers under 21 years of age. Operation of an uninsured car by a minor was banned. Narcotics laws were tightened by several measures. The new State Thruway authority was granted the right to license and control billboard and other advertising within 500 ft. of the new highway. Ground was broken in Sept. 1952 for the third tube of the Lincoln tunnel, to be built by the Port of New York authority as another vehicular link between New York and New Jersey. Cost of the additional tube was estimated at \$90,000,000.

An increase from \$26 to \$30 a week maximum benefits was granted under the Sickness Disability Insurance law.

The state's \$69,800,000 veterans' emergency housing program, which provided temporary accommodations for more than 70,000 persons during a period of seven years, as well as quarters for about 100,000 veteran students, was being gradually terminated. The time for liquidation of the veterans' emergency housing projects was extended one year.

As of March 31, 1952, \$577,355,400 of the over-all \$735,000,000 capital loan fund authorized by the state for public housing for low-income families had been earmarked for 67 low-rent state-aided public housing projects. A total of \$145,755,640 was paid to 251,279 living veterans in New York state in compensation and pensions in the year ending June 30, 1951, while dependents of 60,728 deceased veterans of New York state received \$43,167,598 in such benefits during this period.

The New York State Veterans' camp at Mt. McGregor, 9 mi. N. of Saratoga Springs, provided care in 1951 for 2,947 veterans recuperating from acute illnesses. Since its opening in 1945, through 1951, the camp had aided 14,613 patients.

Thomas E. Dewey (Rep.) was re-elected for a third four-year term Nov. 7, 1950. Other state officials elected then were: lieutenant governor, Frank C. Moore; comptroller, J. Raymond McGovern; and attorney general, Nathaniel L. Goldstein.

Education.—At the close of the school year ending June 1951 there were 5,124 elementary public schools with 1,371,182 school children; there were 142,266 pupils in 163 junior high schools and 477,341 students in 821 public high schools. There were also 1,173 private and parochial schools with 417,211 pupils in the elementary grades and 81,941 pupils in 296 secondary schools. The enrolment at universities, colleges and other institutions of higher learning in the state in 1951 was 271,976, excluding 170,433 summer and extension students.

Special state schools included 6 Indian schools, 6 agricultural and technical institutes, 5 institutes of applied arts and sciences, 133 schools for nursing, 3 institutes for the blind and 6 for the deaf.

Social Insurance and Assistance, Public Welfare and Related Programs.—A total of 1,280,000 persons were given assistance, care or service at public expense during 1951, a decrease of 23,000 from the preceding year. During 1951, expenditures for public welfare totalled \$419,744,000. Of this sum, the federal government's share was \$90,164,000; the state's share, \$146,498,000; and the local governments' share, \$183,082,000. An additional 2,480,000 persons were given assistance or care in New York state as private charges. During 1951, the state certified 7,988,580 unemployment insurance claims (8,530,490 weekly units) totalling \$189,473,492. On Dec. 31, 1951, the New York State Unemployment Insurance Trust fund had a balance on hand of \$1,060,515,637.

The state department of correction administers 17 institutions. In 1951 the average yearly population of the state's correctional institutions was 17,347. The average cost for the care and maintenance of institutional inmates during the fiscal year was \$1,552.95 per person.

For the care and treatment of the mentally ill, mental defectives and epileptics, the state in 1951 maintained 20 hospitals including a psychiatric institute and hospital for research and teaching, a psychopathic hospital for observation and temporary treatment of mental patients, six schools for mental defectives and a colony for epileptics.

Communications.—New York state had 88,068 mi. of road on Jan. 1, 1952, of which 14,287 were state highways (exclusive of the thruway, parkways, city and village streets) and 72,661 were county and town roads. Hard-surfaced roads totalled 67,025 mi. Forty-six railroads operated 7,529 mi. of roadbed in the state.

The state maintains a system of more than 500 mi. of canals. Including the rivers and lakes which are part of the New York State Barge Canal system, the total length is more than 800 mi. During 1951 the three major commercial airports of the New York metropolitan area (Idlewild, La Guardia and Newark) handled a combined volume of 5,587,495 passengers. There were 44 seaplane bases and 254 airports operating in the state in 1951. There were 4,308 civil aircraft and 28,382 licensed pilots registered during the year.

Banking and Finance.—At the end of 1951 there were 752 banks with total resources of \$52,238,535,000 and deposits of \$46,465,923,000 operating in the state. In addition, there were 235 savings and loan associa-

Table I.—Principal Crops of New York

Crop	Indicated		Average 1941-50
	1952	1951	
Corn, bu.	28,755,000	28,116,000	25,248,000
Wheat, bu.	12,880,000	10,319,000	8,504,000
Oats, bu.	26,425,000	36,240,000	23,365,000
Barley, bu.	1,890,000	2,516,000	2,693,000
All hay, tons	5,249,000	5,678,000	5,748,000
Beans, dry (100-lb. bags)	1,500,000	1,529,000	1,405,000
Tobacco, lb.	280,000	420,000	980,000
Potatoes, bu.	29,180,000	27,900,000	33,183,000
Apples, bu.	11,610,000	17,291,000	14,591,000
Peaches, bu.	1,311,000	1,312,000	1,247,000
Pears, bu.	389,000	486,000	679,000
Grapes, tons	54,600	60,700	55,540
Cherries, tons	24,100	36,200	19,580
Maple sugar, lb.	31,000	43,000	82,000
Maple syrup, gal.	415,000	466,000	570,000

Source: U.S. Department of Agriculture.

Table II.—Principal Industries of New York State, 1950

Industry	Value added (In millions)		Number employed
	1952	1951	
Apparel and related products	\$1,648	\$1,648	369,900
Printing and publishing	1,255	1,255	167,700
Food and kindred products	1,051	1,051	144,600
Machinery (except electrical)	728	728	112,600
Chemicals and allied products	706	706	67,200
Instruments	570	570	83,900
Electrical machinery	565	565	95,300
Transportation equipment	517	517	85,200
Primary metal products	515	515	73,700
Textiles	513	513	94,600

Source: U.S. Bureau of the Census.

tions with \$1,650,000,000 of total assets and \$1,406,000,000 due private shareholders.

For the fiscal year ending March 31, 1952, the financial status of the state was as follows: general revenue, \$996,217,779; expenditures, \$993,345,469; total operating surplus, \$2,872,310; total state debt, \$706,388,950. Capital Construction fund (formerly Postwar Reconstruction fund) appropriations in force April 1, 1952, \$441,435,046. Of the general fund expenditures, 45% went for the operation of 19 state departments, 60 state institutions and 33 educational institutions, as well as the legislature, courts, highway maintenance and construction. The remaining 55% were for state aid to local governmental units. These expenditures totalled \$550,213,988, an increase of \$20,005,527 over the previous fiscal year. The principal change accounting for this increase was a \$28,864,761 gain in state aid to education.

Agriculture.—Cash receipts from agricultural products in 1951 totalled \$957,378,000, compared with \$810,864,000 in 1950. In addition, government payments to farmers were \$7,135,000 compared with \$5,737,000 in the previous year.

The sale of milk and other dairy products in 1951 amounted to \$389,876,000. The total harvested acreage of principal crops, excluding orchards and vineyards, was 5,724,000. The value of livestock and poultry on farms as of Jan. 1, 1952, was \$588,576,000. This included 2,222,000 head of cattle, 16,008,000 chickens, 110,000 horses, 2,000 mules, 217,000 hogs, 155,000 sheep and 925,000 turkeys.

Manufacturing and Industry.—New York state's manufacturing industries outrank those of every other state in number of establishments, volume of employment, size of manufacturing pay rolls and value added by manufacture. In 1950 the state's manufacturing firms added \$10,506,454,000 in value to the raw and semifinished material they purchased for processing, compared with \$3,313,649,000 in 1939, according to the U.S. bureau of the census.

In terms of value, New York state produces approximately 67% of the country's total output of women's dresses, coats and blouses; 94% of women's furs; and 41% of men's and boys' tailored clothes. The state leads all others in printing and publishing and the rug and carpet industry, and produces 66% of the value of photographic equipment manufactured in the nation.

In 1951 there were 544,800 business firms in New York state. There were 5,823,000 persons employed, exclusive of agricultural workers, proprietors, domestics and personnel of the armed forces. Average weekly factory earnings in 1951 were \$64.90.

(F. P. KL.)

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in New York in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. New York ranks first among the states in the production of talc and ilmenite, second in gypsum and salt and third in sand and gravel, and stands 19th in value of mineral output, with 1.32% of the U.S. total.

Table III.—Mineral Production of New York

Mineral	(In short tons, except as noted)		1949	
	Quantity	Value	Quantity	Value
Cement (bbl.)	13,271,000	\$30,895,000	12,680,000	\$28,484,000
Clays	1,154,000	939,000	977,000	769,000
Coke*	5,412,000	73,460,000	5,165,000	69,074,000
Gypsum	1,280,000	3,876,000	916,000	2,805,000
Iron ore	3,267,000	27,915,000	2,625,000	22,185,000
Iron, pig*	4,222,000	180,158,000	3,244,000	142,108,000
Lead	1,484	401,000	1,317	416,000
Natural gas (thousand cu. ft.)	3,336,000	837,000	3,693,000	907,000
Petroleum (bbl.)	4,143,000	15,660,000	4,425,000	15,750,000
Salt	2,807,000	14,405,000	2,952,000	12,710,000
Sand and gravel	21,778,000	18,075,000	18,543,000	15,117,000
Slate	151,000	2,055,000	122,000	1,617,000
Stone	13,122,000	19,729,000	13,022,000	18,160,000
Talc	164,000	4,040,000	116,000	2,659,000
Zinc	38,000	10,883,000	38,000	9,417,000
Other minerals . . . . .	...	6,819,000	...	7,497,000
Total		\$156,529,000		\$138,493,000

*Values for processed materials are not included in the totals.

New York City. The permanent inhabitation of New York's five boroughs passed the 8,000,000 mark during 1952, according to the city planning commission.

Statistics furnished by such sources as the city department of commerce, the city bureau of labour relations, the Commerce & Industry Assoc. of New York, Inc., and the chamber of commerce of the state of New York, reported continued business expansion in the city during 1952, with an increase in manufacturing plants to approximately 42,250, having an annual production volume in excess of \$15,500,000,000. The assignment of \$1,500,000,000 in federal defense contracts to New York city firms during the first ten months of the year aided the industrial advancement. Additional statistics disclosed that 237,500 business establishments of all types were in operation, employing 3,850,000 persons and carrying an annual pay-roll load of \$14,000,000,000. The wearing apparel industry continued as the city's largest.

It was reported during 1952 that 41 of the country's largest corporations maintained headquarters in the metropolis; that nearly 50% of the nation's bank clearings were made in New York city; that nearly 20% of the country's income tax collections were paid by New York city corporations and individuals; and that retail sales were estimated to exceed \$15,000,000,000 over the 12-month period, representing nearly one-fifth of the country's total retail spending.

New York city suffered a slight recession in overseas shipping during 1952, losing a percentage of its export tonnage to competing Atlantic coast ports. However, nearly \$10,000,000,000 in export-import transactions was handled by local trade firms.

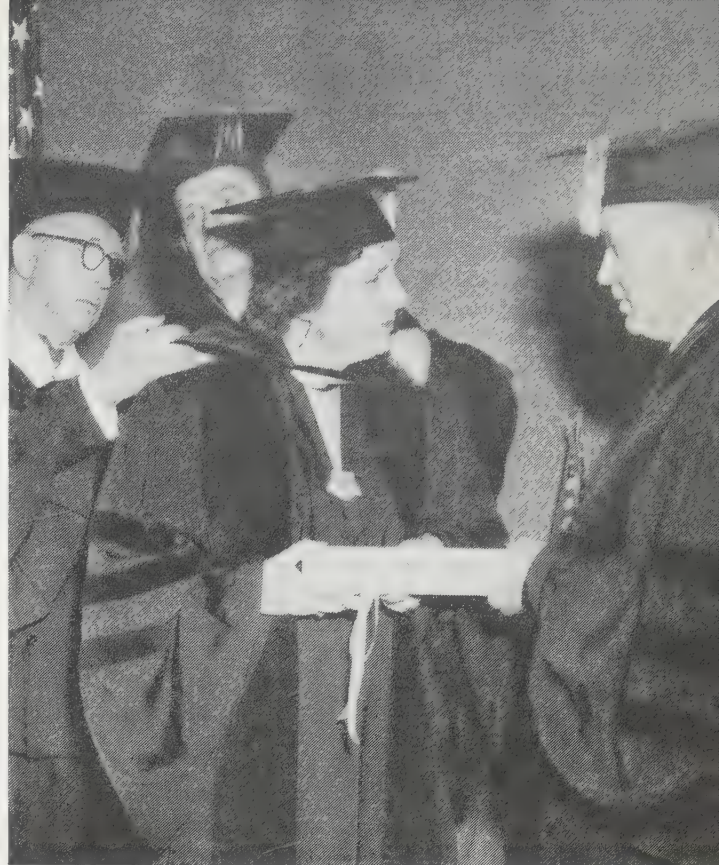
On July 1, 1952, the beginning of the municipal fiscal year, the city's taxable real estate was given an assessed valuation of \$19,425,499,087, the highest markup for tax purposes since 1932. Actual or market value of the community's 833,646 real estate parcels, including structures and exempt properties, was estimated to be in the neighbourhood of \$30,000,000,000.

Outstanding civic developments during the year included the integration of the 15½-mi. Rockaway division in the city's rapid transit system; beginning of work for the construction of a new convention hall and auditorium at Columbus Circle, Manhattan; and the rejuvenation of the 67-year-old Brooklyn bridge to permit greater traffic loads. (See also MUNICIPAL GOVERNMENT.) (F. L. Do.)

New Zealand. A self-governing member of the Commonwealth of Nations, New Zealand consists of two large and several small islands in the South Pacific. Area: dominion proper, 103,416 sq.mi.; other islands, 523 sq.mi. Pop., dominion proper (April 17, 1951, census): 1,939,472, including 115,676 Maoris. Cook and other Pacific islands (pop., 1951 census): 21,320. Western Samoa, a trusteeship, has an area of 1,133 sq.mi.; pop. (1951 census) 82,493. Language: English. Religion: mainly Christian (Anglican 37.5%, Presbyterian 23.4%, Roman Catholic 13.5%). Chief cities (1951 census, urban area only): Wellington (cap., 133,414); Auckland (329,123); Christchurch (174,221); Dunedin (95,457); Hutt (74,900); Palmerston North (32,908). Governors-general in 1952, Lieut. Gen. Lord Freyberg and (from Dec. 2) Lieut. Gen. Sir Willoughby Norrie; prime minister, Sidney George Holland.

History.—The centenary of constitutional government in New Zealand was celebrated on June 30, 1952, the anniversary of the New Zealand Constitution act. The governor-general, Lord Freyberg, relinquished his office in August after a distinguished term of service. Lieut. Gen. Sir Willoughby Norrie, governor of South Australia, was appointed to succeed him.

An economic survey issued by the government in Aug. 1952 maintained that the New Zealand economy was in first-class



DR. GRAYSON KIRK (right), acting president of Columbia university, New York city, conferring an honorary doctor of laws degree on Queen Juliana of the Netherlands during her visit to the U.S. in April 1952

order, with record production, no unemployment, greater variety and quantity of goods available, more industrial harmony and a balanced budget. On a population basis the country had the largest overseas trade in the world—£178 a head.

Early in the year Sidney Holland, the prime minister, attended a conference of commonwealth finance ministers in London. In March decisions taken in New Zealand following that conference resulted in the suspension of all trading licences for dollar countries, licences being introduced for the importing of motor vehicles and general measures being taken to increase production. New exchange regulations to safeguard overseas reserves followed the fall in price of wool, hides and skins. Production remained at a high level. For the season ended July 31, 1952, more than 240,000 tons of butter and cheese were exported to Great Britain (40% of all the butter consumed there) and 340,000 tons of meat (more than 40% of the meat imported by Great Britain). Although wool prices had fallen considerably compared with the previous year, the annual clip was worth more than £70,000,000. Aerial top dressing of hill pastures continued to be expanded and 93,000 tons of fertilizer were dropped from the air on more than 1,000,000 ac. A trial shipment of quick-freeze beef to Great Britain was highly successful and gave encouragement to beef producers.

External trade in the previous trading year (1951) showed a healthy increase: The value of exports was £248,131,000 compared with £183,753,000 in 1950. Imports in 1951 were £206,463,000 (£157,896,000 in 1950). The reserves in the dairy and meat stabilization accounts slightly increased to £25,500,000 for dairy produce and to £38,750,000 for meat while the gross national produce figure rose in 1950-51 to £681,000,000. A provisional figure for 1951-52 showed an increase to £709,000,000. Average wage per head in those industries coming under the jurisdiction of the Arbitration court rose from £9 15s. in April 1951 to £10 7s. 10d. in April 1952.

The Murupara project for the development of the paper pulp industry was further advanced as a joint state and commercial

project. A board of directors was set up, consisting of three government nominees and three from private industry. Further steps were taken in another important project, the Auckland harbour bridge, involving an expenditure of slightly more than £4,000,000. A railway commission set up earlier recommended that the nationally owned railways should be run by a corporation in the same way as the air lines.

An important land measure was a notable feature of parliamentary legislation. The Land Settlement bill reimposed the principle of compulsory acquisition of land for closer settlement, required a purchaser of developed land to reside on the farm for at least three years, and prevented undue aggregation. New Zealand reached 2,000,000 in population during 1952. Assisted migration continued from Great Britain and the Netherlands. A reduction in the quota of assisted immigrants was announced although the basis of selection remained the same; *i.e.*, with the emphasis upon skilled tradesmen and other operatives. In 1953 only 5,000 British and 1,500 Dutch migrants were to arrive. New Zealand showed its interest in the Colombo plan by direct grants for Asian projects and by providing experts.

In international affairs, New Zealand continued to support the principles of the United Nations in Korea. Replacements by drafts were made to the New Zealand contingent of the Commonwealth division. An air force squadron was sent to the middle east. The defense of the country was gradually strengthened, particularly by the implementation of the ANZUS (Australia, New Zealand and United States) pact. A meeting of the representatives of the three powers concerned was held at Honolulu, T.H., in August.

In the field of sports a New Zealand All Black Rugby team drew with Australia, each country winning one test; and in the Olympic games, by the success of Yvette Williams in the women's long jump, New Zealand won its first gold medal since J. E. Lovelock's win in the 1,500-m. run at the Berlin games in 1936; two bronze medals were also won.

(A. T. CL.)

Education.—Schools (Dec. 1950): primary 1,908, pupils 254,081, teachers 6,948; Maori village schools 159, pupils 13,426, teachers 540; Maori missions schools 10, pupils 826; secondary 47, pupils 22,824, teachers 1,102; private secondary 83, pupils 10,154, teachers 545; Maori secondary 11, pupils 817, teachers 28; district high schools 110, pupils 6,992; technical 29, pupils 13,859, teachers 786; teachers' training colleges 5, students 2,302; agricultural colleges 2, students 579. University of New Zealand (four colleges) students 10,936.

Finance and Banking.—Budget (consolidated fund and social security fund, excluding war expenses account): (1951–52 actual) revenue £N.Z.180,700,000, expenditures £N.Z.168,100,000; (1952–53 est.) revenue £N.Z.170,000,000, expenditure £N.Z.167,300,000. Gross national debt (March 1952): £N.Z.679,900,000. Currency circulation (Sept. 1952): £N.Z.59,331,000. Bank deposits (May 1952): £N.Z.194,000,000. Gold and foreign exchange (July 1952): U.S. \$255,000,000. Monetary unit: New Zealand pound, with an exchange rate of £N.Z.1.00375 to the pound sterling and £N.Z.0.362 to the U.S. dollar.

Foreign Trade.—(1951) Imports £N.Z.206,500,000, exports £N.Z.248,100,000. Main sources of imports (1951): U.K. 54%; Australia 10%; U.S. 9%; Canada 3%. Main destinations of exports (1951): U.K. 58%; U.S. 12%; France 7%. Main imports (1951): machinery, metals and manufactures 54%; textiles and clothing 48%; vehicles 20%. Main exports (1951): wool 52%; dairy produce 26%; meat 13%.

Transport and Communications.—Roads (1949): 76,859 mi., of which arterial roads were 12,470 mi. Licensed motor vehicles (Dec. 1951): cars 272,733, commercial 95,154. Railways (March 1951): 3,531 mi.; traffic (March 1952): passenger journeys, including railways motor services 45,957,000; freight carried 9,829,000 tons; freight, ton-miles 1,069,200,000. Shipping: merchant vessels, 100 gross tons and more (July 1951) 164; total tonnage 232,427. Air transport, domestic (March 1950): passenger-miles 59,745,000; cargo, net ton-miles 1,833,300. Telephones (1951): subscribers 271,935. Radio receiving licences (March 1951): 465,609.

Agriculture.—Main crops (metric tons, 1951): wheat 110,000; barley 43,000; oats 38,000; maize (1950) 6,000; potatoes 86,000; linseed (1950) 8,000; tobacco (1950) 2,500. Livestock (1951): cattle 5,060,000, of which dairy cows 1,898,000; sheep 34,786,000; pigs 564,000; horses 183,000. Livestock products (metric tons, 1951): meat 530,000, of which beef and veal 177,200, pork 11,400, mutton and lamb 292,400; wool, clean basis (1951) 119,000; factory butter (1951) 184,800, factory cheese 116,300. Fisheries: total catch (1950) 32,385 metric tons.

Industry.—Industrial establishments (April 1951): 37,420; persons employed 491,204. Fuel and power (1951): coal 688,000 metric tons; lignite 1,778,000 metric tons; manufactured gas 138,000,000 cu.m.; electricity, c. 87% of total generation 2,892,000,000 kw.hr. Industrial products (metric tons, 1951): cement 202,800; superphosphates 131,960.

Nicaragua. A Central American republic, Nicaragua is situated between Honduras on the north and Costa Rica on the south. Area: 57,145 sq.mi., of which 3,475 sq.mi. are water. Pop. (1950 census of the Americas) 1,053,189, of whom 688,373 were rural residents; (1951 est.) 1,088,000. Capital: Managua (1948 pop. est.: 146,819). Other urban centres are Chinandega (26,112), Granada (39,643), Jinotega (41,065), León (53,277), Masaya (38,761) and Matagalpa (53,118). Language: Spanish; religion: predominantly Roman Catholic. President in 1952: Gen. Anastasio Somoza.

History.—Politically, 1952 appeared to be a relatively uneventful year for Nicaraguans. Administrative reforms following the adoption of the constitution of 1950 continued to occupy the attention of government officials. As President Somoza's position moved toward further consolidation, his political opposition became less articulate. Diplomatic relations with the other Central American states—including Guatemala, with which Nicaraguan relations had been strained since 1948—appeared to improve during the year. (G. I. B.)

Education.—During the school year 1951–52 there were 1,035 national primary schools with 65,305 pupils matriculated and 2,129 teachers, 91 private schools with 10,663 pupils and 431 teachers, 63 municipal schools with 2,738 pupils and 77 teachers, 13 national institutes with 1,575 students, 3 normal schools with 462 students, 32 commercial schools with 3,944 students and 24 private secondary schools with 2,077 students. The National university (León) had 620 students in 7 faculties, including one at Managua. In the fiscal year 1950–51 education received 10.7% of net government expenditures. In 1951 there were 50 motion-picture theatres with seating capacity of 48,000.

Finance.—The monetary unit is the córdoba, valued on Sept. 30, 1952, at \$0.2000 U.S. currency, official rate; \$0.1429, basic rate; and \$0.1370, curb rate. The national budget for the fiscal year 1952–53 provided for expenditure of 132,935,546 córdobas. In 1950–51 expenditure totalled 116,103,000 córdobas and revenue, 121,719,000 córdobas. The public debt in June 1952 was 45,681,000 córdobas, of which 13,241,000 córdobas was external. Currency in circulation (Sept. 30, 1952) was 78,400,000 córdobas; demand deposits 81,400,000 córdobas; gold reserves \$2,760,000; foreign exchange reserves \$14,290,000. The retail food price index (Managua) stood at 140 in May 1952 (1948=100).

Trade and Communications.—Exports in 1951 amounted to \$36,750,000 (excluding gold exports valued at \$8,770,000); imports were \$29,960,000. Leading exports besides gold were coffee (51%), cotton (15%), sesame (7%) and cattle (3%). Leading customers were the U.S. (60%), the United Kingdom (19%) and Japan (6%); leading suppliers, the U.S. (72%), Germany (5%) and the Netherlands Antilles (5%). Important imports were textiles, iron and steel and manufactures, cotton manufactures and machinery.

In 1951 there were 268 mi. of railway and (1949) 417 mi. of surfaced highways. As of Jan. 1, 1949, registered motor vehicles included 1,443 automobiles, 672 trucks and 151 buses.

Agriculture.—Production of coffee, the chief crop, in the 1951–52 season totalled 357,000 bags of 132 lb. each, of which 295,020 bags were exported, 273,370 bags to the U.S. In 1950, 7,466 metric tons of sesame, 3,307 tons of cotton and 661,645 banana stems were exported. In 1951 there were 1,103,000 cattle.

Mineral Production.—Mineral exports in 1951 included 250,534 troy ounces of gold and 209,898 oz. of silver. (J. W. Mw.)

Nickel. Table I shows the output of nickel in the major producing countries, as reported by the U.S. bureau of mines.

Table I.—World Production of Nickel

	(In short tons)				
	1947	1948	1949	1950	1951
Canada	118,627	131,740	128,690	123,659	137,268
Cuba	2,220	—	—	—	—
Finland	?	—	—	—	—
Japan	—	—	—	—	—
New Caledonia	3,687	5,381	3,716	6,945	10,000 ^a
Norway	—	—	—	—	—
South Africa	583	505	625	929	—
U.S.S.R. (est.)	27,500 ^a	27,500 ^a	27,500 ^a	27,500 ^a	—
United States	646	883	790	913	756
Total	154,300	166,400	160,900	159,800	—

Table II.—Nickel Supply in the United States

	(In short tons)				
	1947	1948	1949	1950	1951
Production	646	883	790	913	756
Secondary recovery	9,541	8,850	5,680	8,795	—
Imports*	88,408	106,939	97,144	97,959	102,325
Nickel content	80,718	91,400	91,471	91,553	93,116
Exports*	12,037	8,184	4,470	3,645	4,622
Consumption	80,757	93,558	68,326	98,904	86,416

*Includes gross weight (not nickel content) of ore, matte, oxide and alloys.

United States.—The salient statistics of nickel in domestic industry are shown in Table II.

Cuba.—The Nicaro nickel plant, built during World War II, had been reconditioned after several years of idleness and was in operation at full capacity in 1952, with an output of nickel oxide reported to be greater than during the war years.

Canada.—Nickel production was 70,826 tons in the first half of 1952, compared with 67,391 tons in the same period of 1951. (G. A. Ro.)

Niger: see FRENCH UNION; FRENCH WEST AFRICA.

Nigeria: see BRITISH WEST AFRICA.

Nixon, Richard Milhous (1913–), U.S. vice-president, was born on Jan. 9 at Yorba Linda, Calif., near Los Angeles. He was awarded his bachelor's degree from Whittier (Calif.) college in 1934 and his law degree from Duke university, Durham, N.C., in 1937; he then practised law for five years at Whittier. After a few months in Washington, D.C., as attorney for the Office for Emergency Management (Jan.–Aug. 1942), Nixon accepted a commission in the U.S. navy as lieutenant, junior grade. He saw service in the South Pacific and by the time of his discharge in 1946 had been promoted to lieutenant commander. In Nov. 1946 he was elected to the U.S. house of representatives as a Republican from the 12th California district and was re-elected in 1948 for a second term. In the house he was appointed to the un-American activities committee and figured prominently in the investigations that led to the Alger Hiss trial. In Nov. 1950 he was elected U.S. senator from California, taking office Dec. 4, 1950, when the incumbent, Sheridan Downey, resigned a month before expiration of his term.

At the 1952 Republican convention in Chicago, Nixon was nominated vice-president on July 11 and immediately began a vigorous campaign as the running mate of Dwight D. Eisenhower. His candidacy seemed jeopardized in September when the U.S. press published reports that a fund of \$18,235 had been raised by friends in California to help defray Nixon's political expenses as a senator. In a national telecast on Sept. 23, however, Nixon disclosed his personal finances in detail and declared that he had not profited at all as an individual from the fund. Eisenhower promptly declared his faith in Nixon, as did the Republican national committee, and Nixon remained on the ticket. Their decisive victory on Nov. 4 showed that the incident had done them no harm with the electorate.

NLRB: see NATIONAL LABOR RELATIONS BOARD.

Nobel Prizes. The Nobel prizes for literature, physics, chemistry, medicine and peace, first awarded in 1901, were established by the Swedish industrialist, Alfred Bernhard Nobel (1833–1896). Each award consists of a gold medal and a sum of money which varies with the income from the \$9,000,000 fund set up by Nobel's will. In 1952 the sum was reported to be about \$33,037. On Oct. 23, 1952, it was announced from Stockholm that Selman A. Waksman, director of the Institute of Microbiology at Rutgers university, New Brunswick, N.J., had been awarded the medicine prize for his work in the discovery of streptomycin (he was a co-discoverer of the drug made known in 1943) and its effects against tuberculosis. On Nov. 6 the winners in three other categories were announced. François Mauriac, of France, a novelist, poet, playwright, essayist, biographer and newspaper contributor, received the literature prize. Felix Bloch, of Stanford university, Stanford, Calif., and Edward Mills Purcell, of Harvard university, Cambridge, Mass., shared the physics prize for their development of

a new method to measure magnetic fields in atomic nuclei. They developed the prize-winning method independently. The chemistry prize was divided between Archer Martin, a biochemist at the National Institute for Medical Research in London, and Richard Synge, a biochemist at Rowett Research institute, Aberdeen, Scot., for the development of paper partition chromatography—an ingenious method of separating compounds, which is a modernization of a chemical technique said to have been known to the ancient Egyptians. No peace prize was awarded in 1952.

The formal presentation of the 1952 prizes was made by King Gustav VI Adolf of Sweden at the traditional Nobel ceremonies in Stockholm on Dec. 10. (A. J. RR.)

North Atlantic Treaty Organization. The North Atlantic Treaty organization (NATO), established by the United States, Canada and ten west European nations in Washington, D.C., in April 1949, continued to experience difficulties in 1952. One of the fundamental issues raised in 1951 that remained unsolved was how far the member states could go in devoting their financial and economic resources to the strengthening of their defenses without endangering their national economies and standards of living. It was widely felt that it was necessary to go beyond the purely military concepts, dominant at the beginning of NATO, to the broader field of a confederation of free western nations, in order to create a functioning, coherent organization. At the end of the visit of the British prime minister, Winston Churchill, to Pres. Harry S. Truman on Jan. 9, 1952, a communiqué was given out in Washington which stressed the point that "we are resolved to build an Atlantic community, not only for immediate defense, but for enduring progress." The two statesmen pledged themselves also on behalf of their nations to support the nascent "European defense community as an element in a constantly developing Atlantic community," and thus to integrate western European unity with the British Commonwealth and the United States in a united front of the democracies.

A similar point of view was strongly expressed by Premier Willem Drees of the Netherlands in New York city on Jan. 16, 1952: "The interdependence of the nations on both sides of the ocean has assumed such concrete form during the cold war that it could not be undone any more, even if this cold war were suddenly to turn into a real peace." The Dutch would participate in the European Defense Community, but Drees stressed that these efforts were "only acceptable to us provided they constitute a component and inseparable part of the North Atlantic solidarity." Six days later, Gen. Dwight D. Eisenhower in NATO's supreme headquarters in France declared that "America, in common with the other countries in this coalition, must recognize that her own self interest is served by making NATO succeed. This identical consideration applies to every other nation." To create a closer tie between NATO and the United States, President Truman in Jan. 1952 appointed William H. Draper, Jr., as ambassador and special representative in Europe. After his first six months in this office, Draper presented on Aug. 22 a report emphasizing the need for closer economic ties. At the end of January a further step in the common security arrangement was taken when Adm. Lynde D. McCormick, commander of the United States Atlantic fleet, was named supreme NATO commander of the Atlantic, with British Vice-Adm. Sir William Andrewes as deputy commander and an international command staff with headquarters in Norfolk, Va.

These moves preceded the general reorganization of NATO, decided upon at the Lisbon conference in Feb. 1952. This conference approved the admission of Turkey and Greece as full members and the creation of the European Defense Community

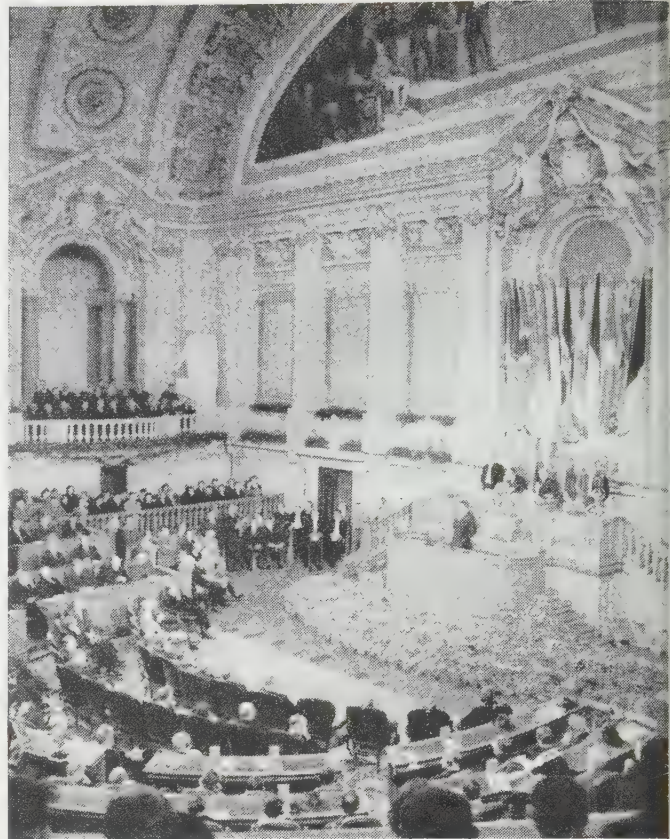
(E.D.C.), designed to make possible Germany's participation in the western defense effort. The various nations agreed also to provide by the end of 1952 approximately 50 combat-ready ground divisions and about 4,000 combat aeroplanes, but later developments indicated that these goals would not be met in full by the end of the year. At Lisbon it was also proposed to create a flag for NATO, featuring a shield, symbolizing defense, against the background of blue waves, symbolizing the Atlantic ocean, and a sword and an olive branch to proclaim the goal of peace through strength. This proposal was later taken up by Lord Ismay, the new secretary-general of NATO.

Two more important steps toward advanced degrees of co-operation were taken. In one, all the nations, including the United States, agreed to submit their military budgets to an annual review by the NATO in order to agree on priorities for defense expenditure; the second concerned the structure of NATO. The office of secretary-general of NATO was created, and a new permanent council was formed, with headquarters in Paris. Gen. Hastings Lionel Ismay, Lord Ismay, was appointed the first NATO secretary-general. Under him and his deputy secretary-general, H. van Vredenburg, were three major divisions headed by René Sargent of France, assistant secretary-general for economic affairs; David Luke Hopkins of the United States, assistant secretary-general for defense production; and Sergio Fenoaltea of Italy, assistant secretary-general for political affairs.

On April 28, 1952, the North Atlantic council appointed Gen. Matthew B. Ridgway to succeed Gen. Dwight D. Eisenhower as supreme Allied commander in Europe on June 1, 1952. General Ridgway was nominated by President Truman, after the North Atlantic council had unanimously agreed to request the president to name a United States officer for consideration by the council. Gen. Alfred M. Gruenther continued as chief of staff to the supreme Allied commander in Europe. On April 2 General Eisenhower celebrated the first anniversary of the day on which he had assumed operational control of the NATO forces, with a statement in which he said: "If the free nations are to remain secure, our peoples must march together, agreed on common goals, and win that cooperative unity possible only in a free society. . . . It seems almost as if the nations of the West have been, for decades, blindly enacting parts in a drama that could have been written by Lenin. . . . This pattern of events, which points so surely to ultimate disaster, can be changed if only the peoples of the West have the wisdom to make a complete break with many things of the past and show a willingness to do something new and challenging. NATO itself is a significant step to meet both the present danger of aggression and the tragic struggles and dissensions that have divided our peoples in the past."

Undoubtedly, the NATO nations had made much progress in military and economic fields in the three years since NATO started. In 1949 the European countries which later became members of NATO lacked practically everything needed for a modern army. In many of them the will to fight seemed not to exist. By 1952 all that had changed. The budgets allocated to defense had doubled. The member nations of NATO in Europe spent the following amounts in 1949-50 and in 1951-52 (in terms of U.S. dollars):

	1949-50	1951-52
Belgium-Luxembourg	\$ 167,000,000	\$ 435,000,000
Denmark	45,000,000	97,000,000
France	1,594,000,000	3,460,000,000
Greece	115,000,000	188,000,000
Italy	475,000,000	811,000,000
Netherlands	210,000,000	395,000,000
Norway	49,000,000	115,000,000
Portugal	47,000,000	58,000,000
Turkey	175,000,000	253,000,000
United Kingdom	2,105,000,000	3,660,000,000
Total	\$4,982,000,000	\$9,472,000,000



NORTH ATLANTIC COUNCIL meeting in Lisbon, Port., early in 1952. It was the council's ninth session, with Greece and Turkey represented as full members for the first time

In spite of this progress, the course of 1952 revealed continued fundamental weaknesses in the NATO structure, principally because of the growing practice of the individual nations to make unco-ordinated unilateral decisions and to deal with problems through direct negotiations between governments, bypassing the permanent NATO machinery, which was supposed to co-ordinate the individual efforts into a joint effort.

Many resolutions on economic collaboration, the liberalization of trade and the easing of manpower movements among member nations produced little or no effective action by the governments. U.S. Sen. Guy M. Gillette, speaking on April 30 in Ottawa, Ont., suggested as a remedy the creation of a North Atlantic consultative assembly in which representatives elected by the Atlantic peoples could meet to discuss and to make recommendations on problems of the North Atlantic region. "Whatever else an assembly like this might accomplish," Senator Gillette said, "it would fill a glaring gap and introduce a basic new element now lacking in the Atlantic community, a body representing its peoples and a channel for direct communication and cooperation between them." Gen. J. Lawton Collins, U.S. army chief of staff, said on Oct. 8 on his return from Europe that he favoured giving more information about atomic weapons to other NATO nations. Unless NATO planners could have at least a general sense of the role of atomic weapons, their plans for defense of western Europe would be delayed, and in a full emergency Allied ignorance on atomic weapons might endanger the over-all defense plan and the security of U.S. troops in Europe. These views were supported by Gen. Omar N. Bradley and Gen. Alfred M. Gruenther. One minor step in the field of practical political co-operation was taken on Sept. 4, when the U.S., Britain and France invited all members of NATO to comment on the U.S.S.R. note of Aug. 23 to the above-named three powers regarding the future of Germany. This unprecedented step was taken at the request of the smaller states, for NATO

as a whole was involved in all relations with the Soviet Union and would have to bear the consequences of any important decision. Therefore widest possible consultation on all vital subjects was sought and promised.

While political and economic co-operation made only very little progress, if any, in 1952, the purely military aspects of NATO fared better. Allied land forces, southeastern Europe, established its headquarters in Izmir, Turk., under U.S. Maj. Gen. Willard Wyman with a joint staff of Greek and Turkish officers. A forward echelon, situated in Salonika, Gr., was also established under the Allied air forces, southern Europe, headquarters in Florence, It. In September the biggest Allied naval exercise was held in the North sea and in the Danish and Norwegian coastal waters, under the direction of British Adm. Sir Patrick Brind, who was the NATO commander in chief in northern Europe with headquarters in Oslo. Ten nations, the U.S., Great Britain, Canada, New Zealand, Norway, Denmark, the Netherlands, Belgium, France and Portugal, participated. The fleet comprised one U.S. and one British battleship, six U.S. carriers, four British carriers and one Canadian carrier.

Another step to strengthen NATO, taken in 1952, was the conclusion of the pact establishing the European Defense Community (E.D.C.), consisting of France, Germany, Italy, Belgium, the Netherlands and Luxembourg. This defense agreement, however, had not been ratified by the end of 1952, and there seemed serious opposition to it in both Germany and France. Two outside factors contributed to the weakening of the ties and to the lessening of co-operative enthusiasm, at least for the time being, at the end of Oct. 1952. One was the election campaign in the United States, which concentrated American attention on domestic problems. The other was the declaration by U.S.S.R. Premier Joseph Stalin at the beginning of October, before the opening of the 19th Communist Party congress, that he did not expect in the near future a war between the "capitalistic" world and the U.S.S.R. He put his hope for Communist victory in the disintegration of the Atlantic union. He proclaimed that, according to Communist doctrine, a war among the "capitalistic" nations was inevitable and he expressed his conviction that Great Britain and France would soon be forced to fight in self-defense against the United States. Thus, while the Soviet government seemed to abandon, for the time being, plans of direct military aggression, it put its hope into weakening and dividing the Atlantic alliance by political and economic means. To counter this threat, Field Marshal Viscount Montgomery, deputy chief of the NATO military forces, suggested that there should be a supreme NATO commander for the "cold war." He declared that an over-all NATO plan and effective machinery were lacking. In this connection the Mutual Security Agency in Washington prepared at the end of Oct. 1952 a plan to end continued dollar grants for economic aid by creating an Atlantic reserve system for currency stabilization and an Atlantic economic board to co-ordinate trade and other policies affecting currency relationships. Under this economic board, an Atlantic commodity board would seek to stabilize production and prices of essential raw materials through long-term agreements with producer countries and thereby remove the need for restrictive cartel arrangements. Though these proposals were in only the first stage of discussion at the close of the year, they pointed toward a much closer economic integration of the NATO nations by creating an organizational arrangement for continuous review and appraisal of national policies bearing on the security of the pooled reserve. The Consultative assembly of the Council of Europe, meeting in Strasbourg, Fr., demanded on Sept. 27 that equality in sharing the economic burden of defense by the European NATO partners must be matched by equal consideration in the strategic plans for defense. Thus, in

various ways, the need for a closer integration of the NATO members was felt and expressed at the end of 1952. (See also ARMIES OF THE WORLD; EUROPEAN UNION; MIDDLE EAST; MUTUAL SECURITY PROGRAM.)

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North Borneo: see BRITISH BORNEO.

North Carolina. A south Atlantic coast state, popularly known as the "Old North state" or the "Tar Heel state," North Carolina is one of the original 13 states of the union. Area: 52,712 sq.mi. (49,097 sq.mi. land, 3,615 sq.mi. water). Pop. (1950): 4,061,929 (tenth in United States) of which 1,368,101 (33.7%) were urban, 2,693,828 (66.3%) rural and 1,096,720 (27%) nonwhite. Capital: Raleigh, with pop. (1950) 65,679; other cities: Charlotte (134,042); Winston-Salem (87,811); Greensboro (74,389); Durham (71,311); Asheville (53,000).

History.—In the Democratic primary held in May 1952, William B. Umstead, former member of the United States senate and house of representatives, in a close election race defeated Hubert E. Olive, superior court judge, for the Democratic nomination for governor. In other contests, Luther Hodges, industrialist, won the Democratic nomination for lieutenant governor and Hunt Parker, superior court judge, was nominated for the supreme court. The only major political upset occurred in the second congressional district when L. H. Fountain defeated the veteran representative John H. Kerr. (Democratic nomination in North Carolina is virtually tantamount to election.)

As Gov. W. Kerr Scott's four-year term neared its end, his "Go Forward" program of rural road construction, rural electrification and telephone service, public education, and public health and welfare approached its goals. By June 30, with funds from the \$200,000,000 state bond issue approved in 1949, 11,448 mi. of secondary roads had been paved (95% of the 12,000-mi. goal) and 15,571 mi. had been stabilized for all-weather travel (44.5% of the 35,000-mi. goal). An extensive school building expansion program, aided by \$50,000,000 of state funds, neared completion in 1952.

North Carolina's five-year medical, hospital and health program, begun in 1947, moved toward completion in 1952. The school of dentistry opened in 1951 and the four-year medical school and teaching hospital at the University of North Carolina, Chapel Hill, were opened in September. Of 127 hospital projects, 70 had been completed prior to June 30, 1952, 31 were under construction and 28 were in the planning stage.

The completion of extensive dock and storage facilities at Morehead and Wilmington, financed by a state bond issue of \$7,500,000, realized an age-old dream of the state for deep-water seaports.

The principal state officers in 1952 were W. Kerr Scott, governor; H. P. Taylor, lieutenant governor; Thad Eure, secretary of state; Henry L. Bridges, auditor; Brandon P. Hodges, treasurer; Charles Carroll, superintendent of public instruction; Harry McMullan, attorney general; William A. Devin, chief justice.

Education.—In 1950-51 there were 2,697 public elementary schools with 21,986 teachers, principals and supervisors and 719,855 enrolled pupils; and 957 high schools with 8,122 teachers, principals and supervisors and 189,922 enrolled pupils. These schools were operated at a cost of approximately \$123,000,000, including \$11,000,000 of federal funds. The average daily attendance in the public schools was 816,036; the number of inhabitants of school age (6-20, inclusive) was 1,118,283. The average salary for elementary school teachers was about \$2,890 and for high school teachers \$2,870.

Table I.—Principal Crops of North Carolina

Crop	Indicated 1952	1951	Average 1941-50
Tobacco, lb.	942,950,000	998,990,000	736,834,000
Cotton, 500-lb. bales	500,000	542,000	523,000
Corn, bu.	55,075,000	67,611,000	59,560,000
All hay, tons	1,182,000	1,225,000	1,266,000
Peanuts, for nuts, lb.	248,750,000	315,210,000	299,494,000
Wheat, bu.	7,917,000	8,763,000	6,693,000
Sweet potatoes, bu.	4,410,000	3,760,000	6,850,000
Irish potatoes, bu.	5,880,000	6,909,000	9,572,000
Oats, bu.	14,070,000	14,271,000	9,495,000
Soybeans, for beans, bu.	4,848,000	4,950,000	3,142,000
Peaches, total crop, bu.	1,648,000	1,806,000	1,867,000
Apples, commercial crop, bu.	2,053,000	1,269,000	1,090,000
Pecans, total crop, lb.	2,470,000	2,435,000	2,414,000

Source: U.S. Department of Agriculture.

Table II.—Value of Products Manufactured by Leading Industries in North Carolina

	1951	1950
Textiles	\$2,688,000,000	\$2,282,000,000
Tobacco	1,284,000,000	1,023,000,000
Foods	478,000,000	365,000,000
Chemicals	343,000,000	248,000,000
Lumber	305,000,000	254,000,000
Paper	244,000,000	182,000,000
Furniture	239,000,000	210,000,000

Social Insurance and Assistance, Public Welfare and Related Programs.—In June 1952, public grants amounting to \$1,265,480 were made to 51,412 persons for old-age assistance; \$827,030 to 17,156 families for aid to dependent children; \$144,924 to 5,200 persons for aid to the permanently and totally disabled; \$153,358 to 4,436 blind persons; and \$43,870 to 2,101 cases for general relief. For hospitalization of assistance recipients and other indigent persons the total amount expended for June was \$153,951. During the year ended June 30, 1952, the total amount of public relief funds distributed was \$27,930,667, and unemployment benefits amounted to \$23,188,582.00.

In 1952, the state maintained 12 charitable institutions with 12,392 inmates on June 30; 5 correctional institutions with 769 inmates; and the state prison system with 8,925 prisoners.

Communications.—In 1952 the state highway and public works commission maintained 11,741 mi. of state highways, of which 11,397 mi. were hard-surfaced; and 54,806 mi. of county roads, of which 15,465 mi. were hard-surfaced. There were 4,521 mi. of railroads, 870 mi. of city bus routes and 11,912 mi. of passenger bus routes in 1952. There were 119 airports. There were 630,265 telephones in use in the state on June 30, 1952.

Banking and Finance.—On June 30, 1952, there were 71 national banks and branches with assets of \$551,071,000, and 400 state banks and branches with deposits of \$1,420,548,852 and assets of \$1,566,891,032. On Jan. 1, 1952, there were 146 building and loan associations operating under state charters with 202,251 members and total assets of \$239,332,494.16 and 31 federal savings and loan associations with total assets of \$138,220,622.61. In 1951-52 state receipts were \$644,622,173.94; disbursements \$724,251,638.68. On June 30, 1952, the state gross bonded debt was \$273,443,500, less bonds invested in sinking funds, \$65,496,159.05. The assessed value of property was \$4,704,295,148 on June 30, 1952. In the state general fund there was a cash surplus of approximately \$38,621,568 at the end of the 1952 fiscal year.

Agriculture.—The cash income of North Carolina farmers in 1951 was \$751,838,000 from crops; \$195,458,000 from livestock and livestock products; and \$8,032,000 from government payments. The value of the lands and buildings on the 288,508 farms in March 1952 was \$2,355,000,000.

Manufacturing.—North Carolina is the nation's largest producer of textile, tobacco and wooden furniture products, and in recent years

Table III.—Mineral Production of North Carolina

(Short tons, except as noted)			
Mineral	1950	1949	
	Quantity	Quantity	Value
Clays	1,437,000	1,181,000	\$ 1,336,000
Feldspar	204,000	180,000	974,000
Mica, scrap	48,000	25,000	640,000
Sheet (lb.)	484,000	470,000	121,000
Sand and gravel	8,352,000	5,093,000	3,553,000
Stone	7,712,000	6,225,000	10,078,000
Talc	117,000	86,000	1,345,000
Titanium concentrates	27,000	32,000	*
Tungsten concentrates (60% WO ₃)	1,240,000	1,000	*
Other minerals . . . . .	...	...	1,708,000
Total			\$ 26,343,000
			\$19,755,000

*Value included with other minerals.

chemical and paper manufacturing had experienced notable growth. In 1951 manufacturing establishments numbering 8,272 employed 425,000 wage earners at wages of about \$1,000,000,000. Estimated industrial production in 1951 was \$6,181,000,000, and electric power generating capacity was 1,574,360 kw., an increase of 31% in four years.

(Jo. C. S.)

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in North Carolina in 1949 and 1950, listing all

items with value exceeding \$100,000. Data for 1951 were not yet available. North Carolina ranks 1st among the states in the production of feldspar and mica, and 2nd in talc and tungsten, and stands 36th in the value of mineral output, with 0.22% of the U.S. total.

North Dakota. A west north central state of the United States, North Dakota was admitted to the union Nov. 2, 1889; popular name, "Flickertail state." Area: 70,665 sq.mi., including 608 sq.mi. of water. Pop. (1950 census): 619,636. Urban population (places of 2,500 or more), 26.6%. Capital, with 1950 pop., Bismarck (18,640); chief cities: Fargo (38,256); Grand Forks (26,836); Minot (22,032).

History.—State officers in 1952 were: governor, C. Norman Brunsdale; lieutenant governor, Ray Schnell; secretary of state, Thomas Hall; auditor, Berta Baker; treasurer, Albert Jacobson; attorney general, E. T. Christianson; commissioner of insurance, A. J. Jensen; commissioner of agriculture and labour, Math Dahl; superintendent of public instruction, M. F. Peterson; tax commissioner, John Gray (died July 17; B. B. Conyne appointed in his place); public service commissioners, Elmer Cart, Ernest D. Nelson and E. H. Brant.

In 1952 the oil boom expanded. By October Amerada Petroleum corporation had 54 successful wells. In August 208,633 barrels of oil were sold, and 47 seismograph crews were operating.

In 1952 Garrison dam was about one-half completed. The total appropriation to date for the dam was \$179,180,700. The appropriation for the fiscal year 1951-52 was \$37,083,700, for 1952-53 \$30,848,000.

The June primary saw a Nonpartisan league victory in the bitter fight for the Republican senatorial nomination. William Langer, progressive leader of the N.P.L. seeking a third term, was opposed by Congressman Fred G. Aandahl for the conservative Republican Organizing committee. Supported by labour and Democratic voters, Langer won 107,905 to 78,359, though Aandahl charged him with supporting left-wing ideas and the Democratic administration. Brunsdale (R.O.C.) was renominated for governor, but the N.P.L. took most of the state offices and control of the house (Republican nomination is generally equivalent to election). Three constitutional amendments passed: removal of the two-term restriction on sheriffs; investment of school funds in federally insured farm mortgages; relocation of the school for the blind. Parking meters were voted down for the third time.

Education.—Public school teaching positions for the year ended June 30, 1951, were 6,688; public school enrolment 115,877 (elementary 88,617; high school 27,260); schools in session 3,268; average annual salary of teachers including city superintendents \$2,274; average cost per pupil enrolled \$202; total expenditure for public elementary and high schools \$25,282,550. Enrolment in 12 institutions of higher learning with 541 in the faculties in the fall of 1952: 6,611 college students; 487 special students.

Social Insurance and Assistance, Public Welfare and Related Programs.—For the year ending June 30, 1952, public assistance totalled \$8,701,396 (federal 45.4%, state 38.3%, county 16.3%). Old-age assistance cost \$5,706,862 (the number of cases in June 1952 was 8,805). Aid to dependent children cost \$1,826,775 (4,550 children in June 1952); aid to the blind \$75,479 (112 persons in June 1952); aid to the permanently and totally disabled \$423,908 (653 persons in June 1952); general assistance \$491,330 (735 cases in June 1952); welfare services \$161,782; administrative expense \$787,882. Total expenditures for four charitable and four correctional institutions for the year ending June 30, 1952, \$4,151,177.95. Number of inmates in Sept. 1952: feeble-minded 1,169; insane 2,094; blind 32; deaf 72; tubercular 278; penitentiary 202; training school 242; state farm 33.

Communications.—For the calendar year 1951 the highway mileage was: state 6,862; rural 107,010. Spent in 1951 for construction of state highways: \$4,843,557 by the state; \$4,818,759 by the federal government. For maintenance of state highways \$3,118,088; for operation \$648,087. Additional amounts appropriated to the counties were: from motor fuel taxes \$1,409,078; from motor vehicle fees \$2,772,532. Motor vehicle registration in 1952 up to Aug. 31: 185,205 passenger cars, 86,355 trucks. Six railroads operated 5,259 mi. of track.

Banking and Finance.—On June 30, 1952, the Bank of North Dakota and 110 other state banks had resources of \$353,530,850.46 and deposits of \$329,663,068.89. Resources of 40 national banks were \$273,010,100, and deposits were \$256,155,000. State treasury collections for the year ended June 30, 1952, were \$77,797,996; disbursements \$71,797,379.

Table I.—Leading Agricultural Products of North Dakota

Crop	1952 (estimate of Sept. 1)	1951	Average 1941–50
Wheat, bu.	102,309,000	150,975,000	140,940,000
Barley, bu.	23,982,000	23,332,000	26,010,000
Oats, bu.	36,915,000	56,811,000	66,413,000
Rye, bu.	32,208,000	51,336,000	50,917,000
Flax, bu.	1,518,000	2,562,000	4,724,000
Seed, bu.	12,984,000	15,272,000	11,184,000
Potatoes, bu.	16,280,000	15,580,000	19,872,000
Hay, tons	2,973,000	3,163,000	3,114,000

Source: U.S. Department of Agriculture.

Total bonded indebtedness \$33,305,250.

Agriculture.—For the fiscal year ended in 1951 co-operatives in North Dakota (grain elevators, oil companies, creameries, stores, mutual insurance companies and credit unions) had 198,258 stockholders, total assets of \$88,298,005, and transacted \$257,888,780 worth of business. Drought struck North Dakota in 1952. April was the driest on record; May was the driest May since 1934. When the drought broke with a state-wide soaking rain on June 28, the small grain outlook was the poorest since 1936. But July saw a record improvement. Black stem rust damaged late durum; the durum crop was the smallest since 1936.

Manufacturing.—Nonagricultural employment in 1952 (January to August) averaged 113,010 (0.6% above 1951). The increase was largely the result of oil activity in the state. Manufacturing employment, 6,360. Construction employment declined from the 1951 level. For the first eight months of 1952 manufacturing workers averaged \$62.33 a week compared with \$59.11 in 1951. Average work week increased from 44.1 hours in 1951 to 44.6 hours in 1952. Average hourly earnings increased from \$1.34 in 1951 to \$1.40 in 1952. (E. R.N.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in North Dakota in 1949 and 1950, listing all items with value exceeding \$100,000. Data for 1951 were not yet available.

Table II.—Mineral Production of North Dakota

Mineral	(Short tons)			
	1950	Value	1949	Value
Coal	3,261,000	\$7,758,000	2,967,000	\$7,004,000
Oil and gravel	4,271,000	1,660,000	4,371,000	1,638,000
Stone	193,000	136,000	?	?
Other minerals . . . .	...	60,000	...	176,000
Total		\$9,614,000		\$8,818,000

*Value included with other minerals.

North Dakota ranks 43rd among the states in the value of mineral output, with 0.08% of the U.S. total.

Northern Ireland: see IRELAND, NORTHERN.

Northern Rhodesia: see RHODESIA, NORTHERN.

Northwest Territories. The Northwest Territories comprise all that part of Canada north of the 60th parallel of north latitude, except the portions thereof within the Yukon territory and the provinces of Quebec and Newfoundland; it also includes the islands in Hudson bay, James bay and Ungava bay, except those within the provinces of Manitoba, Ontario and Quebec. Area: 1,304,903 sq.mi., of which 51,465 sq.mi. are water; pop. (1951 census) 16,004, including 5,344 whites, 3,803 Indians and 6,857 Eskimos.

For purposes of organization and administration, the territories were divided by order in council dated March 16, 1918, into the districts of Mackenzie (527,490 sq.mi.), Keewatin (228,160 sq.mi.) and Franklin (549,253 sq.mi.). The Northwest Territories act, 1905, as amended, provides for the government of the territories by a commissioner (who, during 1952, was deputy minister of the department of resources and development) under instruction given from time to time by the governor in council or the minister of resources and development. Legislative powers are exercised by the commissioner in council. This council consists of eight members, one of whom is deputy commissioner. Five of the members are senior federal officials appointed by the governor in council and three are elected by the people to represent three constituencies in the Mackenzie district. In 1952 the council was headed by Maj. Gen. H. A. Young. Appointed council members were F. J. G. Cunningham, deputy commissioner, L. C. Audette, W. I. Clements, D. M. MacKay and L. H. Nicholson. Council members elected in Sept. 1951 for a three-year period were James Brodie, Frank Carmichael and Mervin Hardie. The seat of government is at Ottawa, Ont.

Education.—Federal schools were operated in 1952 by the department of resources and development at Fort Smith, Hay River, Fort Simpson, Fort Resolution, Aklavik, Coppermine, Tuktoyaktuk, Chesterfield Inlet, Cape Dorset on Baffin Island, Coral Harbour on Southampton Island and also at Fort Chimo and Port Harrison in the province of Quebec. A number of these schools were for Eskimos. A school was operated by the Discovery Yellowknife Mines, 60 mi. N. of Yellowknife, and one was also operated by Eldorado Mining and Refining (1944) Ltd. at Port Radium. The Indian affairs branch of the department of citizenship and immigration operated schools at Rae, Fort McPherson, Rocher River, Fort Good Hope, Fort Norman, Fort Franklin and Arctic Red River. Schools were operated at a number of the settlements by missions of the various churches with financial assistance from the federal government. The only organized school districts are at Yellowknife where an 11-room public and high school was in operation and a separate school district was established July 11, 1951. Construction of a separate school was commenced in July 1952. Correspondence courses were available free of charge to any child whose parents might request this service, as well as to adults wishing to enrol. As of March 1952 there were 1,294 pupils enrolled in grades 1-12 at schools in the Mackenzie district. Approximately 503 pupils attended government and mission schools for Eskimos in the eastern arctic.

Public Health and Welfare Services.—In the majority of the settlements, the schools are staffed by welfare teachers who attend to the general welfare of their communities.

During 1952 there were in operation eight mission hospitals, two company hospitals and one community hospital. Eight nursing stations and health centres were also operated. A physician and dentist accompanied the eastern arctic government supply ship for the purpose of treating anyone requiring professional service at points of call; working as a team, they also visited many settlements to conduct physical examinations and X-ray surveys and administer preventive inoculations.

Transportation and Communications.—A direct inland water transportation route for a distance of about 1,700 mi. is provided by the Mackenzie river and its tributaries, the Athabaska and Slave rivers. Subsidiary routes on Lake Athabaska, Great Slave lake and Great Bear river and lake total more than 800 mi. The Mackenzie highway, connecting Grimshaw, Alta., with Hay River on Great Slave lake, continued to provide useful service during 1952. Scheduled air-mail, passenger and express services were operated throughout the year to most of the settlements in the Mackenzie district.

Radio communication between nearly all settlements and trading posts in the territories and outside points was maintained through government and private radio stations.

Eastern Arctic Patrol.—The 1952 annual eastern arctic patrol was carried out by the government ship "C. D. Howe," assisted by small privately owned vessels. Replacement personnel as well as supplies were transported by this patrol for Royal Canadian mounted police detachments, medical centres, radio and weather stations, trading posts, missions and schools. Government officers reported on such matters as Eskimo economy, food, health conditions, trading, administration of family allowances, relief and old-age pensions, education, social conditions and vital statistics.

The Canadian Handicrafts guild, assisted by a grant from the Northwest Territories administration, helped to supplement the income of the Eskimos by encouraging the handicraft industry. In 1952 Eskimos produced for commercial marketing carvings in stone, ivory and wood, as well as articles fabricated from various skins and furs.

Agriculture and Fisheries.—Limited farming and horticultural activity was carried out at several settlements in the Mackenzie district. This work was actively encouraged and assisted by the department of agriculture. Many varieties of vegetables were successfully grown, as well as several types of grain. A commercial garden was operated at Yellowknife.

During the summer season of 1951 and the winter season of 1951-52 commercial fishing on Great Slave lake produced a total catch of 7,133,800 lb. with a market value of \$2,178,627. Whitefish, lake trout and inconnu were the principal species taken.

Fur Trading.—Fur production in the territories during the year ended June 30, 1951, was valued at \$2,038,339 with a total of 643,579 pelts taken during that period. Muskrats constituted about 80% of the catch. Trapping continued to be the principal occupation of the native population, and was strictly controlled by regulations. Four semidomesticated reindeer herds were maintained by the federal government in the Mackenzie delta region for the benefit of the native population; three of these herds were under Eskimo management.

The government also maintained buffalo herds in Wood Buffalo park with a view to the preservation and protection of this valuable animal species in its natural habitat. The taking of big game and fur-bearing animals found in this park is governed by the Wood Buffalo park game regulations. A limited slaughter of reindeer and buffalo for meat production is carried out annually. Some reindeer meat was sold to residents and both reindeer and buffalo meat was donated to mission hospitals and schools and to the Indian affairs branch of the department of citizenship and immigration.

Production and Industry.—Mineral production in the Northwest Territories during 1951 was valued at \$8,288,747, of which gold accounted for \$7,819,975. Crude oil production was continued at Norman Wells on the Mackenzie river and amounted to 227,449 bbl. After being processed at the local refinery, the oil was shipped to various points on the Mackenzie river. (H. A. Y.)

Norway. A democratic monarchy of northern Europe, Norway is bounded north by the Arctic ocean, east by Finland, the U.S.S.R. and Sweden, south and west by the North sea. Area: 125,182 sq.mi. Pop. (1951 est.) 3,294,000. Capital: Oslo, 420,000. Other principal cities (1946 census): Bergen,

107,293; Trondheim, 56,522; Stavanger, 49,173. Religion: Lutheran Christian. Ruler in 1952: King Haakon VII. Prime minister: Oscar Torp.

Spitsbergen (Svalbard), Norwegian since 1925, is an archipelago lying about midway between northern Norway and the north pole. Area: 23,979 sq.mi. Pop. (1949): about 1,600 Norwegians and an estimated 2,350 Russians.

History.—Norway's defense program was of special interest in 1952 because it represented what a small country with eager will but meagre resources could accomplish. For a coast line of 2,125 mi., fjords and inlets extending 12,500 mi. and 150,000 islands, Norway could muster 30,000 conscripts in 1940, but only 25,000 in 1945 and 18,800 by 1955, as a result of the declining number of births. The defense plans of 1946-49 called for a \$60,000,000 capital outlay and the expenditure of \$36,000,000 per year. This meant 4% of national incomes and 19% of the budget. Circumstances forced steady increases in these expenditures. The new plan for 1952-55 called for outlays of \$125,000,000 per year—about 8% of the national income, or more than 28% of the budget.

These expenditures were to provide, by the end of 1952, for an army of four field divisions, 50% above 1950 strength, and for a similar increase in the air force. The home guard, organized under army command, was to have 120,000 men uniformed and equipped, plus 45,000 volunteers; 121,700 were training in the rifle clubs. The women's auxiliary numbered 25,000. For the army the basic training period had been raised from 9 months to 12 months, with 60-day refresher courses; it was to be increased further to 18 months. The navy was being augmented, but in early 1952 it numbered 95 units, including 9 destroyers, 6 minesweepers, 8 submarines and 18 motor torpedo boats. Many merchant ships were also equipped for war service—in one of the world's largest and best merchant fleets. The air force, to have 11 fighter squadrons by the end of 1952, was in process of changing from British Vampire jets to U.S. F-84 Thunderjets. New air fields in Norway were to be built with aid from the North Atlantic Treaty organization.

Since Jan. 1947, the Norwegians had supplied a field brigade of 4,400 men in Germany. Their contributions to the Korean war included appropriations of \$4,000,000 and the establishment of a 120-bed mobile hospital.

Norway was pushing vigorously to increase industrial production. In 1951 the level was 50% above that of 1938. Export industry had risen in 1951 to 9.5% above 1950; there was a good surplus in foreign payments accounts, but still a shortage in dollars. Falling prices for pulp, paper, wood and whale oil forecast continued stringency. But the merchant fleet was increased to more than 6,000,000 tons, and the 1951-52 logging season saw the cutting goal surpassed by 9%; the total fall was 270,000,000 cu.ft. In April 1952 the Sydvaranger iron ore mines resumed operation (aided by \$5,000,000 of Marshall plan equipment); production for 1952 was forecast at 500,000 tons and for 1953 at 1,000,000 tons. The ten-year plan for north Norway envisioned expenditure of \$10,000,000 for the expansion of fishing, farming, mining, manufacturing, communications and power.

The great debate of the year resounded over the price and industry control bill proposed by the government. Commerce, industry and handicraft groups protested strenuously in early July, and the bill was modified before it was publicized again in September. One of the proposals that was abandoned had provided that a private business could be forced to join with another or be taken over by government if the government authority decided it was operating uneconomically; another cancelled paragraph would have freed the price directorate from all other laws but this one, with itself as the judge of its actions.

Despite such ameliorations, the bill was still a far-reaching measure of government control, giving power to set maximum and minimum prices, and to control earnings, agreements, quality, production, replacement, etc. The government argued that in a country of 3,000,000 people competition did not function in any case, and that to guarantee full employment, increasing productivity and equal wages the state must regulate.

On Jan. 5 Jens Christian Hauge resigned as minister of defense; he was replaced by Nils Langhelle, whose post as minister of communications was taken by Jakob Pettersen.

The long-standing dispute with Great Britain over the method of measuring the territorial limits of Norwegian waters was settled by a decision of the International court at The Hague. The Norwegian contentions that the lines should be drawn from headland to headland were judged valid; the result was to give Norway undisputed control of fishing and shipping areas much farther out than previously recognized. (F. D. S.)

Education.—Schools (1948-49): rural elementary 5,497, pupils 226,284; urban elementary, pupils 73,890; secondary 306, pupils 39,921. Universities (1950): 2, students 4,046; other institutions of higher education (excluding teachers' training colleges) 6, students 1,723.

Finance and Banking.—Budget: (1951-52 est.) revenue kr. 3,668,000,000, expenditure kr. 3,230,000,000; (1952-53 est.) revenue kr. 4,053,000,000, expenditure kr. 3,715,000,000. National debt (June 30, 1951): kr. 10,281,000,000, including balance of occupation account kr. 6,202,000,000 and foreign debt kr. 1,151,000,000. Currency circulation (Aug. 1952) kr. 2,569,000,000. Deposit money (July 1952) kr. 6,082,000,000. Gold and foreign exchange (Aug. 1952) U.S. \$146,500,000. Monetary unit: krone (plural kroner), with an exchange rate (Nov. 1952) of kr. 20 to the pound and kr. 7.15 to the U.S. dollar.

Foreign Trade.—(1951) Imports kr. 6,256,000,000; exports kr. 4,423,000,000. Main sources of imports (1951): U.K. 23%; Sweden 12%; U.S. 13%; Germany 8%. Main destinations of exports: U.K. 20%; Germany 9%; Sweden 8%; U.S. 7%. Main imports: ships and boats 14%; textiles 13%; coal, petroleum and products 11%; machinery 9%. Main exports: wood pulp and paper 30%; fish and products 14%; fats and oils 11%; nonferrous metals and manufactures 9%.

Transport and Communications.—Roads (1951): 45,128 km. Licensed motor vehicles (Dec. 1951): cars 73,507, trucks 60,392. Railways (1951): 4,472 km., including state railways 4,392 km.; traffic on state railways (1951): passenger-kilometres 1,519,000,000; freight net ton-kilometres 1,457,000,000. Shipping: merchant vessels, 100 gross tons and more (July 1952) 2,217, total tonnage 5,924,805. Air transport (1951): kilometres flown 8,900,000; passenger-kilometres 199,700,000; freight net and mail ton-kilometres 8,500,000. Telephones (1951): 781,678. Radio receiving set licences (1952): 818,750.

Agriculture and Fisheries.—Main crops (metric tons, 1951-52): wheat 40,000; barley 130,000; oats 180,000; rye 1,000; potatoes 1,015,000. Livestock (June 1951): cattle 1,231,000; sheep 1,929,000; pigs 386,000; goats 118,000; horses 184,000; chickens 4,689,000. Food production (metric tons, 1951): delivered milk 9,657,000 hl.; butter, factory production 11,200; cheese (factory production) 28,900; meat 97,000, including beef and veal 47,000, mutton and lamb 15,000, pork (excluding lard) 35,000. Wool production (clean basis, 1951-52): 2,000 metric tons. Fisheries (1951): total catch 1,818,680 metric tons, valued at kr. 480,000,000. Whale oil production (1951): 190,900 metric tons, valued at kr. 358,000,000.

Industry.—Industrial establishments employing 5 workers or more, excluding electrical plants and construction and building industries (1950): 6,166; persons employed: 38,134 salaried staff and 219,265 workers; gross value of production: kr. 8,883,000,000. Fuel and power (1951): coal 470,400 metric tons; manufactured gas 47,500,000 cu.m.; electricity 17,216,000,000 kw.hr. Timber production (1950): sawn softwood 1,227,000 cu.m. Raw materials (metric tons, 1951): iron ore (65% metal content) 438,000; pig iron 241,200; copper, smelter 8,640; zinc, smelter 40,200; aluminum, smelter 51,200; nickel 11,000; ferrosilicon (calculated 45% basis) 72,100; sulphur 98,400; pyrites 692,900; nitrogen 168,400; wood pulp (dry basis) 553,900. Manufactured goods (metric tons, 1951): cellulose, dry basis 529,300; newsprint 169,000; other paper and board 340,000; cement 720,000. Merchant vessels launched, 100 gross tons and more (1951): 50; total tonnage 73,107. Index of industrial production (1951 [1948=100]): general index 119, producers' goods 119, consumers' goods 119.

Nose and Throat, Diseases of: see EAR, NOSE AND THROAT, DISEASES OF.

Nova Scotia. Second smallest of the Atlantic provinces of Canada, Nova Scotia entered the confederation in 1867. Area: 21,068 sq.mi. Pop. (1951): 642,584. Capital: Halifax, pop. (1951) 85,589.

History.—The third session of the 21st provincial legislature met on Feb. 12, 1952, and was informed by Liberal premier Angus L. MacDonald that provincial revenues continued to fall short of increased costs of public services and administration.

The province received about \$3,000,000 additional revenues from the new federal tax plan, but that amount was less than expected because the population had not increased as rapidly as anticipated. Increased taxes therefore came under consideration, and a ten-cent per ton levy was imposed on gypsum, which was heavily mined in Nova Scotia and previously untaxed. The federal government undertook restoration of the citadel hill fort, built in 1749 and said to have been once the strongest in North America; \$1,000,000 was earmarked to preserve it as a national historic site.

Education.—The provincial government refused to foot the educational bill beyond the 65% of the total cost it already paid, and the controversial teachers' salaries question provoked a rash of strikes. The problem was not aided by the abolition of the 80-year-old municipal school fund, closing of which increased the financial burdens of rural municipalities.

Health and Welfare.—The Nova Scotia health survey committee reported a number of recommendations, including: more co-operative federal, provincial and municipal planning; development of a system of government subsidies and grants, together with low-cost voluntary prepayment insurance plans, to build up medical care, dental and hospital facilities.

Transportation and Communication.—In April the first sod was turned for the Halifax-Dartmouth suspension bridge, to cost \$8,000,000.

Forestry.—Large-scale lumber operations during the winter of 1951-52 created a lumber boom that topped any similar postwar period. The 1950-51 season, considered relatively poor, saw 32,300,000 bd.ft. of lumber produced, which was 40% more than the 1939 production. The provincial forest conservation plan was extended by a ban on cutting small trees.

Industry.—Industrial and employment buoyancy was reflected in various indexes. In 1939 the employment index was 100.0 and the aggregate pay rolls index was 100.0; the average weekly earnings (salaries and wages) were \$21.42. In 1951 the employment index was 149.4; the pay rolls index was 296.4; the weekly earnings, \$42.51. In July 1952 the respective figures were 160.2, 341.5 and \$45.66. (C. Cy.)

Nursing: see HOSPITALS.

Nutrition, Experimental. Experiments by J. Mayer and M. W. Bates, concerned with the relationship between blood sugar levels and food intake in rats, were reported during 1952. An attempt was made to determine whether elevation or depression of blood sugar levels within physiologic limits could significantly influence food intake.

Comparisons were also made of the effect on food intake of nutrients which were capable of exerting a direct influence on blood sugar with that of preparations of similar caloric value which did not directly affect blood glucose levels. The results indicated that the procedures which induced an increase in blood sugar without appreciably decreasing utilization of glucose were accompanied by significant reductions in food intake.

The investigators acknowledged that there is a problem involved in applying their "glucostatic" theory of food intake regulation to conditions associated with chronically abnormal levels of blood glucose, such as diabetes mellitus. Although they implied that a quantitative relationship between carbohydrate utilization and food intake regulation may exist, the investigators made no attempt to carry their thesis to this point.

The problem of the origin of the urge to eat is one of the oldest in nutrition and physiology. Its study is associated with many of the great names in the history of these sciences. In view of the many advances in the existing knowledge about the intermediary metabolism of foodstuffs, it was natural to wonder whether the interesting correlation between variations in blood glucose and food intake could not now be quantitated.

It had been known for years that soil fertility is important to human welfare because of its influence on the production of crops. Conflicting claims had appeared regarding the influence of soil fertility on the nutritional quality of crops or animal products. A long-term study was initiated at the Michigan Agricultural Experiment station in 1945 and was planned for continuation for at least a ten-year period. The study was designed to answer the following question: Does the fertility of the soil affect the nutritive value of the crops, the nutrition of the



CHILDREN SKIPPING ROPE in a sealed respiration chamber during a series of energy expenditure tests conducted for the U.S. department of agriculture in 1952. Results of the tests were to help set standards for school lunches and famine relief shipments

cow, the nutritive value of the milk and, ultimately, the health of the consumer?

Ten pairs of heifers (from cows bred to the same sire) were selected for the experiment. One of each pair received feeds grown on well-fertilized soil and the other received feeds grown on the same type of soil, but which was severely depleted and unproductive. The crops selected to serve as feed were those that would most likely grow satisfactorily on both the fertile and the depleted soil. Brome grass and timothy were grown as the hay component of the ration and soybeans were grown as a protein supplement. Corn, wheat and oats were grown as the grain components of the ration. Yields per acre from the depleted soil were only about one-half those from the fertilized soil.

Both groups of cows were managed identically, were maintained on the same plan of nutrition for full milk production, and consumed approximately the same amounts of digestible protein and total digestible nutrients. The heifer calves were being retained in the respective herds as replacement stock, and provided a means of ascertaining the cumulative effects on later generations of the continued use of feeds grown on depleted as well as on fertile soil.

The essential amino acid content of colostrum and milk proteins from the animals in the two herds was reported. The essential amino acid content of the colostrum and milk proteins and also the protein content were not affected by the level of soil fertility. The Michigan workers concluded that the amount and kinds of amino acids in milk proteins remain rather constant

irrespective of the soil fertility conditions under which the cow's feed is grown. In the initial report the nutritive value of the milk from the herds was tested in feeding experiments with rats. No differences could be detected that were traceable to soil fertility. The conclusion was drawn that, based on data accumulated over a five-year period, there is no justification for assuming that the level of soil fertility can influence the quality of cow's milk. This was in no way meant to imply that farmers should not use fertilizers. On the contrary, the economic advantages of improved crop yields from fertilization of depleted soils are usually tremendous.

It should be remembered that the composition and nutritive value of milk is difficult to alter. Serious deficiencies, such as deficiencies of calcium or phosphorus, bring about a decline in milk production and seriously affect the health of the cow, yet have little or no effect in modifying the composition or quality of the milk.

A study was made of the effect of the "poor rice diet" of south India on the growth of rats, and the results from supplementation with egg yolk, egg yolk extracts, casein and riboflavin. The investigations were designed to show whether the fat-soluble or nonfat-soluble nutrients of egg yolk were effective to account for the known nutritive value of whole egg yolk in animals maintained on this rice diet. It was found that the animals fed the basal rice diet from the beginning with a supplement of 30% egg yolk gained weight well, and that the addition of the other above supplements and also cod-liver oil did not increase the rate of gain in weight.

Many of the antibiotics such as penicillin, streptomycin, terramycin and aureomycin had been found to improve growth when they were added in small amounts to the ration of experimental animals. Aureomycin was one of the first antibiotics for which growth-promoting activity was suggested. The chick was used as the experimental animal. The observation was extended to the pig and turkey, as well as to the calf and rat. P. K. Vijayaraghavan, E. A. Murphy and M. S. Dunn extended the series of experimental animals, the growth of which can be stimulated by aureomycin, to include the laboratory mouse. They also showed that this effect seems dependent on the biologic value of the dietary protein.

The mechanism of this growth-stimulating activity of aureomycin or other antibiotics was unknown. Possible explanations might be inhibition of toxin-producing vitamin B₁₂ or other nutrients, or reduction of competition between host and flora for certain nutrients. It was also reported that aureomycin may have marked effects on the metabolism of mammalian tissues and in particular on phosphorylation reactions. Recalling the fact that the majority of positive reports on the action of aureomycin on growth were obtained, as in their experiments with mice, with diets containing plant proteins (soybean and cottonseed), it was postulated that antibiotics may promote the development of a microflora which enhances the availability or the intestinal synthesis of critical amino acids. When proteins of high biologic value are provided, such as is the case with diets containing peanut protein, or the mixture of proteins found in calf meal or casein, these amino acids are not limiting factors for growth and the favourable effect of aureomycin cannot be observed. This conclusion appeared to be a reasonable hypothesis, which could eventually be tested experimentally by adding the pure amino acids likely to be the least available to the diets showing the aureomycin effect, and seeing whether one or a mixture of these supplements does, in fact, cancel the aureomycin effect. (See also VITAMINS AND NUTRITION.)

Chem., 196:33-43 (May 1952); P. K. Vijayaraghavan, E. A. Murphy and M. S. Dunn, "The Effect of Aureomycin on the Growth of Mice," *Arch. Biochem.*, 36:127-131 (March 1952). (F. J. Se.; M. F. T.)

Nuts. The U.S. tree nut crops of 1952 were all indicated as above average, though pecans and almonds were less plentiful than in 1951. Of the 127,256,000 lb. of 1952-crop pecans, 18% less than the 154,895,000 lb. of 1951, about half, or 64,187,000 lb., were improved varieties, down 26% compared with 86,660,000 lb. in 1951, but above the 54,026,000-lb. average for 1941-50.

The California almond crop was indicated at 35,300 tons, compared with 42,700 tons in 1951 and an average for 1941-50 of 31,140 tons. The Mediterranean basin crop was forecast at 92,000 short tons (shelled basis), exceeded only by 98,700 tons in 1950, and large compared with 66,600 tons in 1951. Exports from this area's 1951 crop were 50,700 tons, or 76% of the crop, as against 78,000 tons from that of 1950. Pres. Harry S. Truman, in September, acting under the Agricultural Adjustment act, after investigation by the tariff commission, proclaimed an additional duty of five cents per pound (additional to a 16½-cent per pound duty) on shelled almond imports, up to 7,000,000 lb., ten cents per pound on additional amounts.

The filbert crop, grown mostly in Oregon, was indicated at a record 11,550 tons of average quality, 67% above the 6,920 tons of 1951 and compared with an average for 1941-50 of 7,021 tons. The world crop of 99,840 tons was a small one, whether measured against the 1941-50 average (110,200 tons) or the 143,720 tons of 1951.

English walnuts, mostly a California crop, were estimated at 80,100 tons, compared with 77,400 tons in 1951 and an average of 69,700 tons. The crop in Mediterranean basin countries was estimated at 73,500 tons, compared with 51,200 tons in 1951 and 41% more than the 1941-50 average of 52,000 tons.

The Indian cashew nut crop of 1952 of 48,700 tons was equal to the ten-year average, but moderately smaller than 1950 or 1951. (See also PEANUTS.) (J. K. R.)

Nyasaland. Nyasaland is a British protectorate in central Africa. Area: (including lakes) 48,444 sq.mi.; (land only) 37,928 sq.mi. Pop.: (1945 census) 2,049,914, including 1,948 Europeans; (1951 est.) 2,400,000, including c. 4,000 Europeans and c. 5,000 Asiatics. Religion: pagan, with Christian minority. Chief towns: Zomba (cap.; pop. 1949, 7,434), Blantyre, Limbe. Governor in 1952, Sir Geoffrey Colby.

Education.—(1951): European schools 5, pupils 683; Asian and coloured 9, pupils 645; African 4,600, pupils 241,941.

Finance and Trade.—Currency: sterling, with Rhodesian silver coinage. Budget: (1951 revised est.) revenue £4,095,854, expenditure £4,143,300; (1952 est.) revenue £3,964,593, expenditure £4,157,187. Foreign trade (1951): imports £7,293,756; exports £6,028,296. Principal exports (1951 values): tobacco £2,733,431, tea £2,028,866.

Communications.—Roads (1951) 4,765 mi.; railways 316 mi.

(W. H. Is.)

Nylon: see RAYON AND OTHER SYNTHETIC FIBRES.

Oats. The 1,265,660,000-bu. oat crop of the United States in 1952 was 4% below that of 1951 and the average of 1941-50. Seeded acreage of 43,052,000 ac. was in excess of early intentions and about 4% above the government goal. But extremely high temperatures in June hastened maturity and reduced yields and grain test weights. Iowa was the leading producer (215,320,000 bu.), followed by Minnesota (203,819,000 bu.) and Wisconsin (130,118,000 bu.). Stocks of old oats on

Table 1.—U.S. Oat Crops

	1952	1951	Average 1941-50
Total production (thousands of bushels)	1,265,660	1,316,396	1,310,736
Acreage harvested (thousands)	38,682	36,454	39,667
Yields (bushels per acre)	32.7	36.1	33.0

BIBLIOGRAPHY.—J. Mayer and M. W. Bates, "Blood Glucose and Food Intake in Normal and Hypophysectomized, Alloxan-Treated Rats," *Am. J. Physiol.*, 168:812-819 (March 1952); M. J. Oesterling and W. C. Rose, "Tryptophan Requirement for Growth of Its Optical Isomers," *J. Biol.*

Table II.—Oat Production of the Principal Producing Countries

Country	(In thousands of bushels)		
	1952*	1951	Average 1935-39
United States	1,265,660	1,316,396	1,045,329
U.S.S.R.	750,000†	750,000†	1,165,000
Canada	474,169	488,191	338,071
France	223,240	254,120	329,304
United Kingdom	178,500	183,120	138,628
Western Germany	178,000	195,000	194,500
Preliminary. For 1950.			

farms as of July 1 were 245,000,000 bu., 5% less than in 1951 but 12% above average. Imports into the United States from Canada in 1951-52 of about 60,000,000 bu. were the largest since 1944. A feature of 1952 was the sharp decline in prices by about one-fifth after the early part of the year. The official support price at the farm on the 1953 oat crop was announced as 80 cents per bushel, up from 78 cents on the 1952 crop.

The world crop, estimated at 4,115,000,000 bu., was below that of 1951 (4,295,000,000 bu.) or the pre-World War II average of 4,365,000,000 bu., primarily because of smaller crops in western Europe and the U.S. Canadian exports, and surpluses available there for export from old stocks and from the new crop, continued large.

(J. K. R.)

Obituaries.

The following is a selected list of prominent men and women, of the United States and other countries, who died during the year 1952:

Addison, Sir (Albert) Percy, British naval officer (b. Nov. 8, 1875—d. Lymington, Eng., Nov. 13, 1952).

Adler, Max, U.S. philanthropist (b. Elgin, Ill., 1866—d. Beverly Hills, Calif., Nov. 4, 1952), studied violin as a young man at the Berlin, Ger., Royal Conservatory of Music. After appearing in a number of concerts he took up a business career, becoming vice-president of Sears, Roebuck and company in Chicago before his retirement in 1928. He was the donor of Adler planetarium in Chicago, the first built in the United States—opened on the Chicago lake front in May 1930.

Agostini, Carlo, Italian Roman Catholic patriarch (b. San Martino di Lupari, near Treviso, It., April 22, 1888—d. Venice, It., Dec. 28, 1952), was ordained priest in 1910 and taught at the seminary at Treviso, of which he became rector before he was consecrated bishop of Padua in 1932. He became Latin patriarch of Venice in 1949. Monsignor Agostini had been among the 24 prelates designated as cardinals by Pope Pius XII on Nov. 29, 1952; he was to have received the red hat at Rome on Jan. 12, 1953.

Alda, Frances (FRANCES DAVIES), U.S. operatic soprano (b. Christchurch, N.Z., May 31, 1885—d. Venice, It., Sept. 18, 1952), studied music as a child in New Zealand and at the age of 17 sang in Gilbert and Sullivan productions in Melbourne, Austr. She later studied in Paris, where in 1904 she made her operatic debut at the Opéra-Comique, singing the title role in Massenet's *Manon*. At La Scala in Milan, It., in 1907 she met Arturo Toscanini, who was to become her lifelong friend, and the impresario Giulio Gatti-Casazza, whom she married in 1910 (they were divorced in 1928). Mme. Alda made her first appearance at the Metropolitan Opera in New York city in Dec. 1908 as Gilda in Verdi's *Rigoletto*, starring Enrico Caruso and Louise Homer. Thereafter, until her farewell performance at the Metropolitan 21 years later, she sang in more than 40 soprano roles and never missed a performance scheduled for her. After her retirement from a brilliant career in Dec. 1929 she continued to appear in concerts and on several series of radio programs; she also taught voice in New York city. In 1941 she married Ray Vir Den, an advertising executive.

Alexandrine, queen mother of Denmark (b. Schwerin, Dec. 24, 1879—d. Copenhagen, Den., Dec. 28, 1952), was born the Duchess Alexandrine-Augustine, elder daughter of the Grand Duke Friedrich-Franz III of Mecklenburg-Schwerin. She was married at Cannes on April 26, 1898, to Crown Prince Christian, eldest son of King Frederick VIII of Denmark. He succeeded his father in 1912 as King Christian X and died on April 20, 1947. Queen Alexandrine was notable for her sense of duty and for her love of music which her son, King Frederick IX, inherited from her.

Allen, Paul Hastings, U.S. composer (b. Boston, Mass., Nov. 28, 1883—d. Brookline, Mass., Sept. 28, 1952).

1952 OBITUARIES: Sveinn Björnsson, Icelandic statesman; Howard Chandler Christy, U.S. artist; Sir Stafford Cripps, British government official; Benedetto Croce, Italian philosopher; Jo Davidson, U.S. sculptor

Alonso, Amado, Spanish-American philologist and literary critic (b. Lerin, Sp., Sept. 13, 1896—d. Arlington, Mass., May 26, 1952).

Altglass, Max Mayer, Polish-born tenor (b. Warsaw, Pol., Feb. 16, 1895—d. New York, N.Y., Feb. 13, 1952).

Ames, Louis Annin, U.S. manufacturer and civic worker (b. St. Helena Island, S.C., Sept. 5, 1866—d. Essex Fells, N.J., Nov. 28, 1952).

Anderson, Sir Alan Garrett, British shipping executive and politician (b. March 9, 1877—d. London, Eng., May 4, 1952).

Aranow, Harry, Russian-born obstetrician and gynaecologist (b. Minsk, Russia, Aug. 20, 1878—d. New York, N.Y., July 31, 1952).

Arden-Close, Sir Charles Frederick, British cartographer and geographer (b. Aug. 10, 1865—d. Winchester, Eng., Dec. 19, 1952).

Armour, Laurance Hearne, U.S. banker and meat-packing firm executive (b. Kansas City, Mo., March 8, 1888—d. Chicago, Ill., Dec. 29, 1952).

Arosemena, Carlos Julio, Ecuadorian banker and government official (b. 1894—d. Guayaquil, Ecuador, Feb. 20, 1952).

Ascalesi, Alessio Cardinal, Italian Roman Catholic prelate (b. Casalnuovo, It., Oct. 22, 1872—d. Naples, It., May 11, 1952).

Ashe, Bowman Foster, U.S. educator (b. Scottdale, Pa., April 3, 1885—d. Coral Gables, Fla., Dec. 16, 1952), received his bachelor's degree in economics at the University of Pittsburgh, Pa., in 1912. From 1903 to 1914 he was a school teacher or administrator at various places in Pennsylvania; he then entered private business. He was an associate professor of economics and later student counsellor and university examiner at the University of Pittsburgh from 1920 to 1926, when he was appointed first president of the University of Miami, Fla. He held this position until his death.

Astor, Waldorf Astor, 2ND VISCOUNT, OF HEVER CASTLE, IN THE COUNTY OF KENT, British newspaper publisher and politician (b. New York, N.Y., May 19, 1879—d. Cliveden, Buckinghamshire, Eng., Sept. 30, 1952). (For details of his life, see *Encyclopædia Britannica*.)

Atherton, John C., U.S. artist, designer and writer (b. Brainerd, Minn., June 7, 1900—d. New Brunswick, Can., Sept. 15, 1952).

Austen, Alice Elizabeth, U.S. photographer (b. Staten Island, N.Y., 1866—d. West Brighton, Staten Island, June 9, 1952), was the daughter of a wealthy real estate agent and was educated at private schools in New York city and Staten Island. She adopted photography as a hobby when a young girl and in the next half century took, developed and printed more than 5,000 pictures. Their value as historical documents and as examples of a fine photographic technique was not discovered until near the middle of the 20th century, after she had presented the prints to the Staten Island Historical society. Ill and poverty-stricken by that time (she had lost her fortune following the 1929 stock market crash), she acquired belated recognition as one of the first and most proficient woman photographers in the United States.

Ayer, Nat(haniel Davis), British-U.S. composer of popular music (b. Boston, Mass., 1887?—d. Bath, Eng., Sept. 19, 1952), first attracted attention as one of the songwriters for the *Ziegfeld Follies* of 1909. Subsequently he moved to England where he composed the score for *The Bing Boys*, which opened in London in 1916 and was one of the musical successes of the period; his "If You Were the Only Girl in the World" from that play became an international hit song, exceeded only in popularity by his "Oh You Beautiful Doll." Ayer later wrote the music for several other musical plays produced in England.

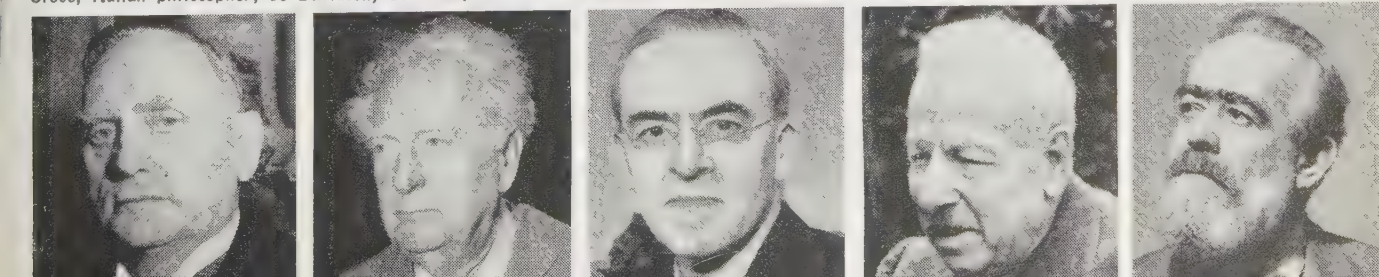
Aylesworth, Allen Bristol, Canadian lawyer (b. Newburgh, Ont., Nov. 27, 1854—d. Toronto, Ont., Feb. 13, 1952).

Aylesworth, Merlin Hall, U.S. attorney and business executive (b. Cedar Rapids, Ia., July 19, 1886—d. New York, N.Y., Sept. 30, 1952).

Ayre, Sir Amos Lowrey, British shipbuilder (b. South Shields, Durham, Eng., July 23, 1885—d. London, Eng., Jan. 13, 1952).

Ayres, William Augustus, U.S. lawyer and government official (b. Elizabethtown, Ill., April 19, 1867—d. Washington, D.C., Feb. 17, 1952).

Azuela, Mariano, Mexican author and physician (b. Lagos, state of Jalisco, Mex., Jan. 1, 1873—d. Mexico City, Mex., March 1, 1952), was educated at the Faculty of Medicine and Pharmacy at Guadalajara, Mex., from which he received his medical degree in 1898. In his lifetime he wrote more than 20 novels, an anthology of Mexican prose, two biographies and a play. His best-known work, *Los de abajo* (1916), was translated into English by Anita Brenner as *The Under Dogs*, and was published in seven other languages as well. Other novels included *Mala yerba* (1909), *Las Moscas* (1918), *La Malhora* (1923) and *El Camarada* (1937). Azuela was one of the founders



- of the Mexican National College of Science and Arts in 1942 and was active in national education programs. He was awarded the 1950 National Literary prize, most coveted in Mexico, by Pres. Miguel Alemán. At the time of his death he was working on two novels and his memoirs.
- Babcock, Harriet** (MRS. H. HOBART BABCOCK), U.S. psychologist (b. Westerville, R.I., Jan. 7, 1877—d. New York, N.Y., Dec. 17, 1952), was educated at Columbia university, New York city, where she received her doctorate in 1930. From 1926 to 1928 she was chief psychologist at Bellevue hospital in New York city. An authority on mental deficiency, she was the author of *An Experiment in the Measurement of Mental Deterioration* (1930), *Dementia Praecox: a Psychological Study* (1933), *Revised Examination for the Measurement of Efficiency of Mental Functioning* (1941) and *Time and the Mind* (1941).
- Bancroft, Jessie Hubbell**, U.S. educator and author (b. Winona, Minn., Dec. 20, 1867—d. Pittsfield, Mass., Nov. 13, 1952).
- Barber, Thomas Gerrard**, British Anglican clergyman and author (b. Nottingham, Eng., 1875—d. Derby, Eng., Oct. 15, 1952).
- Barbour, Phillips T.**, U.S. editor (b. Louisville, Ky., June 17, 1884—d. New York, N.Y., Jan. 9, 1952).
- Bartlett, John Henry**, U.S. politician, former governor of New Hampshire (b. Sunapee, N.H., March 15, 1869—d. Portsmouth, N.H., March 19, 1952).
- Bartsch, Hans**, German-born theatrical producer (b. Germany, 1884?—d. Bullville, N.Y., July 10, 1952).
- Bartsch, Rudolf Hans**, Austrian novelist (b. Graz, Aus., Feb. 11, 1873—d. Graz, Feb. 7, 1952).
- Baskin, Joseph**, Russian-born labour leader (b. Biala, Minsk, Russia, Oct. 20, 1880—d. New York, N.Y., June 26, 1952).
- Bastie, Maryse**, French aviatrix (b. 1900—d. Lyons, Fr., July 6, 1952).
- Bear, Donald**, U.S. museum director and author (b. Seymour, Ind., Feb. 5, 1905—d. Los Angeles, Calif., March 16, 1952).
- Bedford, Frederick Henry, Jr.**, U.S. businessman (b. Brooklyn, N.Y., Sept. 15, 1891—d. Barranquilla, Colombia, Dec. 3, 1952).
- Bell, (Henry) Hesketh (Joudou)**, British politician (b. West Indies, Dec. 1864—d. London, Eng., Aug. 1, 1952).
- Bell, Sir Thomas**, British shipbuilder and marine engineer (b. Sirsawa, India, 1865—d. Helensburgh, Dumbartonshire, Scot., Jan. 9, 1952).
- Bellinger, Clarence Henry**, U.S. physician (b. Lebanon, N.Y., Feb. 22, 1887—d. New York, N.Y., Aug. 12, 1952).
- Belluzzo, Giuseppe**, Italian scientist, economist and politician (b. Verona, It., Nov. 25, 1876—d. Rome, It., May 22, 1952).
- Benians, Ernest Alfred**, British educator (b. Goudhurst, Kent, Eng., Oct. 23, 1880—d. Cambridge, Eng., Feb. 13, 1952).
- Benjamin, Raymond**, U.S. attorney and political leader (b. Vallejo, Calif., Dec. 14, 1872—d. Westport, Conn., June 18, 1952), was admitted to the California bar in 1893. He was district attorney of Napa county, Calif., from 1902 to 1908, chief deputy attorney general of the state from 1908 to 1919 and state superintendent of banks from 1919 to 1922. Meanwhile he had become active in Republican politics, serving as chairman of the Republican state committee from 1918 to 1922 and as regional director of the Republican national committee from 1918 to 1921; he was also assistant chairman of the latter organization from 1918 to 1936. A close friend and adviser of Herbert C. Hoover, Benjamin became known as the "Colonel House" of President Hoover's administration (1929-33), holding no public office but being consulted frequently on political matters.
- Béranger, Henri**, French diplomat and journalist (b. Rugles, Eure, Fr., April 22, 1867—d. Nice, Fr., May 18, 1952).
- Berninghaus, Oscar Edmund**, U.S. artist (b. St. Louis, Mo., Oct. 2, 1874—d. Taos, N.M., April 27, 1952).
- Bingham, Walter Van Dyke**, U.S. psychologist (b. Swan Lake, Ia., Oct. 20, 1880—d. Washington, D.C., July 8, 1952).
- Birley, Sir Oswald Hornby Joseph**, New Zealand-born portrait painter (b. Auckland, N.Z., March 31, 1880—d. London, Eng., May 6, 1952).
- Björnsson, Sveinn**, Icelandic statesman (b. Copenhagen, Den., Feb. 27, 1881—d. Reykjavik, Ice., Jan. 25, 1952), after graduating at Copenhagen university in 1907, went to Reykjavik and practised law in the superior court and later in the supreme court. He was active in the Independence (conservative) party and was a member of the *althing* from 1914 to 1916 and in 1920. Iceland being a sovereign state united with the Danish crown after Dec. 1, 1918, he was minister to Denmark from 1920 to 1924 and again from 1926 to 1941. When the Germans invaded Denmark he returned to Iceland and on June 17, 1941, was elected regent by the *althing*. On June 17, 1944, Björnsson was elected first president of the Icelandic republic. He was re-elected in 1945 and 1949.
- Black, George Harold**, Canadian-born educator (b. Georgetown, Ont., June 6, 1873—d. Palo Alto, Calif., Feb. 24, 1952).
- Blake, Francis Gilman**, U.S. medical educator (b. Mansfield Valley, Pa., Feb. 22, 1887—d. Washington, D.C., Feb. 1, 1952), received his B.A. degree from Dartmouth college, Hanover, N.H., in 1908 and his M.D. from Harvard in 1913. From 1940 to 1947 he was dean of the Yale university school of medicine and at the time of his death was civil director of U.S. army medical research. He was the author of many books and articles on epidemiology and conducted pioneer clinical tests on the sulfa drugs and penicillin.
- Blakeslee, Howard Walter**, U.S. journalist (b. New Dungeness, Wash., March 21, 1880—d. Port Washington, L.I., N.Y., May 2, 1952).
- Blanco, Juan Carlos**, Uruguayan diplomat (b. Montevideo, Urug., Dec. 6, 1879—d. Montevideo, May 3, 1952), was granted his law degree from the University of Montevideo. He entered public life as director of the port of Montevideo and was elected several times to the national legislature as a deputy. In 1919 he was the Uruguayan delegate plenipotentiary to the Versailles peace conference, and later chief delegate of his country to the League of Nations. He also served as minister of public works and minister of the interior and was twice foreign minister. In 1941 he was appointed first Uruguayan ambassador to the United States. His other ambassadorial posts included Argentina, Brazil and France. Blanco was the author of various works on ports and on legal subjects, and was a professor of literature and law at the University of Montevideo.
- Blenner, Carle (John)**, U.S. painter (b. Richmond, Va., Feb. 1, 1862—d. New Haven, Conn., April 12, 1952).
- Block, Leopold E.**, U.S. industrialist (b. Cincinnati, O., Jan. 13, 1869—d. Chicago, Ill., Nov. 11, 1952).
- Bloom, Benjamin**, U.S.-born banker and philanthropist (b. Healdsburg, Calif., Sept. 27, 1873—d. San Salvador, El Salvador, Jan. 1, 1952).
- Bonsels, Waldemar**, German novelist (b. Ahrensburg, Schleswig-Holstein, Feb. 21, 1881—d. Lake Starnberg near Munich, Ger., Aug. 17, 1952).
- Boole, Ella Alexander**, U.S. temperance leader (b. Van Wert, O., July 26, 1858—d. Brooklyn, N.Y., March 13, 1952), graduated from the College of Wooster, O., in 1878 and took her Ph.D. degree there in 1895. She taught school at Van Wert for five years before becoming actively engaged in the prohibition movement. From 1897 to 1903 she was president of a Woman's Christian Temperance union group in New York city; from 1909 to 1926 president of the W.C.T.U. state organization of New York; from 1925 to 1933 president of the national W.C.T.U.; and from 1931 to 1947 president of the World's W.C.T.U. She was also corresponding secretary for the woman's board of home missions of the Presbyterian Church in the U.S. from 1903 to 1909. Mrs. Boole was credited with being a powerful influence in securing adoption of the 18th amendment in 1919. She was an unsuccessful candidate for U.S. senator from New York on the Prohibition ticket in 1920.
- Bornstein, Joseph**, Polish-born writer and editor (b. Cracow, Pol., 1899?—d. New York, N.Y., June 25, 1952).
- Bosanquet, Sir Ronald (Samuel) Courthope**, British lawyer and author (b. Monmouthshire, Eng., Sept. 6, 1868—d. Monmouthshire, Nov. 5, 1952).
- Bosmans, Henriette**, Dutch pianist and composer (b. Amsterdam, Neth., Dec. 6, 1895—d. Amsterdam, Neth., July 37, 1952).
- Bourassa, Henri**, Canadian publisher and political leader (b. Montreal, Que., Sept. 1, 1868—d. Outremont, Que., Aug. 31, 1952).
- Bourbon y de la Torre, Francisco de Paula-Maria-Alfonso Jose de**, Spanish monarchist and army officer (b. Madrid, Sp., 1882—d. Madrid, Dec. 6, 1952).
- Bower, Alexander**, U.S. artist and art instructor (b. New York, N.Y., March 31, 1875—d. Wilmington, Del., Aug. 6, 1952).
- Breadner, Lloyd Samuel**, Canadian air chief marshal (b. Carleton Place, Ont., July 14, 1894—d. Boston, Mass., March 14, 1952), was educated at the Collegiate institute in Ottawa. During World War I he was an air squadron commander in Flanders, Belg., and won the distinguished service cross. On the formation of the royal Canadian air force in April 1924 he was commissioned and later became acting director (1928-32). Early in World War II he was appointed chief of the air staff and air vice-marshal in charge of general R.C.A.F. operations. He gave up this post in Nov. 1943 to go overseas as commander-in-chief of the R.C.A.F. in Great Britain. Shortly before his retirement in 1945 he was advanced to air chief marshal, the first to hold that rank in the R.C.A.F.
- Breisach, Paul**, Austrian-born conductor (b. Vienna, Aus., June 3, 1896—d. New York, N.Y., Dec. 26, 1952), studied at the state academy of music at Vienna and joined the Vienna Opera in 1918 as a conductor and assistant to the composer Richard Strauss. He later held important musical posts in Germany and was conductor of the Municipal Opera at Berlin until 1933, when the nazis discharged him. He went to the United States in 1939, becoming a U.S. citizen in 1945. From 1941 to 1946 he was conductor of the Metropolitan Opera in New York city, and from 1946 until his death conductor of the San Francisco, Calif., Opera. He was also conductor of the Cincinnati, O., Summer Opera and directed summer concerts at Grant park in Chicago, Ill.
- Brewer, Bessie Marsh** (MRS. SAM S. BREWER), Canadian-born etcher and painter (b. Toronto, Ont., June 1, 1883—d. New York, N.Y., April 29, 1952).
- Brickell, Henry Herschel**, U.S. literary critic (b. Senatobia, Miss., Sept. 13, 1889—d. Ridgefield, Conn., May 29, 1952), studied at the University of Mississippi, University, Miss., from 1906 to 1910. He was a reporter, copy-reader and editor for various newspapers between 1911 and 1923, book columnist for the *New York Evening Post* from 1923 to 1928 and literary

editor of that paper from 1934 to 1938. From 1928 to 1933 he had been general publications editor for Henry Holt & company, publishers. Meanwhile he wrote book reviews for the *New York Times*, *New York Herald Tribune* and *Saturday Review of Literature*, and in 1940 became editor of the annual volume of O. Henry memorial prize short stories. An authority on Latin American literature and history, Brickell was appointed senior cultural relations officer to the U.S. embassy at Bogotá, Col., in 1941 and assistant chief of the cultural co-operation division of the U.S. state department in 1944. Brickell was the author of several works on U.S. and Latin American literature. His death at his Connecticut home was termed a suicide.

Briggs, Sir Harold Rawdon, British statesman and army officer (b. Yorkshire, Eng., July 14, 1894—d. Nicosia, Cyprus, Oct. 27, 1952).

Briggs, Walter Owen, U.S. industrialist (b. Ypsilanti, Mich., Feb. 27, 1877—d. Miami Beach, Fla., Jan. 17, 1952).

Briggs, William Harlowe, U.S. author and editor (b. Kalamazoo, Mich., July 22, 1876—d. New York, N.Y., July 31, 1952).

Brink, Francis G., U.S. army officer (b. Marathon, N.Y., Aug. 22, 1893—d. Washington, D.C., June 24, 1952).

Broadbridge, George Thomas Broadbridge, 1ST BARON, British politician and former lord mayor of London (b. Brighton, Sussex, Eng., Feb. 13, 1869—d. Cornwall, Eng., April 16, 1952).

Broadhurst, George, U.S. playwright (b. Walsall, Eng., June 3, 1866—d. Santa Barbara, Calif., Jan. 31, 1952).

Brown, Margaret Wise, U.S. author of children's books (b. New York, N.Y., May 23, 1910—d. Nice, Fr., Nov. 13, 1952), studied as a young girl at Lausanne, Switz., and received her B.A. degree from Hollins (Va.) college in 1932. Later she was a member of the studies and publications department of the Bureau of Educational Experiments (the "Bank Street school") in New York city. Under three pen names—Golden MacDonald, Timothy Hay and Juniper Sage—as well as under her own, she wrote more than 60 children's books. Miss Brown also was the author of a number of songs recorded for children.

Brush, Katharine, U.S. author (b. Middletown, Conn., Aug. 15, 1902—d. New York, N.Y., June 10, 1952), was educated at Centenary Collegiate institute in Hackettstown, N.J., and was a motion-picture columnist for the *Boston Traveler* from 1918 to 1920. In 1923 she began writing fiction, including two novels and a volume of short stories, but attracted little attention until her *Young Man of Manhattan* appeared in 1930. This novel about a young New York sports reporter was a best seller, as was *Red-Headed Woman*, published the following year. None of her later work, including *Don't Ever Leave Me* (1935), *This Is on Me* (1940), *The Boy From Maine* (1942), *Out of My Mind* (1943) and *This Man and This Woman* (1944) enjoyed comparable popularity.

Bryson, Gladys Eugenia, U.S. sociologist, educator and author (b. Carlisle, Ky., April 2, 1894—d. Northampton, Mass., Dec. 18, 1952).

Bull, Jerome Case, U.S. businessman (b. Racine, Wis.—d. New York, N.Y., Nov. 16, 1952).

Bulliet, Clarence Joseph, U.S. art critic and author (b. Corydon, Ind., March 16, 1883—d. Chicago, Ill., Oct. 20, 1952), received his bachelor's degree from Indiana university, Bloomington, in 1905 and in the same year joined the staff of the *Louisville* (Ky.) *Herald*. Subsequently he worked on several other papers until 1932, when he was appointed art critic of the *Chicago Daily News*; he was also motion-picture critic of that paper from 1939 to 1942 and music critic from 1941 to 1948. He was one of the ten U.S. founding members of the International Association of Art Critics at Paris, Fr., in 1948. Among his published works were *Apples and Madonnas* (1927), *Venus Castina* (1928), *The Significant Moderns and Their Pictures* (1936), *Masterpieces of Italian Art* (1939), *Eccentrics in Modern Art* (1947), *The Eccentrics* (1951) and *Art Treasures From Vienna* (1952).

Burnside, R. H., British author and producer (b. Glasgow, Scot., Sept. 7, 1870—d. Metuchen, N.J., Sept. 14, 1952).

Burton, Jean, Canadian-U.S. author and editor (b. Abernethy, Sask., 1905—d. Berkeley, Calif., Jan. 18, 1952).

Busbey, Leroy White, Jr., U.S. naval officer (b. Washington, D.C., March 7, 1897—d. San Francisco, Calif., Feb. 27, 1952).

Busch, Adolf Georg Wilhelm, German-born violinist and composer (b. Siegen, Ger., Aug. 8, 1891—d. Guilford, Vt., June 9, 1952), was the son of a musician and violinmaker. Beginning his study of music at the age of 4, he made his debut as a concert violinist while still in his teens, after having studied violin and composition at Cologne and Bonn. From 1912 to 1918 he played first violin for the Vienna orchestra in Austria. He also founded the famous Busch String quartet and later the Busch Chamber Music players. He left Germany after Adolf Hitler became chancellor and never returned, continuing his concert tours throughout the rest of Europe and in the near east, and making his home for a while in Basle, Switz. In 1939 he moved to the United States, where he became a naturalized citizen. He appeared often on the concert stage with his son-in-law Rudolf Serkin, pianist, and his brother Hermann Busch, cellist, and was also a frequent soloist with orchestras conducted by another brother, Fritz Busch (1890-1951).

Busch's compositions included piano and violin sonatas, songs, *études* for orchestra, and symphonies.

Butler, John Washington, U.S. educator (b. 1876?—d. Lafayette, Tenn., Sept. 24, 1952).

Butler, Sir Montagu Sherard Dawes, British statesman (b. May 19, 1873—d. Cambridge, Eng., Nov. 7, 1952).

Byrne, Eugene Hugh, U.S. educator (b. Baraboo, Wis., Nov. 16, 1882—d. Princeton, N.J., Sept. 23, 1952).

Byrne, Patrick J., U.S.-born Roman Catholic bishop and missionary (b. Washington, D.C.—missing in Korea and declared officially dead by the Vatican Oct. 29, 1952).

Cadbury, Henry Tylor, British newspaper director (b. Woodbrooke, Eng., Oct. 10, 1882—d. London, Eng., Sept. 25, 1952).

Cade, Svend, Danish theatre and movie director (b. 1876?—d. Aarhus, Den., June 25, 1952).

Cairns, Sir Hugh William Bell, British surgeon (b. Port Pirie, Austr., June 26, 1896—d. Oxford, Eng., July 18, 1952), was educated at Adelaide High school and Adelaide university. He qualified in medicine in 1917 while serving in the Australian army, and was a Rhodes scholar at Balliol college, Oxford university, 1919-20, becoming a fellow in 1937. He was Hunterian professor at the Royal College of Surgeons, 1925, and a Rockefeller travelling fellow in the United States, 1926-27, when he became a pupil of Harvey Cushing and became interested in neurosurgery. He was honorary surgeon to the London Hospital for Paralysis and Epilepsy, 1931-34, and to the National Hospital for Diseases of the Nervous System, 1934-37. When Lord Nuffield decided to endow the Oxford medical school, Cairns helped to work out the lines of development which it should follow and in 1937 he became Nuffield professor of surgery. During 1942-50 he was a member of the council of the Royal College of Surgeons. He was knighted in 1946.

Carter, Rupert Franklin, U.S. surgeon (b. Holly Springs, N.C., 1894—d. New York, N.Y., April 19, 1952).

Castelnuovo, Guido, Italian mathematician and senator (b. Venice, It., Aug. 14, 1865—d. Rome, It., April 27, 1952).

Chambrun, Count Charles de, French diplomat (b. Washington, D.C., Feb. 10, 1875—d. Paris, Fr., Nov. 6, 1952).

Champion de Crespigny, Sir (Constantine) Trent, Australian physician (b. Queenscliff, Victoria, Austr., March 5, 1882—d. Adelaide, Austr., Oct. 27, 1952).

Chase, George Henry, U.S. archaeologist and educator (b. Lynn, Mass., June 13, 1874—d. Cambridge, Mass., Feb. 2, 1952), was educated at Harvard university, where he received his doctorate in 1900, and at the American School of Classical Studies in Athens, Gr. Beginning as an instructor in Greek and Latin at Harvard in 1901, he was later assistant professor and professor of archaeology (1906-45), dean of the graduate school of arts and sciences (1925-39), dean of the university (1939-45) and acting president of the university during the World War II period while James B. Conant was absent on government work. He was the author of several books and papers on classical sculpture and philology.

Chernov, Victor: see Tchernov.

Choibalsan, Khorloghiyin, Mongolian politician and army officer (b. Feb. 8, 1895—d. Moscow, U.S.S.R., Jan. 26, 1952).

Christy, Howard Chandler, U.S. artist (b. Morgan county, O., Jan. 10, 1873—d. New York, N.Y., March 3, 1952), attended school at Duncan Falls, O., and went to New York city in 1893 to study art. He decided early to become an illustrator and accompanied the 2nd U.S. regulars to Cuba during the Spanish-American War on journalistic assignments. His illustrations of Theodore Roosevelt's "Rough Riders," published in *Leslie's*, *Harper's*, *Scribner's* and other magazines, made him a national figure. His World War I posters, "Fight or Buy Bonds!" and "Americans All," were familiar to millions. In 1920 Christy gave up illustration for portrait painting. Among his scores of famous subjects were Warren G. Harding, Calvin Coolidge, Herbert C. Hoover, Charles E. Hughes, Will Rogers, Fritz Kreisler, Mary Baker Eddy and Francis Cardinal Spellman. His large painting, "Signing of the Constitution," was hung in the national capitol at Washington, D.C., and one of the signing of the United Nations charter in the state capitol building at Columbus, O. He also illustrated three books by James Whitcomb Riley.

Most of Christy's illustrations between 1910 and 1920 were done for Hearst magazines. During this period he created the famous "Christy Girl."

Clark, Sheldon, U.S. business executive (b. Chicago, Ill., Aug. 29, 1876—d. Chicago, Aug. 15, 1952).

Clark, William Clifford, Canadian bank official (b. Martintown, Ont., April 18, 1889—d. Chicago, Ill., Dec. 27, 1952).

Clement, Mrs. Emma Clarissa, U.S. civic worker, named "American Mother of the Year" in 1946, the only Negro so honoured (d. Louisville, Ky., Dec. 26, 1952).

Clementis, Vladimir, Czechoslovak politician (b. Tisovec, Slovakia, Sept. 20, 1902—d. Prague, Czechoslovakia, Dec. 3, 1952), was a Communist organizer in Slovakia during the 1930s and in 1935-38 was a Communist deputy in the Czechoslovak parliament. In 1939-40 he was in exile in France and from 1940 to 1944 he was a member of the legal council of the Czechoslovak government in exile in London. He returned to Czechoslovakia in 1945 and was undersecretary of state for foreign affairs from then until 1948 when he became foreign minister. While serving as a delegate to the United Nations general assembly, New York city, 1949, he was told of reports that he would be arrested on his return to Czechoslovakia. In March 1950 he was relieved of his post of foreign minister and in Feb. 1951 he was formally expelled from

the party and arrested. In Nov. 1952 Clementis, with ten others, including Rudolf Slansky, was sentenced to death by a People's court in Prague for being concerned in an alleged Jewish plot to overthrow communism in Czechoslovakia. He was hanged on Dec. 3.

Cobb, John Rhodes, British racing motorist (b. Esher, Surrey, Eng., Dec. 2, 1899—d. Loch Ness, Scot., Sept. 29, 1952), was educated at Eton and at Trinity hall, Cambridge. In private life a businessman, he devoted his spare time to motor racing, becoming well-known at Brooklands where, in 1932-39, he broke all the world's records for time and distance up to 24 hr., and where he was holder of the lap record of 143.4 m.p.h. In 1938 he first broke the world's land speed record at Bonneville salt flats, Utah, in a Raiton car, with a mean speed of 350.20 m.p.h.; this was beaten by Captain George Eyston a day later, but in 1939 Cobb again broke the record with a speed of 369.7 m.p.h. After World War II, in which he served in the royal air force and in the air transport auxiliary, he returned to Utah and, on Sept. 16, 1947, broke his own record with a mean speed of 394.2 m.p.h., having travelled at more than 403 m.p.h. in the process. He was killed while making an attempt on the world's water speed record in his jet-propelled boat "Crusader".

Coburn, Richard (FRANK D. DE LONG), U.S. song writer (b. Ipswich, Mass., June 8, 1886—d. Los Angeles, Calif., Oct. 27, 1952).

Collins, Seward Bishop, U.S. publisher and editor (b. Syracuse, N.Y., April 22, 1899—d. Laconia, N.H., Dec. 8, 1952).

Conklin, Edwin Grant, U.S. biologist (b. Waldo, O., Nov. 24, 1863—d. Princeton, N.J., Nov. 20, 1952), was an international authority on genetics and heredity. For his career prior to his retirement from the faculty of Princeton university in 1933, see *Encyclopaedia Britannica*. He continued active research after his retirement, writing 3 books and almost 100 scientific articles to add to the total of approximately 175 works written before 1933. In his later years he devoted much study to the effects of scientific advance upon civilization, pointing out that social and political progress had been far out-distanced by progress of the physical sciences.

Cook, Arthur Bernard, British classical archaeologist (b. Oct. 22, 1868—d. Cambridge, Eng., April 26, 1952).

Copeland, Charles Townsend, U.S. educator and editor (b. Calais, Me., April 27, 1860—d. Waverley, Mass., July 24, 1952).

Coupland, Sir Reginald, British historian and author (b. Aug. 2, 1884—d. Southampton, Eng., Nov. 6, 1952).

Cox, Edward Eugene, U.S. legislator (b. near Camilla, Ga., April 3, 1880—d. Bethesda, Md., Dec. 24, 1952), took his law degree at Mercer university, Macon, Ga., in 1902 and set up legal practice in Camilla. From 1912 to 1916 he was a judge of the superior court of the Albany, Ga., circuit. He was elected to the U.S. house of representatives as a Democrat from the 2nd Georgia district in 1924 and served consecutively in the 69th-82nd congresses (1925-53); in Nov. 1952 he was re-elected to the 83rd congress. Among southern Democrats he was one of the most vocal and most colourful opponents of the administrations of Franklin D. Roosevelt and Harry S. Truman.

Coyle, Kathleen, Irish-U.S. novelist (b. Ireland, 1885?—d. Philadelphia, Pa., March 25, 1952), lived in Paris for a number of years before making her home in the United States at the beginning of World War I. Her best-known novel was *Lio* (1929).

Cripps, Sir (Richard) Stafford, British government official and lawyer (b. London, Eng., April 24, 1889—d. Zurich, Switz., April 21, 1952), was educated at Winchester and at University college, London. He was called to the bar in 1913, and in 1914, being medically unfit for the army, he went to France as a Red Cross driver, returning in 1915 to become assistant superintendent of a munitions factory. He later returned to the bar and in 1927 became a king's counsel. He joined the Labour party in 1929 and was knighted and made solicitor general in 1930, being elected Labour member of parliament for East Bristol in 1931. When Ramsay MacDonald formed his national government in 1931, Cripps refused to serve in it. An opponent of "gradualism" and on the extreme left of the Labour party, he helped to found the Socialist league in 1932. Nevertheless, he was elected to the national executive council of the Labour party in 1934, only to have to resign from it within a year over his opposition to its support for League of Nations sanctions against Italy. In March 1937 the Labour party executive declared membership of the Socialist league to be incompatible with membership of the Labour party and the former was dissolved. The threat from nazi Germany in 1938 changed Cripps's views on foreign policy and he began his advocacy of a popular front. He refused to withdraw his campaign and was expelled from the Labour party in 1939. On May 20, 1940, Winston Churchill appointed him ambassador to Moscow where he concluded the Anglo-Soviet pact. On his return he was appointed lord privy seal, leader of the house of commons and a member of the war cabinet in Feb. 1942. In the same year he was sent to India in an unsuccessful attempt to work out that country's independence. In Nov. 1942 he was appointed minister of aircraft

production, remaining in this post until his appointment as president of the London Board of Trade in July 1945 (he had been readmitted to the Labour party in the same year). He went to India again in 1946 to seek a peaceful solution to India's problems but the hostility between the Congress party and the Moslem league proved insurmountable. Cripps's frank statements of the facts during the economic crisis of 1947 first earned him the epithet of "austerity" and in September he became minister for economic affairs. A few weeks later Hugh Dalton resigned and Cripps succeeded him as chancellor of the exchequer. The essentials of his policy were a concentration on exports, a carefully worked-out system of priorities in the distribution of raw materials designed to bring this about and a strict fiscal policy aimed at checking inflation. Ill health compelled him to resign from office and retire from public life on Oct. 20, 1950.

Croce, Benedetto, Italian philosopher, historian and statesman (b. Pescasseroli, Aquila, It., Feb. 25, 1866—d. Naples, It., Nov. 20, 1952), was educated at a Naples school and at Rome university. For an account of his work and his philosophy, see *Encyclopaedia Britannica*.

Croce's philosophy, which developed under the influence of Hegelianism, was grounded in an idealistic metaphysics that conceived reality in terms of idea, mind and history. Much of his writing was devoted to history, the philosophy of history and aesthetics. In keeping with the spirit of his philosophy, Croce was a man of sincere commitment to social and political ideals and action. Having become the leader of the opposition to Italian fascism during the later years of the Mussolini regime, he played a leading role, following World War II, as political philosopher and elder statesman in the establishment of democracy in Italy.

Crosby, Dixie Lee (WILMA W. WYATT), U.S. actress (b. Harriman, Tenn., Nov. 4, 1911—d. Hollywood, Calif., Nov. 1, 1952), entered motion pictures in 1928 and soon rose to stardom as a singer and dancer; she was also starred in several Broadway plays. She retired from screen and stage after her marriage in 1930 to the singer Bing Crosby.

Crowell, Benedict, U.S. business executive and army officer (b. Cleveland, O., Oct. 21, 1869—d. Cleveland, Sept. 8, 1952).

Cuddihy, Robert Joseph, U.S. publisher (b. New York, N.Y., Dec. 31, 1862—d. New York, Dec. 22, 1952).

Curtis, James Freeman, U.S. attorney (b. Manchester, Mass., Aug. 16, 1878—d. Miami, Fla., Nov. 24, 1952).

Dakin, Henry Drysdale, British-born research chemist (b. London, Eng., March 12, 1880—d. Scarborough-on-Hudson, N.Y., Feb. 10, 1952).

Dampier, Sir William Cecil, British scientist and author (b. London, Eng., Dec. 27, 1867—d. London, Dec. 11, 1952).

Daniel, Lewis C., U.S. etcher and painter (b. New York, N.Y., Oct. 23, 1901—d. near Brookville, Ill., July 18, 1952).

Dasso, David, Peruvian engineer and statesman (b. Lima, Peru, Feb. 25, 1896—d. Lima, May 18, 1952).

Davidson, Jo, U.S. sculptor (b. New York, N.Y., March 30, 1883—d. Tours, Fr., Jan. 2, 1952), studied at the Art Students league of New York city and at the Ecole des Beaux Arts in Paris. In 1907 he made Paris his permanent home, remaining there except for periodic trips to the United States and other countries until the beginning of World War II. He then returned to the United States, living in a farmhouse in Bucks county, Pa., and working in a studio in New York city. He had just returned to France from a trip to Israel, where he did casts for busts of Chaim Weizmann and David Ben-Gurion, when he died at Tours.

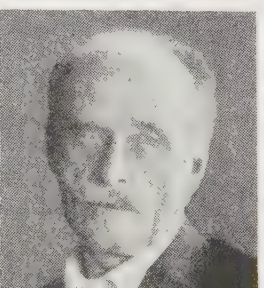
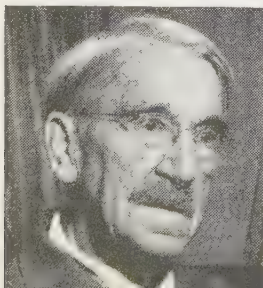
Davidson was popularly known as the "dean of American sculptors" and as the man who did more busts of great men and women than any other sculptor of his time. At the Paris peace conference in 1919 he modelled portrait busts of leading statesmen and military figures who met there. That of Woodrow Wilson was placed in the Luxembourg museum in Paris; others of the conference figures were placed in the Musée des Invalides. Among the numerous other portrait busts or statues of famous personages modelled by Davidson are those of Franklin D. Roosevelt, Mme. Chiang Kai-shek, Anatole France, John D. Rockefeller, Robert M. La Follette, Andrew W. Mellon, Walt Whitman, George Bernard Shaw, James Joyce, Will Rogers, H. G. Wells, Sir James Barrie, Sir Rabindranath Tagore, Mohandas Gandhi, Charles de Gaulle, Helen Keller, and various presidents of South American republics.

Davis, Harvey Nathaniel, U.S. educator and scientist (b. Providence, R.I., June 6, 1881—d. New York, N.Y., Dec. 3, 1952).

Dawes, Henry May, U.S. business executive (b. Marietta, O., April 22, 1877—d. Evanston, Ill., Sept. 29, 1952), graduated from Marietta (O.) college in 1896. He rose to become president of the Pure Oil company in 1924 and chairman of the executive committee of that company in 1947.

Deakin, Ralph, British newspaperman and author (b. Lincoln, Eng., Nov. 4, 1888—d. London, Eng., Dec. 19, 1952).

1952 OBITUARIES: John Dewey, U.S. educator and philosopher; George VI, king of England; Knut Hamsun, Norwegian novelist; Harold L. Ickes, former U.S. government official; Sister Elizabeth Kenny, Australian nurse



- Denain, Albert**, French army officer and former minister for air (b. Dax, Landes, Fr., Nov. 6, 1880—d. Nice, Fr., Dec. 31, 1952).
- de Pass, Alfred Aaron**, South African philanthropist and art collector (b. Capetown, U. of S. Af., 1861—d. Capetown, Dec. 9, 1952).
- Derry, John**, British aviator (b. Cairo, Egy., Dec. 5, 1921—d. Farnborough, Hampshire, Eng., Sept. 6, 1952).
- Dessar, Louis Paul**, U.S. painter (b. Indianapolis, Ind., Jan. 22, 1867—d. Preston, Conn., Feb. 14, 1952).
- Dewey, John**, U.S. educator and philosopher (b. Burlington, Vt., Oct. 20, 1859—d. New York, N.Y., June 1, 1952), took his B.A. degree in 1879 from the University of Vermont, Burlington, Vt., and his Ph.D. from The Johns Hopkins university, Baltimore, Md., in 1884. For his career and the main points of his philosophy, see his biography in *Encyclopedia Britannica*. His pragmatic philosophy, inspired by the scientific spirit and a profoundly democratic conscience and developed within a context defined by evolutionary biology and social psychology, had been a major determinant of the naturalistic and humanistic course of recent thought. Primarily a moral philosopher devoted to the achievement of the good society through human intelligence, Dewey made significant contributions to ethical theory, empirical methodology, logic, the theory of knowledge, psychology, the theory of language and meaning, the concept of truth, political theory, the philosophy of education and the philosophy of religion. He vigorously opposed supernaturalism, absolutistic metaphysics and ethics, the separation of thought from action, fact from value and science from morals. Long before his death, Dewey had become a symbol of liberalism in philosophic thought, education and social action.
- Dickinson, John**, U.S. attorney (b. Greensboro, Md., Feb. 24, 1894—d. Baltimore, Md., April 9, 1952).
- Dietrich, Otto**, German politician and journalist (b. Essen, Ger., 1897?—d. Duesseldorf, Ger., Nov. 22, 1952).
- Dodd, Monroe Elmon**, U.S. Baptist clergyman and author (b. Brazil, Tenn., Sept. 8, 1878—d. Shreveport, La., Aug. 6, 1952).
- Dolman, John, Jr.**, U.S. author and teacher (b. Philadelphia, Pa., May 21, 1888—d. Swarthmore, Pa., July 9, 1952).
- Donnedieu de Vabres, Henri**, French criminologist, jurist and educator (b. Nîmes, Fr., July 8, 1880—d. Paris, Fr., Feb. 15, 1952).
- Douglas, Norman** (GEORGE NORMAN DOUGLASS), British novelist and essayist (b. Tilquhillie, Kincardineshire, Scot., Dec. 8, 1868—d. Capri, It., Feb. 9, 1952), was educated at Uppingham school and at Karlsruhe, Ger. His main interests were scientific and he wrote various papers on zoology. He served in the diplomatic corps at St. Petersburg, U.S.S.R., from 1894 to 1896, when he left the service and went to Italy. Eventually he settled on Capri. An unsuccessful collection of short stories, *Unprofessional Tales* (1901) was followed by *Siren Land* (1911), about the Sorrento peninsula, and *Old Calabria* (1915). Douglas established his literary reputation in 1917 with the celebrated novel *South Wind*, whose wit and irony called forth comparisons with Peacock and Wilde. His later books include *They Went* (1921); *Alone* (1921), which he later described as his favourite; *Together* (1923); *Birds and Beasts of the Greek Anthology* (1929); and two autobiographical works, *Looking Back* (1933) and *Late Harvest* (1946). Douglas was a lively, erudite writer and a hedonist and sceptic.
- Dreier, Katherine S.**, U.S. artist (b. Brooklyn, N.Y., Sept. 10, 1877—d. Milford, Conn., March 29, 1952), was a leader in the U.S. Abstractionist school of art, associated with the French painter Marcel Duchamp in the organization known as *Société Anonyme* in New York city.
- Duffy, Charles G.**, U.S. newspaperman and public information officer for the North Atlantic Treaty forces (b. Boston, Mass., 1899?—d. Naples, It., Dec. 10, 1952).
- Dugdale, Thomas Cantrell**, British artist (b. Blackburn, Eng., June 2, 1880—d. London, Eng., Nov. 13, 1952).
- Duncan, Sir Andrew Rae**, British politician and industrialist (b. Irvine, Ayrshire, Scot., June 3, 1884—d. London, Eng., March 30, 1952).
- Dunraven and Mount-Earl, Windham Henry Wyndham-Quin, 5TH EARL**, British author (b. Feb. 7, 1857—d. County Limerick, Ire., Oct. 23, 1952).
- Du Pont, Lammot**, U.S. industrialist (b. Wilmington, Del., Oct. 12, 1880—d. New London, Conn., July 24, 1952).
- Eames, Emma**, U.S. operatic soprano (b. Shanghai, China, Aug. 13, 1867—d. New York, N.Y., June 13, 1952).
- Egan, Raymond Blanning**, Canadian-U.S. songwriter (b. Windsor, Ont., Nov. 14, 1890—d. Westport, Conn., Oct. 13, 1952), attended the University of Michigan, Ann Arbor. He composed a number of hit songs, including "Till We Meet Again," "Japanese Sandman," "Sleepy Time Gal" and "Ain't We Got Fun," and wrote the lyrics for a number of musical shows produced in the United States.
- Einstein, Alfred**, German-U.S. musicologist (b. Munich, Ger., Dec. 30, 1880—d. El Cerrito, Calif., Feb. 13, 1952).
- Elena**, former queen of Italy (b. Cetinje, Montenegro, Jan. 8, 1873—d. near Montpellier, Fr., Nov. 28, 1952). was born Princess Elena Petrovich Niegosh, daughter of Nicholas I, king of Montenegro. She married the prince of Naples in Rome in Oct. 1896 and became queen of Italy in 1900 when her husband succeeded to the throne as King Victor Emmanuel III. Her beauty, modesty and charitable work won the people's affection. Soon after her husband's death in 1947 Queen Elena went to live in retirement in southern France.
- Elsaesser, Armin E.**, U.S. surgeon (b. Switzerland, 1875—d. Youngstown, O., Oct. 29, 1952).
- Eluard, Paul** (EUGÈNE GRINDEL), French poet, novelist and essayist (b. St. Denis, Fr., Dec. 14, 1895—d. St. Denis, Nov. 18, 1952).
- Eve, Frank Cecil**, British physician (b. Silsoe, Bedfordshire, Eng., Feb. 15, 1871—d. England, Dec. 7, 1952).
- Farnol, John Jeffery**, British novelist (b. Birmingham, Eng., Feb. 10, 1878—d. Eastbourne, Sussex, Eng., Aug. 9, 1952).
- Farwell, Arthur**, U.S. composer (b. St. Paul, Minn., April 23, 1872—d. New York, N.Y., Jan. 20, 1952).
- Faulhaber, Michael Cardinal von**, German Roman Catholic ecclesiastic (b. Heidenfeld, Lower Franconia, Ger., March 5, 1869—d. Munich, Ger., June 12, 1952), was ordained in 1892. He became professor of Old Testament exegesis at Strasbourg university, Alsace, Fr., in 1903. In 1910 he was consecrated bishop of Speyer. He became archbishop of Munich in 1917 and was elevated to the Sacred college in 1921. In 1933 he preached a series of sermons attacking Hitler's persecution of the Jews, and in 1934, during the oppression of the Evangelical Church, he arranged for the use of Roman Catholic funds to aid dispossessed Bavarian pastors. After the breakdown of the nazi regime Faulhaber was an important unofficial adviser to the Allies. In Jan. 1951 Theodor Heuss, the west Federal German president, conferred upon him the Grand Cross of the Order of Service.
- Feller, Abraham Howard**, U.S. official of the United Nations (b. New York, N.Y., Dec. 24, 1904—d. New York, Nov. 13, 1952), took his bachelor's degree at Columbia university in 1925 and his law degree from Harvard in 1928; he then studied for a year at the University of Berlin, Ger. From 1931 to 1934 he taught at Harvard law school, then was appointed special assistant to the U.S. attorney general, holding this post until his appointment as associate professor of law at Yale university in 1940. During World War II Feller acted as special consultant or counsel to several executive emergency agencies of the federal government. He was a delegate to the United Nations organization conference at San Francisco, Calif., in 1945, and the following year he was appointed general counsel of the U.N. by Trygve Lie, the secretary-general. Feller leaped to his death from his New York city apartment during the height of U.S. investigations into alleged subversive activities of United States citizens employed by the U.N. Lie attributed the suicide to tension and overwork resulting from Feller's defense of U.N. employees against "indiscriminate smears and exaggerated charges."
- Flanagan, John**, U.S. sculptor (b. Newark, N.J., 1865?—d. New York, N.Y., March 28, 1952).
- Fogo, James Gordon**, Canadian political leader and attorney (b. Halifax, N.S., July 9, 1896—d. Murray Bay, Que., July 6, 1952), was educated at Dalhousie university, Halifax, and served overseas with the Canadian expeditionary forces in World War I. Admitted to the Nova Scotia bar in 1924, he became king's counsel in 1938, meanwhile practising law at Halifax. After serving on many government boards he was appointed to the Canadian senate in 1949. From his early years he had been closely associated with the affairs of the Canadian Liberal party, and in 1946 he became president of the National Liberal federation.
- Ford, Francis X.**, U.S.-born Roman Catholic bishop and missionary (b. Brooklyn, N.Y., Jan. 11, 1892—d. Canton, China, Feb. 21, 1952), was a graduate of the Maryknoll Catholic Foreign Missionary Society of America (near Ossining, N.Y.) and was ordained priest in 1917. The following year he went to China as a missionary. Consecrated first bishop of Meihsein in Kwangtung province in 1935, he remained in China until the end of World War II. After a brief visit in the United States he returned to China where, following the Communist defeat of the nationalist forces, he was placed under arrest in Dec. 1950. His death in a Communist prison hospital at Canton was reported from Hong Kong on Sept. 2, 1952, by a nun, his former secretary, who had been arrested at the same time but later released.
- Ford, Horatio**, U.S. attorney and civic leader (b. Cleveland, O., June 23, 1881—d. near Litchfield, Conn., Nov. 28, 1952).
- Fortescue, Granville (Roland)**, U.S. author (b. New York, N.Y., Oct. 12, 1875—d. West Palm Beach, Fla., April 21, 1952).
- Fox, William**, U.S. motion picture producer (b. Tulchva, Hung., Jan. 1, 1879—d. New York, N.Y., May 8, 1952), was brought by his parents to the United States as a boy and received little formal education. In his early 20s he operated a nickelodeon in New York city and soon founded an exhibition company and a chain of motion picture theatres. Turning to production, he set up a pioneer studio at Fort Lee, N.J., and in 1915 founded the Fox Film corporation, which later grew into a \$300,000,000 enterprise before its collapse in 1930. Fox was involved in protracted bankruptcy litigation during the depression years of the 1930s, and in 1935 the firm he founded was merged with 20th Century Pictures to form 20th Century-Fox. Two of Fox's best-known motion pictures were *What Price Glory* and *Seventh Heaven*.
- Frankau, Gilbert**, British author and journalist (b. April 21, 1884—d. Hove, Sussex, Eng., Nov. 4, 1952).
- Furse, Dame Katharine**, British founder of WRENS (b. Bristol, Eng., Nov. 23, 1875—d. London, Eng., Nov. 25, 1952).
- Gabriel, Gilbert Wolf**, U.S. author and drama critic (b. Brooklyn, N.Y., Jan. 18, 1890—d. Mount Kisco, N.Y., Sept. 3, 1952).

Gallatin, Albert Eugene, U.S. painter, author and art collector (b. Villanova, Pa., July 23, 1881—d. New York, N.Y., June 15, 1952).

Garfield, John (JULIUS GARFINKLE), U.S. actor (b. New York, N.Y., March 4, 1913—d. New York, May 21, 1952), attended the public schools of New York city and, under the tutelage of the child guidance specialist, Angelo Patri, studied dramatics. After playing minor roles with Eva Le Gallienne's Civic Repertory company he joined the Group Theatre Acting company. Later he starred in Arthur Kober's *Having a Wonderful Time*, but feeling under obligation to the Group Theatre, returned there to appear in such plays as *Golden Boy*, *Waiting for Lefty* and *Weep for the Virgins*. In 1938 he made his first appearance in motion pictures in *Four Daughters*. The picture was a success, and Garfield was cast thereafter as a gangster or tough—roles for which the public perhaps knew him best. Among his pictures were *Juarez*, *Saturday's Children*, *The Sea Wolf*, *Tortilla Flat*, *Between Two Worlds*, *Destination Tokyo*, *Humoresque*, *Force of Evil*, *Gentleman's Agreement* and *Body and Soul*. Garfield returned frequently to Broadway and had starred in a revival of *Golden Boy* just prior to his death. In 1951 Garfield was asked to testify before the house committee on un-American activities about alleged association with Communist-front organizations; he denied that he was either a Communist or fellow traveller.

Gaylord, Clifford W., U.S. business executive (b. Lockport, Ill., Oct. 10, 1883—d. St. Louis, Mo., Jan. 7, 1952).

George VI (ALBERT FREDERICK ARTHUR GEORGE), king of Great Britain, Ireland and the British dominions (b. York cottage, Sandringham, Norfolk, Eng., Dec. 14, 1895—d. Sandringham, Feb. 6, 1952), reigned over Great Britain from 1936 until his death (for details of his career, see *Encyclopædia Britannica*). He became king upon the abdication of his elder brother, King Edward VIII, in Dec. 1936, and was crowned in Westminster abbey the following May 12. Highlights of his reign included a visit to the United States in 1939 (the first such visit of a reigning English sovereign), his visits throughout Great Britain and to the North African front during World War II, his morale-building addresses during that war and his state visit to the Union of South Africa in 1947. He had planned to make a similar tour of Australia but was prevented from doing so by illness in 1948. His recovery was slow, but by 1951 he seemed to have regained health, sufficiently so at least to have made a number of public appearances. In the summer of 1951, however, he was again overtaken by illness and underwent an operation on one of his lungs in Buckingham palace on Sept. 23. Again his recovery seemed steady, and he made his customary Christmas day broadcast to the nation. His last appearance in public was on Jan. 31, 1952, when he went to the airport to say good-bye to Princess Elizabeth and the duke of Edinburgh at the start of their projected visit to Australia and New Zealand. He died at Sandringham in his sleep early in the morning of Feb. 6, 1952. The new queen, then at Kenya in Africa on the first part of her tour, returned immediately to London with her husband and was proclaimed Elizabeth II in succession to her father. After private rites at Sandringham, the king lay in state in Westminster hall, London, where 300,000 persons went Feb. 12–14 to pay their last respects. He was buried Feb. 15 in St. George's chapel, Windsor castle.

Gerber, Frank, U.S. industrialist (b. Fremont, Mich., May 6, 1898—d. Fremont, Oct. 7, 1952).

Gerhauser, William Henry, U.S. industrialist (b. Detroit, Mich., Jan. 7, 1889—d. Cleveland, O., Nov. 23, 1952).

Giannini, Lawrence Mario, U.S. banker (b. San Francisco, Calif., Nov. 25, 1894—d. San Francisco, Aug. 19, 1952), was the son of Amadeo Peter Giannini (1870–1949), founder of the huge California banking empire which was consolidated into the Bank of America National Trust and Savings association in 1930. Lawrence M. Giannini took his law degree from the University of California in 1920 and was admitted to the bar, but later decided to follow in his father's footsteps as a banker. In 1932 he was appointed senior vice-president of Bank of America and in 1936 president and chairman of the executive committee. At the time of his death, Bank of America with its numerous branches in California was the world's largest private commercial bank.

Gibbon, John Murray, Canadian author (b. Udewelle, Ceylon, April 12, 1875—d. Montreal, Que., July 2, 1952).

Globus, Joseph H., Russian-born U.S. neurologist (b. Vitebsk, Russia, Nov. 25, 1885—d. New York, N.Y., Nov. 20, 1952).

González, Martínez Enrique, Mexican government official and poet (b. Guadalupe, Mex., April 13, 1871—d. Mexico City, Mex., Feb. 19, 1952).

Gooch, Tom Carbry, U.S. editor and publisher (b. Bonham, Tex., Jan. 25, 1880—d. Dallas, Tex., June 13, 1952).

Goschen, Sir George Joachim, British diplomat (b. London, Eng., Oct. 15, 1866—d. Hawkhurst, Kent, Eng., July 24, 1952).

Gottlieb, Moritz Melvin, U.S. manufacturer and philanthropist (b. Washington, D.C., July 19, 1893—d. Boston, Mass., Nov. 23, 1952).

Gould, Edwin Miner Lawrence, U.S. Swedenborgian clergyman, lecturer and writer (b. Montreal, Que., May 4, 1886—d. New York, N.Y., Dec. 26, 1952).

Gow, James, U.S. playwright and motion-picture scenarist (b. Creston, Ia., Aug. 23, 1907—d. New York, N.Y., Feb. 11, 1952), graduated from the University of Colorado at Boulder and from 1928 to 1931 was a drama and film critic for the *New York World*. With Arnaud d'Usseau he wrote *Tomorrow the World* (1943) and *Deep Are the Roots* (1945), both outstanding successes on Broadway. Gow also collaborated on several motion pictures, including *One Night of Love* with Edmund North and *Repent at Leisure* with D'Usseau.

Green, William, U.S. labour leader (b. Coshocton, O., March 3, 1873—d. Coshocton, Nov. 21, 1952), led the American Federation of Labor as its president for almost 28 years (for his early career, see *Encyclopædia Britannica*). During the New Deal era Green generally opposed the principle of federal intervention in labour-management affairs; he was against the Wage-Hour act of 1938 and legislation proposed during World War II to enforce compulsory arbitration of industrial disputes. In Jan. 1942, however, shortly after Pearl Harbor, Green and Philip Murray of the Congress of Industrial Organizations both agreed to a labour truce for the duration of World War II. An effective adversary of Communism in the U.S. labour movement, Green resisted all Communist attempts to infiltrate A.F. of L. unions and refused to join the World Federation of Trade Unions in 1945 even before soviet domination of the W.F.T.U. had become evident.

Green denounced the Taft-Hartley act in 1947 as a "tragic mistake." He worked actively for the election of Pres. Harry S. Truman in 1948 and for Adlai E. Stevenson in 1952.

Gregory, Sir Richard (Arman), British physicist and meteorologist (b. Bristol, Eng., Jan. 29, 1864—d. Middleton-on-sea, Eng., Sept. 15, 1952).

Groll, Albert Lorey, U.S. artist (b. New York, N.Y., Dec. 8, 1866—d. New York, Oct. 2, 1952), graduated from the Royal academy at Munich, Ger., in 1899, then returned to the United States to take up residence in Arizona. There he specialized in desert landscapes that were often compared with the work of Frederic Remington and Winslow Homer. Groll was named a National academician in 1910 and was elected to the National Institute of Arts and Letters in 1932. His work is represented in a number of museums throughout the United States, and he was the recipient of a number of U.S. art awards and medals.

Grousset, René, French author and historian (b. Grenoble, Fr., Sept. 5, 1885—d. Paris, Fr., Sept. 12, 1952).

Grumbach, Salomon, French politician (b. Hattstatt, Alsace, Jan. 6, 1884—d. Neuilly, Fr., July 13, 1952).

Hached, Farhat, Tunisian labour leader (b. Kerkennah Islands, Tunisia, 1914—d. near Tunis, Tunisia, Dec. 5, 1952).

Haden, Russell Landram, U.S. physician and Red Cross official (b. Palmyra, Va., May 22, 1888—d. Cleveland, O., April 26, 1952).

Hahne, Ernest Herman, U.S. educator (b. Walker, Kan., Oct. 20, 1890—d. Oxford, O., Nov. 25, 1952), received his A.B. and LL.B. degrees at the University of Nebraska, Lincoln, his M.A. from Harvard university in 1914 and his Ph.D. from The University of Chicago in 1930. After teaching sociology and economics at Nebraska, Chicago and Dakota Wesleyan university, Mitchell, S.D., he joined the faculty of Northwestern university, Evanston, Ill., in 1919, becoming full professor of economics in 1935; he was also director of the summer session there from 1930 to 1939. In 1946 he was named president of Miami university at Oxford, O., serving in this position until his death.

Hamilton, Cicely Mary, British author, playwright, journalist and actress (b. London, Eng., 1872—d. London, Dec. 6, 1952).

Hamsun, Knut, Norwegian novelist (b. Lom, Nor., Aug. 4, 1859—d. Noerholm, Nor., Feb. 19, 1952), started life as a shoemaker's apprentice. He later emigrated to the United States and there attempted unsuccessfully to become a Unitarian minister. He returned to Norway in 1884, but was back in the U.S. two years later, working as a farm labourer in North and South Dakota and as a streetcar conductor in Chicago, Ill. In 1888 he returned to Europe and settled in Copenhagen, Den., publishing in 1890 his first literary success, the novel *Sult* (translated as *Hunger*). His greatest novel, *Markens Grøde* (*Growth of the Soil*), was published in 1917, and he was awarded the Nobel prize in 1920. His translated novels also include *Sejlgjess Town* (1915), *Vagabonds* (1927) and *August* (1930). In World War I Hamsun was pro-German and in his later years he became pro-Nazi. Arrested in 1945, he faced trial in 1946. Psychiatrists declared him to be prematurely weakened in mind and he was sentenced only to pay kr. 325,000 as indemnity for wartime earnings. His work portrays the individual's struggle against hunger and poverty and society.

Harding, Lyn (DAVID LLEWELLYN HARDING), British actor (b. St. Bride's near Newport, Monmouthshire, Eng., Oct. 12, 1867—d. Southend, Essex, Eng., Dec. 26, 1952).

Harmsworth, Sir Harold Cecil Aubrey, British newspaper publisher (b. June 13, 1897—d. London, Eng., Sept. 7, 1952).

Haskell, Henry Joseph, U.S. editor (b. Huntington, O., March 8, 1874—d. Kansas City, Mo., Aug. 20, 1952), was educated at Oberlin (O.) college, where he received his bachelor's degree in 1896. In 1898 he joined the staff of the *Kansas City Star*, becoming director of the editorial page in 1910 and editor in 1928. He was twice awarded the Pulitzer prize—for excellence of his editorial page in 1933 and for distinguished editorial writing in 1944. An acute observer of foreign affairs, he wrote numerous articles for the North American Newspaper Alliance. He was also author of *The New Deal in Old Rome* (1939) and *This Was Cicero* (1942).

Haskell, William Nafew, U.S. army officer (b. Albany, N.Y., Aug. 13, 1878—d. Greenwich, Conn., Aug. 13, 1952).

Hastings, Sir Patrick, British lawyer, government official and playwright (b. London, Eng., March 18, 1880—d. London, Feb. 26, 1952).

Hay, Ian (JOHN HAY BEITH), British writer (b. Manchester, Eng., April 17, 1876—d. near Petersfield, Hampshire, Eng., Sept. 22, 1952).

Heath, Bobby (ROBIN FREAR), U.S. song writer, author, pianist and composer (b. Philadelphia, Pa., Dec. 1, 1889—d. Philadelphia, March 3, 1952).

Hedin, Sven Anders, Swedish explorer (b. Stockholm, Swed., Feb. 19, 1865—d. Stockholm, Nov. 26, 1952), was educated at the Stockholm *högskola* (university) and at Uppsala, Berlin and Halle universities (for his early journeys, see *Encyclopedia Britannica*). He travelled round the world in 1923, through the United States, Mongolia and the U.S.S.R. In 1927 he organized the elaborate Sino-Swedish expedition which continued until 1935, and in 1947 he planned a journey to the Argentine. He was one of the 18 members of the Swedish Academy. His published works include *Through Asia* (1898), *Scientific Results of a Journey in Central Asia* (8 vol., 1899-1902), *Southern Tibet* (12 vol., 1917-22), *My Life as an Explorer* (1925), and *Scientific Results of the Sino-Swedish Expedition 1927-37* (35 vol., 1937-49).

Hem, Halvor Olsen, U.S. inventor and construction engineer (b. Saude, Nor., Aug. 14, 1863—d. Toledo, O., Nov. 11, 1952).

Henderson, Fletcher Hamilton, U.S. jazz musician and composer (b. Cuthbert, Ga., Dec. 18, 1897—d. New York, N.Y., Dec. 29, 1952), studied music at Atlanta (Ga.) university, then went to New York city in 1921 and organized his own jazz orchestra. As band leader, arranger for Benny Goodman, composer in his own right and developer of many other famous jazz musicians, Henderson was recognized as one of the greatest exponents of "swing" and "hot" music.

Henderson, Sir Hubert Douglas, British political economist (b. Oct. 20, 1890—d. Oxford, Eng., Feb. 22, 1952).

Henríquez y Carvajal, Federico, Dominican Republican educator and author (b. Santo Domingo (now Ciudad Trujillo), Dominican Republic, Sept. 16, 1848—d. Ciudad Trujillo, Feb. 4, 1952).

Herbert, Hugh, U.S. motion-picture actor (b. Binghamton, N.Y., Aug. 10, 1885—d. Hollywood, Calif., March 12, 1952), attended Cornell university, Ithaca, N.Y., and wrote several playlets and vaudeville skits before becoming known as an actor and comedian. His first association with motion pictures was in 1927 as the scenarist and an actor in *Mind Your Business*. He appeared in numerous pictures after 1933, including *Goodbye Again*, *Little Bit of Heaven*, *Hellzapoppin*, *A Midsummer Night's Dream* and *Top of the Town*. Herbert also starred in the stage play *Oh, Brother* and in a series of radio programs.

Herdon, Hugh, Jr., U.S. aviator (b. Titusville, Pa., Oct. 3, 1904—d. Cairo, Egy., April 5, 1952), made the first nonstop flight across the Pacific ocean with Clyde Pangborn in Oct. 1931. The flight was made from near Tokyo, Jap., to Wenatchee, Wash.—a distance of 4,833 mi.—in a small single-motor monoplane, with an elapsed time of 41 hr. 13 min. At the time of his death Herdon was middle and far eastern director of operations for a U.S. commercial air line.

Herrle, Colin, U.S. Red Cross official (b. Washington, D.C., July 9, 1892—d. Washington, Dec. 16, 1952).

Higger, Michael, U.S. legal scholar and rabbi (b. Rogovo, Lith., Jan. 6, 1898—d. New York, N.Y., Nov. 22, 1952).

Higgins, Andrew Jackson, U.S. shipbuilder (b. Columbus, Neb., Aug. 28, 1886—d. New Orleans, La., Aug. 1, 1952), attended Creighton university at Omaha, Neb., from 1903 to 1906, after which he became a lumber mill operator and exporter. In this business he acquired ownership of a large fleet of ships, and in 1930 organized his own shipbuilding company, Higgins Industries, Inc., at New Orleans. This company, which later expanded into aircraft and radio manufacture, became best known for its famed "Higgins boats" of World War II—troop and tank landing craft that were used in U.S. military operations throughout the world. Higgins was again awarded large U.S. defense contracts after the outbreak of the Korean war in 1950.

Holbrook, Lucius Roy, U.S. army officer (b. Arkansaw, Wis., April 30, 1875—d. San Francisco, Calif., Oct. 19, 1952).

Holland, Leicester Bodine, U.S. archaeologist and author (b. Louisville, Ky., May 23, 1882—d. Philadelphia, Pa., Feb. 7, 1952).

Hoover, William Harold, U.S. attorney and corporation executive (b. Lodi, O., April 20, 1889—d. Butte, Mont., June 6, 1952).

Horney, Karen, U.S. psychoanalyst and author (b. Hamburg, Ger., Sept. 16, 1885—d. New York, N.Y., Dec. 4, 1952).

Howe, Gene Alexander, U.S. editor (b. Atchison, Kan., March 22, 1886—d. near Amarillo, Tex., June 25, 1952).

Hrozný, Bedřich (FRIEDRICH), Czech orientalist (b. Lysa nad Labem, Bohemia, May 6, 1879—d. Prague, Czechoslovakia, Dec. 18, 1952), was educated at the universities of Prague, Vienna, Berlin and London. In 1905 he was appointed professor in Semitic languages at Vienna university and in 1919, when the state of Czechoslovakia was set up, he was appointed professor of cuneiform writings and the history of the ancient orient at Charles university, Prague. In 1915 he surprised the learned world with the news that he had read the Hittite language which, until then, had baffled many scholars. He contributed the article HITTITES in the *Encyclopædia Britannica*.

Hughes, William Morris, Australian statesman (b. London, Eng., Sept. 25, 1864—d. Sydney, Austr., Oct. 27, 1952), was prime minister of Australia during World War I (for his biography and a detailed account of his prime ministership see *Encyclopædia Britannica*). After his resignation as prime minister in 1923, Hughes continued to serve in a number of important government posts, including vice-president of the executive council (1934-35 and 1937-38), minister for health and repatriation (1934-35 and 1936-37), minister in charge of territories (1937-38), minister for external affairs (1937-39), minister for industry (1939-40), attorney general (1939-41) and minister for the navy (1940-41). For the last few years of his life he was senior statesman of the Commonwealth of Nations.

Hull, Clark Leonard, U.S. psychologist (b. Akron, N.Y., May 24, 1884—d. New Haven, Conn., May 10, 1952).

Hume, Edgar Erskine, U.S. army medical officer (b. Frankfort, Ky., Dec. 26, 1889—d. Washington, D.C., Jan. 24, 1952).

Humes, Augustine Leftwich, U.S. lawyer (b. Knoxville, Tenn., Nov. 16, 1874—d. New York, N.Y., Sept. 25, 1952).

Hummel, George F., U.S. author (b. Southold, L.I., N.Y., Sept. 3, 1882—d. New York, N.Y., Dec. 20, 1952).

Hunt, Edward Lawrence, U.S. Presbyterian minister (b. Dundas, Ont., Sept. 16, 1860—d. Queens, N.Y., Oct. 9, 1952).

Hunt, Myron, U.S. architect (b. Sunderland, Mass., Feb. 27, 1868—d. Pasadena, Calif., May 26, 1952).

Huntress, Carroll Benton, U.S. businessman (b. Ogdensburg, N.Y., Nov. 25, 1885—d. Mount Vernon, N.Y., Nov. 29, 1952).

Hussey, Mary Ida, U.S. educator and philologist (b. New Vienna, O., June 17, 1876—d. Andover, Mass., June 20, 1952), took her Ph.B. degree at Earlham college, Richmond, Ind., in 1896 and her Ph.D. at Bryn Mawr college, Pa., in 1906. She was an instructor at Wellesley college, Mass., from 1907 to 1909, and associate professor and professor at Mt. Holyoke college, South Hadley, Mass., from 1913 until her retirement in 1941. She was a noted authority on ancient languages and religions and conducted extensive field research in the near, middle and far east, serving as field secretary of the American Schools of Oriental Research from 1917 to 1933.

Hyde, Charles Cheney, U.S. lawyer and educator (b. Chicago, Ill., May 22, 1873—d. New York, N.Y., Feb. 13, 1952), was educated at Yale university and at Harvard, where he received his law degree in 1898. He practised law in Chicago from 1898 to 1923 and was a solicitor for the U.S. department of state from 1923 to 1925. He also taught law at Northwestern university in Chicago during the years 1907-25 and was professor of international law and diplomacy at Columbia university from 1925 to 1945. In May 1951 Pres. Harry S. Truman appointed him a member of the Permanent Court of Arbitration at The Hague, Neth. Hyde was the author of a standard work on international law (2 vol., 1922; 2nd rev. ed. 3 vol., 1945) and a biography of Charles Evans Hughes as U.S. secretary of state (1929).

Ickes, Harold Le Clair, U.S. former secretary of the interior (b. Frankstown township, Blair county, Pa., March 15, 1874—d. Washington, D.C., Feb. 3, 1952). For Ickes' earlier career, see *Encyclopedia Britannica*. He was appointed secretary of the interior by Pres. Franklin D. Roosevelt in March 1933 and remained in this post through all the Roosevelt administrations and during the first ten months of the Harry S. Truman administration. He resigned from the cabinet on Feb. 13, 1946, after a dispute with President Truman over the latter's nomination of Edwin W. Pauley as undersecretary of the navy. Following his resignation he wrote a newspaper column on national affairs. His memoirs, *Autobiography of a Curmudgeon*, were published in 1943.

Ingram, Jonas Howard, U.S. naval officer (b. Jeffersonville, Ind., Oct. 15, 1886—d. San Diego, Calif., Sept. 10, 1952), graduated in 1907 from the U.S. Naval academy, where he starred in football, rowing and track and was later head football coach (1915-17) and director of athletics (1926-30). For his service during the U.S. attack on Veracruz, Mex., in 1914 Ingram was awarded the congressional medal of honour. In World War I he was flag lieutenant to Rear. Adm. Hugh Rodman. After various other naval duties he was named commander of the Atlantic cruiser division in 1941 and the following year was appointed commander of Allied naval forces in the South Atlantic. Also commander in chief of the U.S. Atlantic fleet during World War II, he supervised the convoy of hundreds of thousands of U.S. troops to the European theatre. Advanced to the rank of full admiral in 1944, Ingram retired from the navy in 1947.

Innis, Harold Adams, Canadian political economist (b. Otterville, Ont., Nov. 5, 1894—d. Toronto, Ont., Nov. 8, 1952).

Ipatieff, Vladimir Nikolaevich, Russian-born U.S. chemist (b. Moscow, Russia, Nov. 9, 1867—d. Chicago, Ill., Nov. 29, 1952).

Irvin, William Adolf, U.S. industrialist (b. Indiana, Pa., Dec. 7, 1873—d. New York, N.Y., Jan. 1, 1952), began work as a railroad telegraph operator in 1888. Employed as a clerk in a steel and tin plant in 1895, he rose rapidly in the steel industry and in 1932 became president of the U.S. Steel corporation, retiring in 1938. In 1942 he was elected chairman of the board of trustees of the National Safety council.

Jack, Richard, Canadian painter (b. Sunderland, Eng., Feb. 15, 1866—d. Montreal, Que., June 30, 1952), studied at the York (Eng.) School of Art and later at the Académie Julian in Paris, Fr. He was a member of the Royal Society of Portrait Painters and, at the time of his death, senior member of Britain's Royal academy. In 1916 he was commissioned by the Canadian government to paint battle scenes with the Canadian expeditionary forces; his "Vimy Ridge" and "Canadians at the Second Battle of Ypres" became widely known and were hung in the Canadian national archives at Ottawa. Jack also painted portraits of several Canadian governors general and other notables.

Jacobi, Frederick, U.S. composer (b. San Francisco, Calif., May 4, 1891—d. New York, N.Y., Oct. 24, 1952).

Jean, Philip Charles, U.S. authority on pediatrics (b. Hillsboro, O., Jan. 3, 1883—d. Panamá city, Pan., Oct. 22, 1952).

- Joannes, Francis Y.**, U.S. architect (b. Green Bay, Wis., Sept. 27, 1876—d. Branford, Conn., June 21, 1952).
- Joerg, Wolfgang Louis Gottfried**, U.S. geographer (b. Brooklyn, N.Y., Feb. 6, 1885—d. Washington, D.C., Jan. 7, 1952).
- John, Sir (William) Goscombe**, British sculptor (b. Cardiff, Wales, Feb. 21, 1860—d. London, Eng., Dec. 15, 1952).
- Johnson, Charles F. H.**, U.S. textile industrialist (b. New York, N.Y., Sept. 5, 1880—d. Passaic, N.J., May 9, 1952).
- Jolas, Eugene**, trilingual poet and journalist (b. Union City, N.J., Oct. 26, 1894—d. Paris, Fr., May 26, 1952), at the age of two returned with his European-born parents to the father's ancestral home in Forbach, Lorraine, where he received his early schooling at the local *gymnasium* and, later, at the Petit Séminaire, Metz. At 16 he emigrated alone to the U.S. and after a few years of bitter economic struggle entered the newspaper world. He returned to Europe in 1922 and, in 1927, founded in Paris the international *avant garde* review *Transition*. In addition to many critical articles, he was the author of seven volumes of poetry, written in French, German, English and an invented linguistic amalgam he called "Atlantica"; a French-language anthology of more than 100 American poets; an English-language mystical anthology entitled *Vertical*; and numerous translations. He served in World Wars I and II and, in 1946, was awarded the U.S. Medal of Freedom for his activities with the Allied armies during the liberation of Europe.
- Jooda Shum Shere Jung Bahadur Rana**, maharaja, former Nepalese prime minister (b. Katmandu, Nepal, April 24, 1875—d. Dehra Dun, Uttar Pradesh, India, Nov. 23, 1952).
- Kaas, Ludwig**, German-born Roman Catholic prelate, former head of Centrist party in Germany (b. Trier, Ger., May 23, 1881—d. Rome, It., April 25, 1952).
- Kaplan, Eliezer**, Israeli statesman (b. Minsk, Russia, Jan. 27, 1891—d. Genoa, It., July 13, 1952).
- Karfiol, Bernard**, U.S. artist (b. Budapest, Hung., May 6, 1886—d. Irvington-on-Hudson, N.Y., Aug. 16, 1952).
- Kellor, Frances**, U.S. immigration authority and author (b. Columbus, O., Oct. 20, 1873—d. New York, N.Y., Jan. 4, 1952).
- Kelly, Alvin Anthony** ("SHIPWRECK"), U.S. stunt man (b. May 13, 1893—d. New York, N.Y., Oct. 11, 1952).
- Kelser, Raymond Alexander**, U.S. bacteriologist and immunologist (b. Washington, D.C., Dec. 2, 1892—d. Philadelphia, Pa., April 16, 1952).
- Kendall, Elizabeth Kemball**, U.S. historian, educator and traveller (b. Middlebury, Vt., 1895?—d. Village of Street, Somerset, Eng., May 15, 1952).
- Kennedy, Foster**, U.S. neurologist (b. Belfast, Ire., Feb. 7, 1884—d. New York, N.Y., Jan. 7, 1952).
- Kenny, Elizabeth** (SISTER KENNY), Australian nursing sister and research worker (b. Warialda, New South Wales, Austr., Sept. 20, 1886—d. Too-womba, Queensland, Austr., Nov. 30, 1952), qualified as a nurse in 1911 and served in the Australian army nursing service during World War I. She soon became known for her physical methods of treatment of poliomyelitis which, she claimed, could cure the paralysis if applied early enough. Her claims were strenuously opposed by the medical profession although the value of her treatment was admitted. She opened a clinic in Sydney in 1935 and a year's trial of her methods was made in Great Britain in 1937. In 1940 she went to the United States where the Elizabeth Kenny foundation was later established at Minneapolis, Minn. Other clinics adopting the Kenny method were opened in New York city, Buffalo, N.Y., Jersey City, N.J., Pontiac, Mich., and El Monte, Calif. She returned to Australia in Dec. 1950. Her published works include *Infantile Paralysis and Cerebral Diplegia* (1937), *The Kenny Concept of Infantile Paralysis and Its Treatment* (with J. F. M. Pohl, 1943) and an autobiography, *And They Shall Walk* (with Martha Ostenson, 1943).
- Kent, Roland Grubb**, U.S. philologist (b. Wilmington, Del., Feb. 24, 1877—d. Bryn Mawr, Pa., June 27, 1952).
- Kenyon, Sir Frederic George**, British biblical and classical scholar and museum director (b. London, Eng., Jan. 15, 1863—d. Godstone, Surrey, Eng., Aug. 23, 1952), was educated at Winchester and at New College, Oxford university, of which he became an honorary fellow in 1913. In 1888 he became a fellow of Magdalen college (honorary fellow, 1906) and a year later he entered the manuscript department of the British Museum where he became known as an authority on Greek papyri by his discovery and publication, as *Aristotle's Constitution of Athens* (1891), of a lost treatise by Aristotle. He was assistant keeper in the manuscript department, 1898–1909, and director and principal librarian of the museum, 1909–30. He was also a distinguished Biblical scholar, and his works in this field include *Our Bible and the Ancient Manuscripts* (1895, rev. 1939) and *The Bible and Modern Scholarship* (1948), a reply to Bishop E. W. Barnes's *The Rise of Christianity*. Kenyon was president of the British academy, 1917–21, of the Bibliographical society, 1924–26, of the Society of Antiquaries, 1934–39, and of the British School of Archaeology at Jerusalem from 1920 until his death. His other published works include *Catalogue of Greek Papyri in the British Museum*, 3 vol. (1893–1907), *Ancient Books and Modern Discoveries* (1928) and *The Chester Beatty Biblical Papyri*, 8 parts (1933–41).
- Kerner, Otto**, U.S. jurist (b. Chicago, Ill., Feb. 22, 1884—d. Chicago, Dec. 13, 1952).
- Keys, Clement Melville**, Canadian-born business executive (b. Chatsworth Ont., April 7, 1876—d. New York, N.Y., Jan. 12, 1952).
- Kimball, Dexter Simpson**, U.S. educator and engineer (b. New River, N.B., Oct. 21, 1865—d. Ithaca, N.Y., Nov. 1, 1952).
- King, Mrs. Carol**, U.S. attorney (b. New York, N.Y., Aug. 24, 1895—d. New York, Jan. 21, 1952).
- Kirby, Rollin**, U.S. cartoonist (b. Galva, Ill., Sept. 4, 1875—d. New York, N.Y., May 8, 1952), went to New York city as a youth to study painting. After further studies in Paris he turned to magazine illustration, working for *Collier's*, *American*, *Harper's* and others. In 1911 the *New York Evening Mail* hired him as a cartoonist; the next year he moved to the *Sun* and in 1913 to the *World* (later the *World-Telegram*), where he remained until 1939. From the latter year until 1942 he was with the *New York Post* and subsequently did cartoons for *Look* magazine and the *New York Times* Sunday magazine. A three-time Pulitzer prize winner (1921, 1924 and 1928), Kirby was a powerful cartoon critic of Tammany hall, the Ku Klux Klan, prohibition, high finance, communism and fascism. One of his best-known pen characters was "Mr. Dry," a tall bluenose symbolizing the 18th amendment.
- Kirsten, Frederick Kurt**, U.S. inventor and engineer (b. Saxony, Ger., March 13, 1885—d. Seattle, Wash., Nov. 19, 1952).
- Klapper, Paul**, U.S. educator (b. Jassy, Rum., July 17, 1885—d. Flushing, Queens, N.Y., March 25, 1952).
- Kollontai (KOLLONTAY), Alexandra Mikhailovna**, Russian diplomat and political leader (b. St. Petersburg [Leningrad], Russia, April 1, 1872—d. Moscow, U.S.S.R., March 9, 1952).
- Kramers, Hendrick Anthony**, Dutch atomic scientist (b. Rotterdam, Neth., Dec. 17, 1894—d. Leyden, Neth., April 24, 1952).
- Kucharzewski, Jan**, Polish politician and historian (b. Wysokie Mazowieckie, Pol., May 27, 1876—d. New York, N.Y., July 4, 1952), was educated at the University of Warsaw. In 1915 he went to Lausanne, Switz., where he published *L'Aigle Blanc*, a periodical campaigning for the restoration of independent Poland. On Nov. 26, 1917, he was appointed premier by the Polish regency council of the first Polish government since 1831; he resigned on Feb. 27, 1918, in protest against the peace treaties of Brest-Litovsk. After World War I he devoted himself to historical studies and published *From the White to the Red Tsardom*, 7 vol. (Warsaw, 1923–35) abridged trans., *The Origins of Modern Russia* (1948). In 1926 Kucharzewski was elected a member of the Polish Academy of Sciences. He left Poland at the beginning of 1940 for New York city where he became chairman of the board of the Polish Institute of Arts and Sciences in America.
- Kulas, Elroy John**, U.S. steel executive (b. Cleveland, O., March 21, 1880—d. Gates Mills, O., May 13, 1952).
- Lamb, Arthur Becket**, U.S. chemist (b. Attleboro, Mass., Feb. 25, 1880—d. near Brookline, Mass., May 15, 1952), was educated at Tufts college, Medford, Mass., at Harvard, and at the Universities of Leipzig and Heidelberg, Ger.; he received his Ph.D. from Harvard in 1904. He began as an instructor in electrochemistry at Harvard in 1905, then taught at New York university (1906–12). Returning to Harvard in the latter year, he became full professor in 1920. He was also director of the Harvard chemistry laboratory from 1912 until his retirement in 1947, and was a recipient of the Priestley medal, highest award of the American Chemical society. From 1917 to 1949 he was editor of the *Journal of the American Chemical society*.
- Lamb, William Frederick**, U.S. architect (b. Brooklyn, N.Y., Nov. 21, 1883—d. New York, N.Y., Sept. 8, 1952).
- Lambert, Adrian Van Sinderen**, U.S. surgeon (b. New York, N.Y., June 30, 1872—d. New York, Oct. 15, 1952).
- Lamont, Florence Corliss** (MRS. THOMAS W. LAMONT), U.S. civic worker (b. Englewood, N.J.—d. New York, N.Y., Dec. 29, 1952).
- Landau, Jacob**, Austrian-born journalist (b. Vienna, Aus., 1892?—d. New York, N.Y., Jan. 31, 1952).
- Lapierre, Louis A.**, Canadian-born Roman Catholic prelate, last free Roman Catholic apostolic vicar in Communist China (b. St. Hermas, Que., 1880?—d. Manchuria, Dec. 27, 1952).
- Lasker, Albert Davis**, U.S. advertising executive and philanthropist (b. Freiburg, Ger., May 1, 1880—d. New York, N.Y., May 30, 1952), was born of U.S. parents who were travelling in Germany. In 1898, two years after his graduation from high school at Galveston, Tex., he joined the advertising firm of Lord & Thomas, becoming sole owner in 1908. A pioneer in modern advertising methods, he placed as much as \$50,000,000 worth of advertising a year before disbanding his company in 1942. In 1917 he was named assistant secretary of agriculture by Pres. Woodrow Wilson, and from 1918 to 1920 was assistant chairman of the Republican national committee. He was also chairman of the U.S. shipping board under Pres. Warren G. Harding from 1921 to 1923. Upon his retirement from business in 1942 he founded the Albert and Mary Lasker foundation for medical research. Among other philanthropies, he gave The University of Chicago \$1,250,000 for research in geriatrics, plus an estate in suburban Chicago valued at \$3,000,000.
- Lattre de Tassigny, Jean-Joseph-Marie-Gabriel de**, French army officer (b. Mouilleron-en-Pareds, Vendée, Fr., Feb. 2, 1889—d. Neuilly near Paris, Fr., Jan. 11, 1952), a graduate of Saint-Cyr, fought in World War I, and was wounded four times and decorated. In 1921 he served in Morocco and in 1925 was seriously wounded in the Rif campaign. Having passed out of the *École Supérieure de Guerre* in 1935, he was by 1939 the youngest general in

the French army. He commanded the 14th infantry division which fought around Rethel in May 1940. On Aug. 27, 1941, he was appointed commander-in-chief in Tunisia but in Jan. 1942 was recalled to France to command a division at Montpellier. When the Germans took over the free zone on Nov. 11, 1942, he attempted to resist. He was sentenced on Jan. 9, 1943, to ten years' imprisonment at Riom but nine months later escaped to England. He took over the French 1st army which landed at Saint Tropez on Aug. 15, 1944. Advancing up the Rhône valley, he crossed the Rhine, entered the upper Danube valley and brought his troops to the Tirol. On May 8, 1945, in Berlin he signed for France the final act of German capitulation; on July 24 he was appointed inspector general of the French army. He was appointed commander-in-chief of land forces of the Western European Union on Oct. 4, 1948. He became French high commissioner and commander-in-chief in Indochina on Dec. 6, 1950. General de Lattre was posthumously created marshal of France.

Lawrence, Gertrude (GERTRUD ALEXANDRA DAGMA LAWRENCE KLASSEN), British actress (b. London, Eng., July 4, 1898—d. New York, N.Y., Sept. 6, 1952), was educated at the Convent of the Sacred Heart, Streatham, London, and studied dancing under Madame Espinosa and acting under Italia Conti. She first appeared on the stage in Dec. 1910, at the Brixton theatre, London, as a child dancer in *Babes in the Wood*; after touring in the provinces for four and a half years she achieved her first stage success in the revue *Some* (1916). Her talent for singing, dancing and acting and her vivacious personality were admirably suited to this type of production and she was soon in great demand. She took the lead in *The Midnight Follies* (1922) and afterward went to the U.S. where she played joint lead with Beatrice Lillie in *André Charlot's Revue of 1924*. She was a close friend of Noel Coward who wrote *Private Lives* (1930) specially for her and with whom she toured the provinces in 1935 in *Tonight at 7:30* (renamed *Tonight at 8:30* when it ran in London and New York in 1936). Her best-known later performances were Susan Trexel in *Susan and God* (New York, 1937), Lydia Kenyon in *Skylark* (New York, 1939) and, in London, Stella Martyn in *Daphne du Maurier's September Tide* (1948). During World War II she had toured with the Entertainments National Service association (of which she was president of the U.S. branch) in France and Belgium and with the United Services organizations (U.S.O.) in the Pacific ocean area. At the time of her death she was playing Anna in *The King and I* in New York.

Lawson, Andrew Cowper, U.S. geologist (b. Anstruther, Scot., July 25, 1861—d. San Leandro, Calif., June 16, 1952).

Lee, Canada (LIONEL CORNELIUS CANEGATA), U.S. Negro actor (b. New York, N.Y., May 3, 1907—d. New York, May 9, 1952), studied the violin as a child, became a jockey at 14 and a boxer at 19. Turning professional, he was a leading contender for the world welterweight boxing championship in the late 1920s when his eyes failed. He then organized a dance band and became interested in the theatre. His first role was in a federal theatre production; he rose to national stardom as Bigger Thomas in Richard Wright's *Native Son* (1941), directed by Orson Welles. His Banquo in Welles's all-Negro interpretation of *Macbeth* and his Othello both won wide acclaim. Lee was also a frequent performer in motion pictures, radio and television and played the lead role in the film *Cry, the Beloved Country*, which had its first showing in New York city a few months before his death.

Lee, Frank Hood, U.S. politician, lawyer and newspaperman (b. Johnson county, Kan., March 29, 1873—d. Joplin, Mo., Nov. 20, 1952).

Lefranc, Abel, French scholar and historian (b. Elincourt-St. Marguerite, Fr., July 27, 1863—d. Paris, Fr., Nov. 26, 1952).

Levinthal, Bernard Louis, U.S. rabbi (b. Vilna, Russia, May 12, 1865—d. Atlantic City, N.J., Sept. 23, 1952), emigrated to the United States in 1891. At the time of his death he was head of the Orthodox rabbinate of Philadelphia. He was a founder of the Orthodox Rabbinical Association of America and was active in many U.S. Jewish associations.

Levy, Louis, French editor and Socialist leader (d. London, Eng., Feb. 16, 1952).

Lewis, David John, U.S. legislator (b. near Osceola Mills, Pa., May 1, 1869—d. Cumberland, Md., Aug. 12, 1952), began work at the age of nine in the coal mines of Allegany county, Md. He studied law in the office of an attorney at Cumberland, being admitted to the Maryland bar in 1892. He set up practice in Cumberland and was a Maryland state senator from 1902 to 1906. In 1910 he was elected to the U.S. house of representatives as a Democrat from the 6th Maryland district, serving in the 62nd, 63rd and 64th congresses (1911-17). From 1917 to 1925 he was a member of the U.S. Tariff commission, and later he resumed private practice of law. Elected again to the house of representatives, he served in the 72nd-75th congresses (1931-39) and thereafter was a member of the National Mediation board until 1943, when he retired from public life. Lewis first became a national political figure when he drafted the legislation that established the U.S. parcel post system. His legislative work with unemployment insurance became one of the bases for the U.S. social security system.

Lewis, Howard Corwin, U.S. book publisher (b. New York, N.Y., Oct. 9, 1890—d. New York, Oct. 2, 1952).

Lillie, Ralph Stayner, Canadian-U.S. biologist (b. Toronto, Ont., Aug. 8, 1875—d. Chicago, Ill., March 19, 1952), received his bachelor's degree from the University of Toronto in 1896 and his Ph.D. from The University of Chicago in 1901. He taught physiology at Harvard university, the University of Nebraska, The Johns Hopkins university, the University of Pennsylvania and Clark university (Worcester, Mass.) before joining the faculty of The University of Chicago in 1924 as professor of general physiology. He retired in 1940. His research in the basic nature of living matter became known internationally.

Lindsay, Alexander Dunlop, British educator (b. Glasgow, Scot., May 14, 1879—d. Keele Hall, Stoke-on-Trent, Staffordshire, Eng., March 18, 1952).

Link, Henry Charles, U.S. psychologist (b. Buffalo, N.Y., Aug. 27, 1889—d. Port Chester, N.Y., Jan. 9, 1952).

Linlithgow, Victor Alexander John Hope, 2ND MARQUESS, former viceroy of India (b. Abercorn, West Lothian, Scot., Sept. 24, 1887—d. Hopetoun, West Lothian, Scot., Jan. 5, 1952).

Lin Piao, Chinese Communist leader and army officer (b. Hupeh province, China, 1908?—d. Moscow, U.S.S.R., Oct. 17, 1952), was reported to be the fifth-ranking member of the Chinese Communist regime at the time of his death. He was credited with a major military role in the Communists' victory over the Chinese nationalists in 1949 and was commanding general of the Chinese Communist land forces that intervened in the Korean war in 1950.

Lipman, Clara (MRS. LOUIS MANN), U.S. actress and dramatic playwright (b. Chicago, Ill., Dec. 6, 1869—d. New York, N.Y., June 22, 1952).

Lockridge, Ross Franklin, U.S. author (b. Miami county, Ind., Oct. 26, 1877—d. Bloomington, Ind., Jan. 12, 1952).

Long, Mrs. Margaret Gabrielle Campbell Vere (pseudonyms, MARJORIE BOWEN, GEORGE R. PREEDY, JOSEPH SHEARING), British novelist (b. Hayling, Hampshire, Eng., 1888—d. London, Eng., Dec. 23, 1952).

Long, Percy Waldron, U.S. educator and author (b. Boston, Mass., Sept. 21, 1876—d. Washington, D.C., Oct. 2, 1952).

Long, William Joseph, U.S. author, naturalist and Congregationalist clergyman (b. North Attleboro, Mass., April 3, 1866—d. Stamford, Conn., Nov. 9, 1952).

Lot, Ferdinand, French historian (b. Paris, Fr., Sept. 20, 1866—d. near Paris, July 20, 1952).

Lyot, Bernard, French astronomer (b. Paris, Fr., Feb. 27, 1897—d. Cairo, Egy., April 1, 1952).

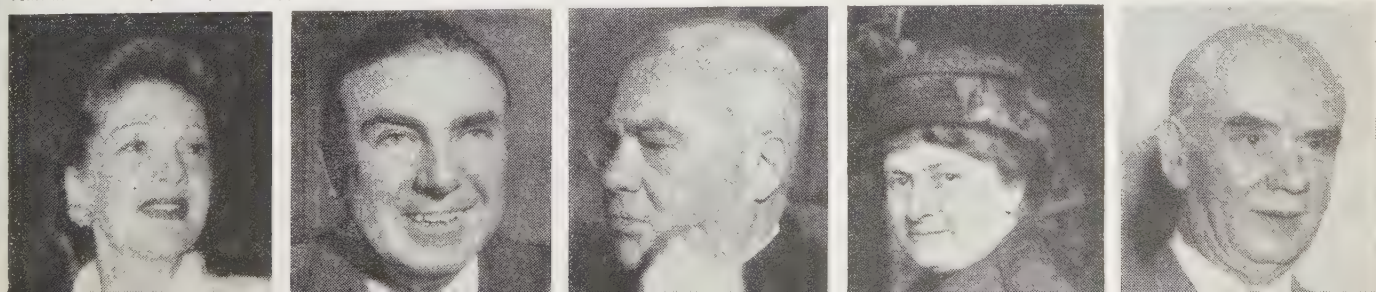
Macauley, Alvan, U.S. business executive (b. Wheeling, W.Va., Jan. 17, 1872—d. Clearwater, Fla., Jan. 16, 1952).

MacCarthy, Sir Desmond, British author and literary critic (b. Plymouth, Eng., 1877—d. Cambridge, Eng., June 7, 1952), was educated at Eton and at Trinity college, Cambridge. In early life he practised freelance journalism, contributing to the *Speaker* and the *Eye Witness* (later the *New Witness*). From 1913 to 1944 he was dramatic critic of the *New Statesman* and from 1920 to 1927 its literary editor. In addition from 1920 to 1929 he wrote a causerie for that weekly under the pseudonym "Affable Hawk." From 1928 until his death he was literary critic of the *Sunday Times* and he also broadcast for the British Broadcasting company. His principal books include *The Court Theatre* (1904-07), *Portraits* (1931), *Leslie Stephen* (1937) and two volumes of essays, *Drama* (1940) and *Shaw* (1950). MacCarthy had a wide and carefully cultivated knowledge of literature, although his criticism was most revealing when its approach was biographical (as in his appreciation of Henry James) rather than purely literary. He was knighted in 1951.

McCarthy, Leighton Goldie, Canadian diplomat, business executive and attorney (b. Walkerton, Ont., Dec. 15, 1869—d. Penetanguishene, Ont., Oct. 4, 1952), was the first Canadian ambassador to the United States. Educated at the public schools of Barrie, Ont., he studied law and entered politics as a Liberal, serving in the Canadian house of commons from 1898 to 1908. He then turned to practice of law in Toronto and became an executive of several large Canadian corporations, including the Canada Life Assurance company and the National Trust Company, Ltd. In 1941 McCarthy was named minister to Washington, D.C., and in 1943 the first ambassador to the United States after the legation had been raised to the status of embassy. He resigned Dec. 31, 1944.

McCrea, Charles, Canadian politician (b. Springtown, Ont., Dec. 27, 1877—d. Toronto, Ont., Oct. 30, 1952).

1952 OBITUARIES: Gertrude Lawrence, British actress; Brien McMahon, U.S. senator; Ferenc Molnar, Hungarian-U.S. dramatist; Maria Montessori, Italian educator; Philip Murray, U.S. labour leader



McCullagh, Clement George, Canadian newspaper publisher (b. London, Ont., March 16, 1905—d. Toronto, Ont., Aug. 5, 1952).

McDaniel, Hattie, U.S. Negro actress (b. Wichita, Kan., 1895?—d. near Los Angeles, Calif., Oct. 26, 1952), first appeared on the stage at the age of 16 in a touring tent show written and produced by her older brother. Later she was featured as a dance band singer and in vaudeville. She entered motion pictures in the early 1930s and almost immediately rose to stardom, appearing in about 300 pictures—notably as the "mammy" in *Gone With the Wind*. For this role she received the 1939 Academy award as the best supporting actress of the year—the first of her race to be so honoured. Other notable film performances by Miss McDaniel were in *Judge Priest*, *Genlle Julia*, *Saratoga*, *Nothing Sacred*, *The Male Animal*, *The Little Colonel* (with Shirley Temple) and *The Great Lie* (with Bette Davis). She became even more famous, however, for her role as Beulah on radio and television, playing this part until illness forced her to retire in 1951.

McInerney, Thomas H(enry), U.S. business executive (b. Dubuque, Ia., May 8, 1867—d. Greenwich, Conn., Sept. 30, 1952).

Mackay, Ian, British columnist and author (b. Wick, Scot., April 23, 1898—d. Morecambe, Eng., Oct. 3, 1952).

Madagan, Sir Edward Douglas, British statesman (b. Punjab, India, Aug. 25, 1864—d. London, Eng., Oct. 22, 1952).

McMahon, Brien, U.S. senator (b. Norwalk, Conn., Oct. 6, 1903—d. Washington, D.C., July 28, 1952), received his bachelor's degree from Fordham university, New York city, in 1924 and his LL.B. degree from Yale in 1927. Admitted to the Connecticut bar in the latter year, he practised law in Norwalk and in 1933 became judge of the Norwalk city court. Later that year he was appointed special assistant to the U.S. attorney general, and in 1936–39 he was assistant attorney general in charge of the department of justice criminal division. From 1939 to 1944 he again practised law; in the latter year he was elected U.S. senator from Connecticut on the Democratic ticket. In 1950 he was re-elected for the term 1951–57. During his freshman year in the senate McMahon introduced the first act for the control of atomic energy, and in Oct. 1945 he was named chairman of the special congressional committee on atomic energy. Generally a loyal supporter of the Harry S. Truman administration, McMahon thereafter spent much of his time in the senate on the work of his committee. On Feb. 2, 1950, he proposed a five-year, \$50,000,000,000 plan whereby the U.S. would extend economic aid to other countries, including the U.S.S.R., in exchange for total atomic disarmament. He repeatedly warned that the only alternative to control of atomic weapons was the destruction of civilization. McMahon was a candidate for the Democratic presidential nomination in 1952 but withdrew because of illness. He died two days after the close of the Democratic convention in Chicago, Ill.

McMillin, Alvin Nugent ("Bo"), U.S. football coach (b. Prairie Hill, Tex., Jan. 12, 1899—d. Bloomington, Ind., March 31, 1952).

McNally, John Thomas, Canadian Roman Catholic prelate (b. Hope River, P.E.I., June 24, 1871—d. Halifax, N.S., Nov. 17, 1952), was educated at Prince of Wales college, Charlottetown, P.E.I., at Ottawa university, Ont., and at the Canadian college in Rome. Ordained priest at Rome in 1896, he was successively bishop of Calgary, Alta. (1913–24), bishop of Hamilton, Ont. (1924–37), and archbishop of Halifax, N.S., from 1937 until his death.

McNamee, Luke, U.S. naval officer and business executive (b. Mount Hope, Wis., April 4, 1871—d. Newport, R.I., Dec. 30, 1952).

Mansbridge, Albert, British educationist (b. Gloucester, Eng., Jan. 10, 1876—d. Torquay, Eng., Aug. 22, 1952).

Marus, John, British newspaperman and radio broadcaster (b. London, Eng., Oct. 24, 1903—d. London, Oct. 27, 1952).

Massingham, Harold John, British author (b. London, Eng., March 25, 1888—d. Long Crendon, Eng., Aug. 22, 1952).

Matthews, Francis Patrick, U.S. statesman (b. Albion, Neb., March 15, 1887—d. Omaha, Neb., Oct. 18, 1952), took his law degree from Creighton university, Omaha, Neb., in 1913, then set up practice of law; he also engaged in business. Active in Democratic party work, he was counsel for the Reconstruction Finance corporation in Nebraska and Wyoming. On May 13, 1949, Pres. Harry S. Truman nominated him secretary of the navy. Early in 1950 Matthews was under congressional criticism for the ouster of Adm. Louis E. Denfeld as chief of naval operations, which came at the climax of interservice disputes over unification of the U.S. armed forces.

Matthews was again in public notice when he declared in a speech on Aug. 25, 1950, at Boston, Mass., that the U.S. should be willing to "pay any price" for world peace, "even the price of instituting a war to compel co-operation for peace." The White House and the U.S. state department promptly repudiated this speech as any reflection of official policy.

A prominent lay Catholic, Matthews was appointed U.S. ambassador to Ireland in June 1951, serving until his death, which occurred while he was on a visit back to the United States.

Maurras, Charles Marie-Photius, French writer and political journalist (b. Martigues, Provence, Fr., April 20, 1868—d. Tours, Fr., Nov. 16, 1952), was educated at the Catholic college at Aix-en-Provence and in 1895 went to Paris where he contributed to *L'Événement*, *Revue bleue* and *La Revue encyclopédique*. A fervent royalist, he undertook strenuous campaigns in *Le Soleil*, *La Gazette de France* and *Le Figaro* against democratic ideas and also published proroyalist books, notably *L'Idée de la décentralisation* (1898), *Trois idées politiques* (1898) and *L'Enquête sur la monarchie* (1900). From 1908 he directed the daily *L'Action française* (previously a fortnightly) which formed his main political platform. Its fundamental agnosticism, rather than its royalist propaganda, provoked the disapproval of the hierarchy so that, on Dec. 29, 1926, the Congregation of the Holy Office placed it and

some other of his works on the *Index Librorum Prohibitorum*. This ban continued until 1939 when Maurras made formal submission to the church. Meanwhile he had written *Kiel et Tanger* (1910), *L'Eclat de Berre* (1915) and *Quand les français ne s'aimaient pas* (1916). Although imprisoned in 1937 for incitement to murder Léon Blum, then premier, Maurras was elected in 1938 to the Académie Française. After the fall of France in 1940 he continued to publish *L'Action française* at Vichy. Although avowedly anti-British he repeatedly declared that Germany was the principal enemy of France. In 1945 he was sentenced in Lyons to life imprisonment for "intelligence with the enemy" during the occupation; at the same time the government ordered that he and Philippe Pétain should be expelled from the Académie Française. During his imprisonment he contrived to publish verse and articles in *Aspects de la France*. In March 1952 he was released from prison on grounds of ill-health. His other published works include *Les Amants de Venise* (1902), *La Musique intérieure* (1925), *De Dédos à César* (1935), *Apoloogie de Socrate* (1948) and *Conseils à un jeune Français* (1949). (See also *Encyclopædia Britannica*.)

Maximilian Eugene Louis, ARCHDUKE OF HABSBURG, Austrian prince (b. Vienna, Aus., April 13, 1895—d. Nice, Fr., Jan. 17, 1952).

Mays, Livingston T., U.S. Baptist leader, diplomat, educator and author (b. Round Rock, Tex.—d. Nashville, Tenn., Dec. 22, 1952).

Meissner, Alfred, Czech jurist and statesman (b. 1871—d. Vienna, Aus., May 23, 1952).

Merensky, Hans, South African geologist, discoverer of South African diamond and platinum fields (b. South Africa, 1871—d. Diuwelskloof, Transvaal, U. of S. Af., Oct. 21, 1952).

Metcalf, Tristram Walker, U.S. educator (b. Brooklyn, N.Y., Aug. 13, 1880—d. New York, N.Y., Feb. 24, 1952).

Meyerstein, Edward Harry William, British poet, novelist and biographer (b. Hampstead, Eng., Aug. 11, 1889—d. London, Eng., Sept. 12, 1952).

Migeod, Frederick William Hugh, British archaeologist and anthropologist (b. Chislehurst, Kent, Eng., Aug. 9, 1872—d. Worthing, Sussex, Eng., July 8, 1952).

Miller, Heymen Rudolph, U.S. bacteriologist, heart specialist and author (b. Russia, May 24, 1888—d. Poundridge, N.Y., Aug. 23, 1952).

Miller, Kenneth Hayes, U.S. artist (b. Oneida, N.Y., March 11, 1876—d. New York, N.Y., Jan. 1, 1952), studied in Europe and at the New York School of Art, where he later served as instructor in painting and drawing (1899–1911). From 1911 to 1936, and again in 1943, he taught at the Art Students League of New York. His work, represented in major U.S. museums, included etchings, drawings and paintings in oil and tempera. "Reverie," in oil, was awarded the Ada S. Garrett prize at the Art Institute of Chicago annual exhibit in 1945. Miller received the National Academy of Design's gold medal for painting in 1943 and was elected to the National Institute of Arts and Letters in 1947.

Miller, Leo Edward, U.S. explorer and author (b. Huntingburg, Ind., May 11, 1887—d. New Haven, Conn., Oct. 6, 1952).

Miller, Paul Gerard, U.S. educator (b. Pickett, Wis., Jan. 23, 1875—d. Oshkosh, Wis., May 21, 1952).

Minor, Robert, U.S. Communist leader (b. San Antonio, Tex., July 15, 1884—d. Ossining, N.Y., Nov. 26, 1952).

Molinari, Bernardino, Italian composer, musician and conductor (b. Rome, It., 1880—d. Rome, Dec. 25, 1952).

Molnar, Ferenc, Hungarian-U.S. dramatist (b. Budapest, Hung., Jan. 12, 1878—d. New York, N.Y., April 1, 1952), was the son of a Hungarian physician named Neumann. He attended the University of Budapest and later studied law at the University of Geneva, Switz. After a brief career in journalism he wrote his first play, *Der Doktor* (1902), which was produced at the royal theatre in Budapest and was well-received by critics. *Der Teufel (The Devil)* followed in 1908, and was produced in New York city by four companies at the same time. *Liliom*, perhaps the best-known of his 40-odd plays, was a failure when it opened at Budapest in 1909, but was an outstanding success when first produced in New York city by the Theatre Guild 12 years later. Subsequently it was revived a number of times and was made into a motion picture, *Carousel*, in 1945. *The Guardsman* opened in New York city in 1924 and was an immediate hit; it was notable also as being the first play in which Alfred Lunt and Lynn Fontanne appeared together. *The Play's the Thing* (1927) is also considered among Molnar's best work. Others included *Husbands and Lovers* (1924), *Prisoners* (1925), *Paul Street Boys* (1927), *The Swan* (1929), *The Good Fairy* (1932) and *No Greater Glory* (1934).

Molnar was a war correspondent with the Austro-Hungarian armies on the Russian front during World War I. He was the second Jewish recipient of the Order of Corvin, highest Hungarian literary distinction. In 1940, following Hungary's alignment with Nazi Germany, Molnar fled to the United States. He later became a U.S. citizen.

Momigliano, Attilio, Italian literary scholar and critic (b. Ceva, Piedmont, It., March 7, 1883—d. Florence, It., April 5, 1952).

Montagu, Ernest William Sanders, British politician, pioneer in the development of Southern Rhodesia (b. 1862—d. Salisbury, Southern Rhodesia, Nov. 20, 1952).

Montessori, Maria, Italian educator (b. Chiaravalle, Ancona, It., Aug. 31, 1870—d. Noordwijk, Neth., May 6, 1952), entered the University of Rome in Italy as a medical student and was the first Italian woman to gain a doc-

tor of medicine degree. Her lectures on mentally deficient children led to the foundation of the Scuola Ortofrenica, of which she was director from 1898 to 1900. She lectured on pedagogical anthropology from 1900 to 1907, when she founded her first nursery school, in the Rome slum district of San Lorenzo. In her *Casa dei Bambini* children were encouraged to make their own choice of occupation, with toys or simple tasks. (See MONTESSORI SYSTEM in *Encyclopedia Britannica*.) Her schools became established throughout Europe and the United States, and in 1913 the first international course on her methods was held in Rome. From 1919 onward she held training courses in London every two years and in alternate years in other parts of the world. She was made a government inspector of schools in Italy in 1922 and opened a teachers' training college there in 1928 and another in London in 1929. Forced to close her schools in Italy in 1934 because of her pacism, Dr. Montessori opened an institute in Barcelona, escaping from there in a British cruiser in 1936. She held training courses at Karachi, Poona and in Ceylon in 1939, but was interned as an enemy alien in Madras in June 1940. She returned to Italy in 1947 to reorganize schools there. Her ideas on education were set forth in *The Montessori Method* (1912).

Moore, Arthur Harry, U.S. politician (b. Jersey City, N.J., July 3, 1879—d. near Somerville, N.J., Nov. 18, 1952), was educated at Cooper union, New York city. His first political post was as secretary to the mayor of Jersey City (1908-11), and he was later city collector (1911-13) and one of the city's first commissioners (1913-25) after it had adopted the commission form of government in 1913. During the latter period he became the political protégé of Frank Hague, most powerful figure in New Jersey politics, and was elected governor of the state for two terms (1926-28 and 1932-35). He was elected U.S. senator on the Democratic ticket in 1934 for the term 1935-41 but resigned in 1938 after having again been elected governor of New Jersey. He was the first man in the state's history to be elected for a third term, and served from 1938 to 1941.

Moran, Polly (PAULINE THERESA MORAN), U.S. motion-picture actress (b. Chicago, Ill., June 28, 1885—d. Los Angeles, Calif., Jan. 25, 1952).

Morera, Berta (BERTHA MEYER), German operatic soprano (b. Mannheim, Ger., 1878—d. Rottach, Ger., Oct. 7, 1952).

Moulton, Forest Ray, U.S. astronomer (b. Le Roy, Mich., April 29, 1872—d. Wilmette, Ill., Dec. 7, 1952), took his bachelor's degree from Albion (Mich.) college in 1894 and his Ph.D. *summa cum laude* from The University of Chicago in 1899. He taught astronomy at The University of Chicago from 1898 until 1926, and from 1937 to 1948 he was administrative secretary of the American Association for the Advancement of Science. Moulton wrote a number of works on celestial mechanics and other phases of astronomy, but was perhaps best known as coauthor of the Chamberlin-Moulton planetesimal hypothesis of the origin of the solar system. He was also a noted authority on ballistics.

Murchison, Sir Charles Kenneth, British politician and author (b. London, Eng., Sept. 22, 1872—d. Mudeford, Hampshire, Eng., Dec. 17, 1952).

Murdoch, Sir Keith Arthur, Australian publisher (b. Melbourne, Austr., Aug. 12, 1886—d. Frankston, Austr., Oct. 5, 1952), was educated in Australian schools and at the London School of Economics. During World War I he was a war correspondent with the Australian forces at Gallipoli and on the French, Belgian and Italian fronts. Following the war he was London editor for a group of Australian papers. He later became chairman of the directors of The Herald and Weekly Times, Ltd., controlling the *Melbourne Sun News-Pictorial* (morning) and the *Melbourne Herald* (evening), and was also director of other newspapers and associated companies. Sir Keith, who was knighted in 1933, was an exponent of close U.S.-Australian relationship. He was director-general of information for the Commonwealth of Australia in 1939-40 and president of the trustees of the National Gallery of Victoria.

Murray, Philip, U.S. labour leader (b. Blantyre, Scot., May 25, 1886—d. San Francisco, Calif., Nov. 9, 1952), in 1902 moved with his family to the United States, where he was naturalized in 1911. The following year he became a member of the international executive board of the United Mine Workers of America, and he was the union's international vice-president from 1920 to 1942. In the latter year he was elected president of the United Steelworkers of America. In 1940 he succeeded John L. Lewis as president of the Congress of Industrial Organizations (C.I.O.) after Lewis had vowed he would resign if Pres. Franklin D. Roosevelt won election for a third term. Murray helped launch several rounds of wage increases after World War II, and in 1947 purposely violated the Taft-Hartley act to institute a test case, but was not prosecuted on technical grounds. During the 1948 presidential campaign Murray first attacked Pres. Harry S. Truman's labour policies but later backed Truman. In 1951 he predicted an eventual merger of the C.I.O. and the American Federation of Labor, but not until A.F. of L. leaders had changed their "ancient and prehistoric" points of view.

Immediately after the U.S. supreme court ruled on June 2, 1952, that President Truman's seizure of the steel industry was unconstitutional, Murray issued strike orders to the 650,000 members of the steelworkers' union. During the strike, which lasted until July 25, Murray charged that the large steel companies were conspiring to force the smaller companies not to agree to a strike settlement.

On Nov. 9, as Murray was preparing to open the annual C.I.O. convention Nov. 17, he died after a heart attack in San Francisco, Calif.

Lasalli-Rocca di Corneliano, Giovanni-Battista Cardinal, Italian Roman Catholic prelate (b. Piacenza, It., Aug. 27, 1872—d. Bologna, It., March 13, 1952), was ordained in 1895. He became a canon of Santa Maria Maggiore, Rome, in 1899, was bishop of Gubbio from 1907 to 1916 and titular archbishop of Thebes and private chaplain to Pope Benedict XV from 1916. In 1920 he was appointed assistant ecclesiastical general of Catholic Action. He became archbishop of Bologna in 1921 and was elevated to the Sacred College of Cardinals in 1923.

Jeff, Pat Morris, U.S. politician and educator (b. McGregor, Tex., Nov. 26, 1871—d. Waco, Tex., Jan. 20, 1952).

Neumann, Alfred, German-U.S. author (b. Lautenberg, Ger., Oct. 15, 1895—d. Lugano, Switz., Oct. 3, 1952), the son of a Jewish timber merchant, was educated at Munich, Ger. He published his first work, a volume of verse, in 1917, after which he taught drama in Munich. Following several years of dire poverty he wrote a play, *The Patriot* (Eng. trans. 1928), *King Haber*, and *Other Stories* (Eng. trans. 1930) and a long novel, *The Devil* (Eng. trans. 1928), which brought him international fame. *The Devil*, which was later translated into 12 languages and sold several hundred thousand copies, was awarded the Kleist prize for 1926. With the initial anti-Semitic laws of Adolf Hitler, Neumann moved to Italy and later to France; in 1942 he went to the United States and became a U.S. citizen. Other works by Neumann, with the date of publication in English, include *The Rebels* (1929), *The Hero* (1931), *Another Caesar* (1935), *Gaudy Empire* (1937) and *Six of Them* (1945). *The Patriot* was produced in more than 500 theatres in Europe and America; another Neumann play, based on Leo Tolstoy's *War and Peace* and so named, appeared in New York city in 1942.

Nicholson, Leonard Kimball, U.S. newspaper publisher (b. New Orleans, La., Jan. 11, 1881—d. New Orleans, Oct. 19, 1952).

Niles, David K., U.S. presidential adviser (b. Boston, Mass., 1890?—d. Boston, Sept. 28, 1952), the son of Russian immigrants, went to work in a department store after finishing his high school education. During World War I he worked in the U.S. department of labour at Washington, D.C., and in 1921 became associate director of the Ford Hall forum in Boston. There he became associated with Robert M. La Follette, Sr., and was chairman of the latter's speakers' bureau during his campaign for the presidency on the Progressive party ticket in 1924. A specialist in U.S. political and racial minorities, Niles took an active part in the Sacco-Vanzetti case of the 1920s and in 1928 headed an independent voters' group for Alfred E. Smith. In 1935 he became an assistant to Harry L. Hopkins in the Works Progress administration and subsequently became a confidential adviser to Pres. Franklin D. Roosevelt. He served in a like capacity for Pres. Harry S. Truman until his retirement in May 1951. Niles was considered to be one of the most influential figures in both the New Deal and Fair Deal administrations and was believed to have played a major role in the U.S. backing of independence for Israel.

Norris, James, Sr., U.S. businessman and sports promoter (b. Montreal, Que., Dec. 10, 1878—d. Chicago, Ill., Dec. 4, 1952).

Nyggaardsvold, Johan, Norwegian government official (b. Hommelvik, Nor., Sept. 6, 1879—d. Trondheim, Nor., March 13, 1952), after working for six years on railway construction in the U.S., returned to Norway in 1907 and engaged in politics. Elected to the *storting* as a labour member in 1916, he was speaker in 1928 and again in 1934-35. In 1928 he was appointed minister of agriculture in the first Labour cabinet, which lasted 18 days. On March 16, 1935, he formed the second Labour cabinet. In June 1940 after the German invasion, he sailed for Great Britain and headed the Norwegian government-in-exile in London. During World War II he maintained his reputation for courage and conscientiousness. After the liberation he relinquished his premiership on June 25, 1945, and retired.

Okada, Keisuke, Japanese statesman and naval officer (b. Fukui prefecture, Japan, Jan. 1868—d. Tokyo, Japan, Oct. 17, 1952).

Orlando, Vittorio Emanuele, Italian lawyer and statesman (b. Palermo, Sic., May 19, 1860—d. Rome, It., Dec. 1, 1952), was prime minister of Italy, 1917-19, and led the Italian delegation to the Paris peace conference in 1919. He resigned from parliament and retired from public life in Aug. 1925 after the fascist victory in the Palermo municipal elections. (For his early career see *Encyclopedia Britannica*.) After the liberation of Rome in World War II Orlando resumed public life and was president of the chamber of deputies, 1944-46. He resigned from the constituent assembly in 1947 in protest against the signing of the Italian peace treaty and three years later, in the senate, he fiercely attacked Italian foreign policy, which was abhorrent to his fervent nationalist sentiments.

Orton, William Aylott, British-born U.S. economist and author (b. Bromley, Eng., Feb. 9, 1889—d. Damariscotta, Me., Aug. 13, 1952).

Oskison, Mrs. Hildegard Hawthorne, U.S. author (b. New York, N.Y., 1871?—d. Danbury, Conn., Dec. 10, 1952).

Oursler, (Charles) Fulton, U.S. author and editor (b. Baltimore, Md., Jan. 22, 1893—d. New York, N.Y., May 24, 1952), attended public schools in Baltimore and joined the *Baltimore American* in 1910 as a reporter. From 1912 to 1918 he was drama and music critic for that paper. After two years as managing editor of a New York music publication, he became editor-in-chief of the *Metropolitan* magazine in 1923. He was also editor of *Liberty* magazine from 1931 to 1942, and senior editor of the *Reader's Digest* from 1944 until his death. As early as 1923 Oursler had begun to write fiction and plays. His mystery stories had a wide popularity, but none to compare with his best-selling book, *The Greatest Story Ever Told*, a popular life of Christ published in 1949 and syndicated in a number of U.S. newspapers. Oursler, a convert to Roman Catholicism, also wrote several other books on religious subjects, including *Why I Know There is a God* (1950), under the pseudonym Anthony Abbot.

Page, Leigh, U.S. physicist and author (b. South Orange, N.J., Oct. 13, 1884—d. New Haven, Conn., Sept. 14, 1952).

Palavicini, Felix Fulgencio, Mexican historian and diplomat (b. Teapa, Tabasco, Mex., March 31, 1881—d. Mexico City, Mex., Feb. 10, 1952).

Palin, Septer Faith ("SEP"), U.S. harness racing driver (b. Rushville, Ind., April 11, 1876—d. Lexington, Ky., Sept. 29, 1952).

Palmer, Joe H., U.S. newspaperman, educator and author (b. Lexington, Ky., Oct. 18, 1904—d. Malverne, N.Y., Oct. 31, 1952).

Paltsits, Victor Hugo, U.S. librarian and historian (b. New York, N.Y., July 12, 1867—d. Jamaica, L.I., N.Y., Oct. 3, 1952).

Patterson, Paul Chenery, U.S. newspaper publisher (b. Jacksonville, Ill., Nov. 18, 1878—d. Baltimore, Md., April 21, 1952), studied at The University of Chicago before joining the *Chicago Tribune* as a reporter in 1899. He was city editor of three other Chicago newspapers before moving in 1906 to Washington, D.C., where he later became general manager of the *Washington Times*. In 1911 Patterson was appointed managing editor of the *Baltimore Evening Sun*, advancing after World War I to the presidency of the Sun-papers and the presidency of the parent publishing organization, A. S. Abell company.

Patterson, Robert Porter, former U.S. secretary of war (b. Glens Falls, N.Y., Feb. 12, 1891—d. Elizabeth, N.J., Jan. 22, 1952), received his bachelor's degree from Union college, Schenectady, N.Y., in 1912 and his law degree from Harvard university in 1915. Admitted to the bar in the latter year, he joined the New York city law firm of Elihu Root. He saw service on the Mexican border in 1916 and during World War I was an officer with the 306th infantry division in France, winning the silver star and the distinguished service cross for heroism in combat. He again practised law from 1919 to 1930, when Pres. Herbert Hoover appointed him judge of the U.S. district court for the southern New York district. In 1939 he was appointed judge of the U.S. circuit court of appeals by Pres. Franklin D. Roosevelt. In July of the following year he was named assistant secretary of war under Henry L. Stimson, and in Dec. 1940 undersecretary of war. In this post Patterson directed the army's supply procurement program.

Upon Stimson's retirement in 1945, Pres. Harry S. Truman named Patterson secretary of war. In the cabinet and elsewhere Patterson worked energetically to unify the U.S. armed forces and to secure adoption of universal military training. President Truman awarded him the distinguished service medal and cited him as one "whose contributions to victory (in World War II) cannot be overestimated." After his retirement July 24, 1947, Patterson again returned to private law practice in New York city. He was killed in the crash of an airliner attempting to land at Newark (N.J.) airport.

Pearson, John Magnus, U.S. physicist and author (b. Portland, Ore., July 9, 1904—d. Swarthmore, Pa., Nov. 16, 1952).

Peers, Edgar Allison, British Hispanic scholar (b. Leighton Buzzard, Bedfordshire, Eng., May 7, 1891—d. Liverpool, Eng., Dec. 21, 1952), was educated at Dartford Grammar school and at Christ's college, Cambridge. After working as modern languages master at Mill Hill and Felsted schools and Wellington college, he was appointed to the Gilmour chair of Spanish in the University of Liverpool in 1920. Attracted to the romantic aspects of English and French literature, he soon came under the spell of Spanish mysticism. He published his first Spanish study in 1923 (*Rivas and Romanticism in Spain*) and a stream of scholarly works quickly followed, establishing his reputation as an authority on Spanish thought. He translated the work of such prominent Spanish thinkers as St. John of the Cross and St. Theresa of Avila. He published numerous books on Spanish politics (*The Spanish Tragedy, 1930-1936, 1936; The Spanish Dilemma, 1940*), some travel books on Spain and, was a contributor to the *Encyclopedia Britannica*. Under the pseudonym of Bruce Truscot, Peers wrote several books pleading for a recognition of the potentialities of the modern ("red-brick") universities.

Pekkala, Mauno, Finnish government official (b. Sysma, Fin., Jan. 27, 1890—d. Helsinki, Fin., June 30, 1952), son of a lumberjack, studied at the University of Helsinki and at 31 received a Ph.D. degree. He joined the forest administration board and in 1933 became its deputy director. He was politically active among the small farmers and from 1927 was the chairman of their union. From that year, too, he was a member of parliament. Four times a minister, he served as prime minister from March 24, 1946, to July 22, 1948. He was supported by the communist-controlled S.K.D.L. (Finnish People's Democratic league). On April 6, 1948, he signed in Moscow the Soviet-Finnish treaty of mutual aid. At the Feb. 15, 1950, presidential election, he was the S.K.D.L. candidate against J. K. Paasikivi, but was defeated.

Perlman, Nathan David, U.S. jurist (b. Prusice, Pol., Aug. 2, 1887—d. New York, N.Y., June 29, 1952).

Perón, María Eva Duarte de, Argentine political leader and wife of President Juan D. Perón (b. Los Toldos, Arg., May 7, 1919—d. Buenos Aires, Arg., July 26, 1952), attended high school for two years and then went to Buenos Aires, where she became a successful radio and motion picture actress. In 1943 she met Juan Domingo Perón, then an under-secretary in the war ministry, and helped organize a radio workers' union under his sponsorship. They were married in Oct. 1945, and four months later Perón was elected president of Argentina. In 1947 she founded the María Eva Duarte de Perón Welfare foundation, which administered a huge program of social welfare and personal largesse. Through this organization and through her leadership in national labour groups and the so-called "descamisados"

(literally "shirtless ones," of the lower classes), she wielded an unparalleled political influence in Argentina on behalf of her husband, whom she termed "God for us—our sun, our air, our water, our life." She was the Peronist party's candidate for vice-president of Argentina in 1951 but withdrew because of illness and because of opposition from certain army groups. Three months later, in Nov. 1951, she was operated upon (apparently for cancer) and thereafter gradually lost physical strength. Her last public appearance was on June 4, 1952, at her husband's inauguration for his second term as president. Her death touched off great demonstrations of mourning in Argentina.

Perry, John Holliday, Sr., U.S. newspaper publisher (b. Port Royal, Ky., March 3, 1881—d. West Palm Beach, Fla., Dec. 4, 1952).

Perry, John Lester, U.S. industrialist (b. Worcester, Mass., March 11, 1881—d. Pittsburgh, Pa., May 27, 1952), attended the public schools of Worcester, Mass., and began his career with a steel company after graduation from high school. He later became president of three U.S. Steel corporation subsidiaries, including Carnegie-Illinois Steel Corporation (1938-46).

Peters, Susan (SUZANNE CARNAHAN), U.S. actress (b. Spokane, Wash., July 3, 1921—d. Visalia, Calif., Oct. 23, 1952), attended Max Reinhardt's School of Dramatic Art in Hollywood, Calif., and first attracted national attention as a motion-picture actress for her role in *Random Harvest* (1942). She was named one of the "stars of tomorrow" for 1943, and a number of starring roles followed until, on Jan. 1, 1945, she was injured in a hunting accident and paralyzed for life. Nevertheless, she continued to act in motion pictures and television and on the stage, playing the parts of invalids. In 1951 she took the leading role in a television show, "Miss Susan," written especially for her and concerning the life of a crippled woman attorney.

Pierson, Delavan Leonard, U.S. religious author, teacher and editor (b. Waterford, N.Y., Oct. 27, 1867—d. Clifton, N.J., Nov. 5, 1952).

Piñero, Jesús Toribio, Puerto Rican government official (b. Carolina, P.R., April 16, 1897—d. Canovanas, P.R., Nov. 19, 1952), studied at the University of Puerto Rico, Rio Piedras, and at the University of Pennsylvania, Philadelphia. He was elected chairman of the municipal assembly of his native town in 1928 and a member of the Puerto Rican house of representatives in 1940. In 1938 he had helped found the Popular Democratic party, which dominated Puerto Rican politics after 1940. From 1944 to 1946 he was the Puerto Rican resident commissioner at Washington, D.C., and on July 25, 1946, Pres. Harry S. Truman appointed him the first native-born governor of the island.

Pinkas, David Zvi, Israeli politician (b. Sopron, Hung., Dec. 6, 1895—d. Jerusalem, Israel, Aug. 14, 1952).

Poole, DeWitt Clinton, U.S. diplomat and educator (b. near Vancouver, Wash., Oct. 28, 1885—d. Princeton, N.J., Sept. 3, 1952).

Poptomov, Vladimir Tomov, Bulgarian diplomat (b. Belitza, Macedonia, 1890—d. Sofia, Bulg., May 2, 1952).

Preble, Madge Collar (MRS. ROBERT PREBLE), U.S. civic worker (b. Monroe, La., Nov. 18, 1904—d. Chicago, Ill., Nov. 30, 1952).

Price, William Jennings, U.S. diplomat and educator (b. Lancaster, Ky., Dec. 15, 1873—d. Washington, D.C., May 20, 1952).

Prosser, Charles Allen, U.S. educator (b. New Albany, Ind., Sept. 20, 1871—d. Minneapolis, Minn., Nov. 26, 1952).

Pucci, Enrico, Italian Roman Catholic prelate and journalist (d. Vatican City, State, Sept. 5, 1952).

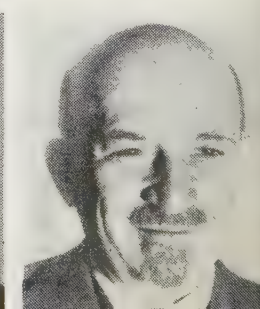
Quijano, Juan Hortensio, Argentine statesman (b. Curuzú-Cuatiá, Arg., June 1, 1884—d. Buenos Aires, Arg., April 3, 1952).

Quo Tai-chi, Chinese diplomat (b. Kwang-tsi, China, 1888—d. Santa Barbara, Calif., Feb. 29, 1952), was educated privately in China, went as a youth to the United States, and received a B.S. degree from the University of Pennsylvania, Philadelphia, in 1911. Returning to China, he became secretary and counsellor to Sun Yat-sen, and in 1923-24 was vice-minister of foreign affairs in the Cantonese government. In 1932 he was chief Chinese delegate at the armistice negotiations in Shanghai for withdrawal of Japanese troops from China, and in the following two years was a delegate to the League of Nations. He was appointed first Chinese ambassador to Great Britain in 1935 and in 1941 became foreign minister under Chiang Kai-shek. He was chairman of the United Nations Security council's first meeting in New York city in 1946.

Radford, Basil, British actor (b. Chester, Eng., June 25, 1897—d. London, Eng., Oct. 20, 1952).

Rawson, Arturo, Argentine army officer and political leader (b. Santiago del Estero, Arg., June 4, 1885—d. Buenos Aires, Arg., Oct. 8, 1952), received his education at the Argentine military college in 1902-05; he was commis-

1952 OBITUARIES: María Eva Duarte de Perón, Argentine political leader; George Santayana, Spanish-born philosopher; Kurt Schumacher, German political leader; Count Carlo Sforza, Italian diplomat; Chaim Weizmann, Israeli statesman



tioned second lieutenant in 1907 and subsequently advanced to the rank of divisional general (1943). In mid-1943 he headed a group of army officers who succeeded in overthrowing the conservative government of Pres. Ramón S. Castillo. Rawson was proclaimed president but held the office for only two days (June 5-7) before yielding in turn to Gen. Pedro Ramírez, his coleader in the revolution. Behind both officers, however, and wielding the true power, was Juan D. Perón, who thus was launched on his way to dictatorial power in Argentina. Rawson later turned against Perón and was twice arrested for alleged plotting against the Peronista regime, the last time in Sept. 1951.

Maymond, Percy Edward, U.S. palaeontologist (b. New Canaan, Conn., May 30, 1879—d. Cambridge, Mass., May 17, 1952).

Meilly, Peter C., U.S. industrialist and philanthropist (d. Indianapolis, Ind., Jan. 4, 1952).

Restrepo, Gonzalo, Colombian diplomat and government official (b. Manizales, Caldas, Colombia, Oct. 22, 1897—d. Bogotá, Colombia, June 22, 1952).

Reyes, Gabriel M., first Philippine Roman Catholic archbishop (b. Kalibo, P.I.—d. Washington, D.C., Oct. 10, 1952).

Rice, Thurman Brooks, U.S. public health authority (b. Landess, Ind., Aug. 17, 1888—d. Indianapolis, Ind., Dec. 27, 1952).

ricketson, Oliver Garrison, U.S. explorer and authority on Mayan culture (b. Pittsburgh, Pa., Sept. 19, 1894—d. New Bedford, Mass., Oct. 17, 1952).

riggs, Arthur Stanley, U.S. author and editor (b. Cranford, N.J., April 8, 1879—d. Washington, D.C., Nov. 8, 1952).

rightmire, George Washington, U.S. educator (b. Center Furnace, O., Nov. 15, 1868—d. Columbus, O., Dec. 23, 1952). studied at Ohio State university, Columbus, where in 1902 he joined the faculty of the law school. He became full professor of law in 1906, at the same time carrying on an active practice, dealing especially with patent, copyright and trademark cases. He was elected president of Ohio State in 1926, and retired in 1938.

imini, Giacomo, U.S. opera singer (b. Verona, It., March ?, 1888—d. Chicago, Ill., March 6, 1952).

ivetta, Count Pietro Silvio (TODDI), Italian author (b. Rome, It., July 8, 1886—d. Rome, July 1?, 1952).

Robinson, Boardman, U.S. artist (b. Somerset, N.S., Sept. 6, 1876—d. Stamford, Conn., Sept. 5, 1952). studied art as a youth at the Massachusetts Normal Art school in Boston, Mass., and at the Académie Colarossi and the Ecole des Beaux Arts in Paris, Fr. After trying vainly to earn a living as an artist in San Francisco, Calif., he moved to New York city, where from 1907 to 1910 he was a cartoonist for the *New York Morning Telegraph* and from 1910 to 1914 for the *New York Tribune*. In 1915 he toured Russia and the Balkans with the radical author, John Reed, on illustration assignments for the *Metropolitan* magazine; later he did work for *The Liberator*, *Harper's Weekly*, *The Masses* and the *Outlook* (London). In the 1920s his interest shifted to mural painting, and he did murals for the RKO building in Rockefeller centre, New York city, the Department of Justice building in Washington, D.C., and other structures. He was also noted as a book illustrator. Until 1947 Robinson was director of the Colorado Springs (Colo.) Fine Arts centre.

Robinson, Louis Newton, U.S. penologist and economist (b. Tunkhannock, Pa., Nov. 3, 1880—d. Media, Pa., Nov. 25, 1952).

Robison, Samuel Shelburne, U.S. naval officer (b. near Mifflintown, Pa., May 10, 1867—d. Glendale, Calif., Nov. 20, 1952).

Roland Holst, Henriette (HENRIETTE VAN DER SCHALK), Dutch poet and Socialist leader (b. Noordwijk, Neth., 1869—d. Amsterdam, Neth., Nov. 21, 1952).

Romero, José Rubén, Mexican author and diplomat (b. Cotija, Michoacán, Mex., Sept. 25, 1890—d. Mexico City, Mex., July 4, 1952).

Rosenbach, Abraham S. Wolf, U.S. bibliophile and collector (b. Philadelphia, Pa., July 22, 1876—d. Philadelphia, July 1, 1952).

Rostovtzeff, Michael Ivanovich, Russian classical scholar (b. Kiev, Russia, Nov. 10, 1870—d. New Haven, Conn., Oct. 20, 1952). was educated at the First Classical gymnasium, Kiev, at the University of Kiev and at the University of St. Petersburg. A three-year grant enabled him to study ancient history abroad, 1895-98, and at this time he acquired his lifelong interest in archaeological studies. He was professor of Latin at St. Petersburg university from 1898 to 1918 when he had to leave Russia because of the Bolshevik revolution; he then studied English at Oxford until 1920. He was professor of ancient history at the University of Wisconsin, Madison, 1920-25, and Sterling professor of ancient history and classical archaeology, Yale university, 1925-44 (later professor emeritus). He headed the Yale Dura-Europos expedition to Syria, 1928-38, and was director of Dura-Europos research, Yale, from 1944 until his death. His published works include *Iranians and Greeks in South Russia* (1922), *The Social and Economic History of the Roman Empire* (1926), *The Animal Style in South Russia and China* (1929), *Out of the Past of Greece and Rome* (1932) and *The Social and Economic History of the Hellenistic World* (1941).

Rubinstein, Beryl, U.S. pianist and composer (b. Athens, Ga., Oct. 26, 1898—d. Cleveland, O., Dec. 29, 1952).

Rubstov, Boris, Russian historian (d. Moscow, U.S.S.R., June 28?, 1952).

Sabath, Adolph Joachim, U.S. congressman (b. Zabori, Bohemia, April 4, 1866—d. Bethesda, Md., Nov. 6, 1952). emigrated to the United States in 1881, settling in Chicago and becoming a naturalized U.S. citizen at the age

of 21. After taking his law degree at Lake Forest (Ill.) university in 1891 he began law practice and in 1895 became justice of the peace in Chicago; in 1897 he was elected police magistrate, serving until 1907. In 1906 he was first elected to the U.S. house of representatives as a Democrat from the 5th (later 7th) Illinois district. Taking office in 1907, he served in the house continuously thereafter until his death, establishing a new record of consecutive service by a congressman; he was re-elected for his 24th term in 1952.

Sabath supported without exception every legislative measure sponsored by the administration of Franklin D. Roosevelt; he continued his undeviating party loyalty under the Harry S. Truman administration until July 1946, when he opposed a U.S. loan to Great Britain. Subsequently, however, as dean of the house of representatives, he returned to the Fair Deal fold.

Salter, William Thomas, U.S. pharmacologist (b. Boston, Mass., Dec. 19, 1901—d. New Haven, Conn., July 30, 1952).

Sanabria y Martínez, Victor Manuel, Costa Rican Roman Catholic prelate and historian (b. San Rafael de Oreamuno, Costa Rica, Jan. 17, 1899—d. San José, Costa Rica, June 8, 1952).

Santayana, George (JORGE AGUSTIN NICOLAS DE SANTAYANA), Spanish-born philosopher and man of letters (b. Madrid, Sp., Dec. 16, 1863—d. Rome, It., Sept. 26, 1952). moved to Boston, Mass. as a boy and graduated from Harvard university in 1886. A teacher at Harvard for 23 years, Santayana had resided in Europe since his retirement in 1912. For an account of his philosophy, see *Encyclopaedia Britannica*.

As a modern Platonist whose philosophy was set in an aesthetic context, he had contributed significantly to the development in America of a realistic metaphysics and theory of knowledge. He was a keen and somewhat disinterested observer of contemporary culture and was widely read as critic and analyst of the entire gamut of life from religion to politics. A master of literary form, Santayana as essayist and novelist as well as technical philosopher charmed three generations of readers with his brilliant prose.

Schmidt, Petrus Johannes, Dutch editor, secretary of U.N. Disarmament committee (b. Arnhem, Neth., Nov. 23, 1896—d. Jamaica, N.Y., Dec. 2, 1952).

Schroeder, Rudolph William ("SHORTY"), U.S. aviation pioneer (b. Chicago, Ill., Aug. 14, 1886—d. Chicago, Dec. 29, 1952). was one of the earliest U.S. pilots, learning to fly in 1910 and taking part thereafter in numerous barnstorming tours and establishing many new flight records. He was the first man to fly into the earth's stratosphere, setting an altitude mark of 38,100 ft. in 1920. Subsequently he was an executive or technical adviser of a number of aviation and air-line companies. From 1916 to 1920 he served in the U.S. army air corps, attaining the rank of major.

Schumacher, Kurt, German politician (b. Kulm, West Prussia [now Chelmno, Pol.], Oct. 13, 1895—d. Bonn, Ger., Aug. 20, 1952). was the son of a merchant and was educated at Halle, Leipzig, Berlin and Münster universities. After serving in World War I in which he lost his right arm, he became in 1920 political editor of the social democratic *Schwäbische Tagwacht*. He occupied a state legislative seat in the Württemberg diet, 1924-31, and was a member of the *Reichstag*, 1930-33. During the 1920s he had attacked extremists of the left and right, particularly the financial backers of the growing Nazi party. After the nazis had come to power in 1933, Schumacher was arrested and spent the next ten years in concentration camps. Released between March and August 1943 and again in Feb. 1944 he was rearrested after the plot against Hitler on July 20, 1944. He began to reorganize the Social Democratic party (*Sozialdemokratische Partei Deutschlands*) after the German defeat, and in Oct. 1945 at Hanover he was chairman of its first open meeting in 12 years. In May 1946 he became chairman of the S.P.D. for the three western zones. He sought to broaden the base of his party by appealing to the middle class and the religious, and in the Berlin elections of 1947 the S.P.D. emerged with a higher vote than ever before. His refusal to compromise with the Communists, on the other hand, resulted in constant attacks from the Soviet zone. A long illness, culminating in 1948 in the amputation of his left leg, further weakened his attenuated health, and he became increasingly bitter toward his political opponents. In 1949 he became leader of the opposition in the *bundesstag* and thereafter he consistently opposed the Schuman plan, the customs union between France and the Saar and, later, German rearmament and the Bonn contractual agreements. In many ways a heroic figure, Schumacher became fanatical in his desire for a reunited, socialist, democratic Germany, a concept which seemed to many like a revival of nationalism.

Schumann, Elisabeth, German singer (b. Merseburg, Ger., June 13, 1888—d. New York, N.Y., April 23, 1952).

Scotto, Vincent, French composer and song writer (b. Marseilles, Fr., 1876—d. Paris, Fr., Nov. 15, 1952).

Scribner, Charles, U.S. publisher (b. New York, N.Y., Jan. 26, 1890—d. New York, Feb. 11, 1952).

Scripps, William Edmund, U.S. publisher (b. Detroit, Mich., May 6, 1882—d. near Lake Orion, Mich., June 12, 1952).

Senanayake, Don Stephen, Ceylon prime minister (b. Oct. 20, 1884—d. Colombo, Ceylon, March 22, 1952). was educated at St. Thomas college, Mount Lavinia, Ceylon. A planter by profession he entered politics in 1924 when he succeeded his brother on the legislative council. From 1931 to 1947 he was minister of agriculture and lands and from 1942 to 1947 he was also leader of the state council and vice-chairman of the board of ministers. On Sept. 26, 1947, he formed a government which was handed full dominion status within the Commonwealth of Nations on Feb. 4, 1948. In addition to the premiership he held the portfolios of defense and external affairs. He attended meetings of commonwealth prime ministers in London in 1948, 1949 and 1951, and in Jan. 1950 presided over the first meeting of commonwealth foreign ministers to be held in Colombo. In Oct. 1951 he visited Australia and New Zealand. On March 21, 1952, he was thrown from his horse, and he died the following day.

Sensenbrenner, Frank Jacob, U.S. manufacturer (b. Menasha, Wis., Dec. 23, 1864—d. Neenah, Wis., July 22, 1952).

Serafini, Camillo Marchese, governor of Vatican City (b. Rome, It., 1863?—d. Vatican City State, March 21, 1952).

Sforza, Count Carlo, Italian statesman (b. Montignoso di Lunigiana, Liguria, It., Sept. 25, 1873—d. Rome, It., Sept. 4, 1952), entered the diplomatic service in 1896 and served in Cairo, Paris, Constantinople, Peking, Bucharest, Madrid and London. In 1908–09 he was *chargé d'affaires* in Istanbul. He was *chef de cabinet* to the Marquis di San Giuliano, the foreign minister, 1910–11; minister to China, 1911–15, and minister to Serbia, 1915–18. In Nov. 1918 he returned to Istanbul as high commissioner for Italy. He was undersecretary of state for foreign affairs, 1919–20, and minister for foreign affairs, 1920–21. Appointed ambassador to France in Feb. 1922, he resigned nine months later, refusing to serve under Benito Mussolini. For nearly two decades Sforza lived abroad—in Belgium until 1939 and in the United States after 1940—as lecturer and political commentator. He returned to Italy in 1943. He was minister without portfolio in the cabinets of Pietro Badoglio, April–June 1944, and Ivanoe Bonomi, June–Nov. 1944, high commissioner for *epurazione*, June 1944–Jan. 1945, and president of the consultative assembly, Sept. 1945–May 1946. Elected a member of the constituent assembly as a Republican, 1946, he joined the third Alcide De Gasperi cabinet in 1947 as minister of foreign affairs, retaining this position until July 1951 when he resigned because of ill-health. Sforza's influence was a determining factor in the Italian ratification of the peace treaty, in Italy's joining the Organization for European Economic Cooperation and in its adherence to the North Atlantic treaty, which he signed for Italy in Washington, D.C., April 4, 1949. His published works in English include *Makers of Modern Europe* (1930), *European Dictatorships* (1931) and *The Real Italians* (1942).

Sherman, Harry, U.S. motion-picture producer (b. Boston, Mass., Nov. 4, 1884—d. Hollywood, Calif., Sept. 25, 1952).

Sherrington, Sir Charles Scott, British physiologist (b. London, Eng., Nov. 27, 1857—d. Eastbourne, Sussex, Eng., March 4, 1952), was educated at Ipswich Grammar school, Gonville and Caius college, Cambridge, and St. Thomas' hospital medical school, London. In 1891 he became Brown professor of pathology, University of London, and professor-superintendent of the Brown Animal Sanatory institution. In 1895 he was appointed Holt professor of physiology, University of Liverpool. He was elected an honorary fellow of Caius in 1899. From 1913 to 1936 he was Waynflete professor of physiology, Oxford university, and a fellow of Magdalen college. He also held the Fullerian chair of physiology at the Royal institution, London, 1914–17. Elected a fellow of the Royal society in 1893, he was its president in 1920 and president of the British association in 1922. His most important contributions were on the mechanism of the nervous system, and his book *The Integrative Action of the Nervous System* (Silliman lectures, Yale, 1904, reprinted, 1947) was recognized as a standard work. In 1932 he was awarded the Nobel prize for medicine jointly with Professor E. D. Adrian.

Shientag, Bernard Lloyd, U.S. jurist (b. New York, N.Y., April 13, 1887—d. New York, May 23, 1952).

Short, Joseph Hudson, Jr. ("Joe"), U.S. presidential secretary (b. Vicksburg, Miss., Feb. 11, 1904—d. Alexandria, Va., Sept. 18, 1952), received his bachelor's degree from Virginia Military institute, Lexington, Va., in 1925 and began his journalistic career as a reporter for the *Jackson* (Miss.) *Daily News* the same year. He later worked for the *Vicksburg Post and Herald*, the *New Orleans Times-Picayune*, the *Chicago Sun* (later *Sun-Times*) and the *Baltimore Sun*. With the latter paper he was Washington correspondent from 1943 until his appointment in 1950 as press secretary to Pres. Harry S. Truman. In 1948 he was president of the National Press club in Washington.

Sidgwick, Nevil Vincent, British chemist (b. Oxford, Eng., May 8, 1873—d. Oxford, March 15, 1952).

Sill, Frederick Herbert, U.S. educator and Episcopalian clergyman (b. New York, N.Y., March 10, 1874—d. Kent, Conn., July 17, 1952).

Skipworth, Alison, British-born U.S. actress (b. London, Eng., July 25, 1863—d. New York, N.Y., July 5, 1952).

Slansky, Rudolf Salzmann, Czechoslovak politician (b. Nezvestice, Bohemia, July 31, 1901—d. Prague, Czechoslovakia, Dec. 3, 1952), became editor of *Rude Pravo*, organ of the Czechoslovak Communist party, and Communist party secretary in Moravska-Ostrava in 1924. He was elected a member of the central and executive committees of the party in 1928 and was its secretary-general from 1945. A member of the Czechoslovak national assembly, 1935–37, he flew to the U.S.S.R. after the Munich agreement of 1938 and worked among Czech groups there, becoming a member of the partisan general headquarters, Kiev, in 1944. He was leader of the partisan movement in Slovakia from 1944 to 1945 when he re-entered parliament and became chairman of the defense committee of the national assembly. In Sept. 1947 he was a delegate to the foundation conference of the Cominform, held in Wilczagora, Lower Silesia. In Nov. 1951, shortly after being "promoted" to vice-premier, he was arrested on a charge of being the ringleader of a Jewish plot to overthrow Communism in Czechoslovakia. In Nov. 1952 Slansky, with ten others, including Vladimir Clementis, was sentenced to death by a People's court in Prague. He was hanged on Dec. 3.

Smart, David A., U.S. magazine publisher (b. Omaha, Neb., Oct. 4, 1892—d. Chicago, Ill., Oct. 16, 1952), went to work as an advertising salesman for the *Chicago Tribune* in 1911. In 1921 he founded his own publishing company, which in 1933 introduced *Esquire*, a magazine for men which became an immediate publishing success. In 1936 he founded *Coronet*, a pocket-size magazine carrying no advertising and featuring fine photographs and articles of general interest; it too was a success. Still another venture was *Ken*, whose publication was, however, suspended.

Smith, Barry Congar, U.S. welfare leader (b. Pittsburgh, Pa., June 28, 1877—d. New York, N.Y., March 31, 1952).

Smith, Ida B. Wise, U.S. temperance leader (b. Philadelphia, Pa., July 3, 1871—d. Clarinda, Ia., Feb. 16, 1952), was president of the Woman's Christian Temperance union from 1933 to 1944. She taught school for a number of years and ran a store at Hamburg, Ia., meanwhile becoming interested in the movement for prohibition. She was elected president of the Iowa state W.C.T.U. in 1913, and her fight against liquor continued for the rest of her life.

Soskin, William, U.S. editor, publisher and critic (b. New York, N.Y., May 1, 1899—d. St. Petersburg, Fla., March 24, 1952).

Spencer, Niles, U.S. artist (b. Pawtucket, R.I., May 16, 1893—d. Dingman's Ferry, Pa., May 15, 1952).

Spicer, William Ambrose, U.S. author, clergyman and pioneer leader of Seventh Day Adventist Church (b. Freeborn, Minn., Dec. 15, 1865—d. Tacoma Park, Md., Oct. 17, 1952).

Stahlberg, Kaarlo Juho, Finnish statesman and first president of Finland (b. Jan. 28, 1865—d. Helsinki, Fin., Sept. 22, 1952).

Stauffer, Donald Alfred, U.S. author and professor (b. Denver, Colo., July 4, 1902—d. Oxford, Eng., Aug. 8, 1952).

Steeruwitz, Ernst, Austrian industrial engineer and politician (b. Mies, Bohemia, 1878—d. Vienna, Aus., Oct. 19, 1952).

Stillman, Charles Clark, U.S. educator and social worker (b. Troy, N.Y., June 22, 1877—d. Columbus, O., Jan. 5, 1952).

Stimpson, George William, U.S. journalist and author (b. near Anamosa, Ia., Nov. 3, 1896—d. Washington, D.C., Sept. 27, 1952).

Stratford, James, former chief justice of the Union of South Africa (b. The Dene, Port Elizabeth, U. of S. Af., July 19, 1869—d. Capetown, U. of S. Af., Jan. 17, 1952).

Strong, Austin, U.S. dramatist (b. San Francisco, Calif., April 18, 1881—d. Nantucket, Mass., Sept. 17, 1952), a grand-stepson of Robert Louis Stevenson, studied at Wellington college, N.Z., and after a brief career as a landscape architect became a playwright. His first play, *The Exile* (1903), was written in collaboration with his uncle, Lloyd Osbourne, who had also collaborated with Robert Louis Stevenson. Strong's *Three Wise Fools*, first produced in New York city in 1918, was revived in 1936 with William Gillette as the star. His *Seventh Heaven* (1922) was one of the great theatrical successes of the 1920s in the U.S., running for 704 performances on Broadway. Other plays by Strong included *The Little Father of the Wilderness* (with Lloyd Osbourne, 1905), *The Drums of Oude* (1906), *The Toymaker of Nuremberg* (1907), a version of *Rip Van Winkle* (1911), *Bunny* (1916) and *A Play Without a Name* (1928).

Sturtevant, Edgar Howard, U.S. philologist (b. Jacksonville, Ill., March 7, 1875—d. Branford, Conn., July 1, 1952).

Sullivan, Mark, U.S. author and newspaperman (b. Avondale, Pa., Sept. 10, 1874—d. West Chester, Pa., Aug. 13, 1952), took his bachelor's degree at Harvard in 1900 and his LL.B. there in 1903. After less than a year of law practice in New York city, he joined the *Ladies' Home Journal* as a staff writer. In 1906 he was named Washington correspondent of *Collier's Weekly* and in Jan. 1914 he became editor of that magazine. Unsympathetic toward Pres. Woodrow Wilson's administration during World War I, he opposed U.S. entry into the League of Nations. In 1919 he left *Collier's* to become a correspondent for the *New York Evening Post* and four years later joined the *New York Tribune* (which became the *Herald-Tribune* in 1924). There his political column drew a national readership and was syndicated in approximately 100 newspapers; he continued to write it until his death. A close friend of Pres. Herbert C. Hoover, Sullivan at first supported Pres. Franklin D. Roosevelt but soon became one of the foremost critics of the New Deal. Sullivan was author of *Our Times*, a 6-vol. history of the United States during the period 1900–25, and of *The Education of an American*, an autobiography (1938).

Swingle, Walter Tennyson, U.S. botanist (b. Canaan, Pa., Jan. 8, 1871—d. Washington, D.C., Jan. 19, 1952).

Szasz, Otto, Hungarian-U.S. mathematician (b. Alsoszuks, Hung., Dec. 11, 1884—d. Switzerland, Sept. 19, 1952), received degrees from the University of Budapest, Hung., and the University of Paris, Fr. After teaching at the University of Frankfurt, Ger., for several years, he went to the United States in 1933 to join the faculty of the Massachusetts Institute of Technology, Cambridge. Later he taught at Brown (Providence, R.I.) and other universities before going to the University of Cincinnati, O., in 1936. Szasz, who became a U.S. citizen in 1940, was an international authority on many aspects of higher mathematics; he published about 100 different papers and was awarded the Koenig prize for mathematics in 1930. He was also associate editor of the *American Journal of Mathematics*.

Taylor, Emily Drayton (MRS. J. MADISON TAYLOR), U.S. miniature painter (b. Philadelphia, Pa., April 14, 1860—d. Philadelphia, June 19, 1952).

Taylor, Montgomery Meigs, U.S. naval officer (b. Washington, D.C., Oct. 13, 1869—d. Bethesda, Md., Oct. 21, 1952).

Taylor, Theodore Cooke, British welfare leader (b. Carlinghow, Batley, Eng., Aug. 3, 1850—d. Grassington, Yorkshire, Eng., Oct. 19, 1952).

Tchernov (Chernov), Victor (VICTOR OLIENIN), Russian revolutionary leader (b. 1876—d. New York, N.Y., April 15, 1952), was a cofounder of the

Russian Social Revolutionary party and its leader for a number of years. A prominent figure in the Russian Revolution of 1917, he was president of the constituent assembly which met Jan. 18, 1918, and was suppressed by the Bolsheviks after a single day's session in Moscow (see his biography in *Encyclopaedia Britannica*). Tchernov went into exile shortly thereafter, moving to Paris in 1938 and to New York city in 1940.

Wheeler, Fred, U.S. baseball player (b. Georgetown, Mass., 1872?—d. Boston, Mass., July 3, 1952).

Wilde, Jean, French author (b. Saint-Junien, Haute-Vienne, Fr., May 9, 1877—d. Paris, Fr., April 9, 1952).

Wolfe, John Martin, U.S. educator (b. Fort Covington, N.Y., Dec. 27, 1869—d. Rutland, Vt., Feb. 26, 1952).

Worthington, Samuel Hunter, U.S. educator and author (b. Tennessee, April 19, 1876—d. Washington, D.C., Oct. 27, 1952).

Worthington, Josef, Austrian sculptor (b. Feb. 7, 1889—d. Feb. 1952).

Wright, Vesta (MATILDA ALICE, LADY DE FRECE), British comedienne (b. Worcester, Eng., May 13, 1864—d. London, Eng., Sept. 16, 1952).

Wright, Richard Montgomery, U.S. banker and diplomat (b. San Francisco, Calif., April 9, 1866—d. San Francisco, Jan. 23, 1952).

Wright, John Andrew, Australian businessman and diplomat (b. Bendigo, Austr., Feb. 3, 1900—d. Canberra, Austr., Dec. 17, 1952).

Wright, Sir Hugh Robert, Irish-born politician (b. Dublin, Ire., May 2, 1877—d. Beckenham, Kent, Eng., Dec. 27, 1952).

Wright, Ernest William, British authority on mediaeval art (b. Carmarthen, Wales, Dec. 27, 1882—d. Haslemere, Surrey, Eng., Jan. 11, 1952).

Trotti, Lamar, U.S. motion-picture scenarist and producer (b. Atlanta, Ga., Oct. 18, 1900—d. Oceanside, Calif., Aug. 28, 1952), received a bachelor's degree at the University of Georgia, Athens, in 1921 and from 1921 to 1925 was a reporter and city editor for the *Atlanta Georgian*. From 1925 to 1932 he was an assistant to Will H. Hays, motion picture "czar," and in the latter year he joined the staff of the Twentieth Century-Fox Film corporation as a producer and scenarist. Among the better known screenplays written by Trotti were *Wilson*, *Cheaper by the Dozen*, *The Razor's Edge*, *The Ox-Bow Incident* and *Young Mr. Lincoln*; he also wrote more than 30 others. For *Wilson*, Trotti was named 1944 Academy award winner, as author of the best original screen play.

Tyndale, Orville Sievwright, Canadian jurist and educator (b. Montreal, Que., June 1887—d. Montreal, Oct. 29, 1952).

Tyson, William David, U.S. Baptist minister and Prohibitionist politician (b. Newman, Ga., Oct. 15, 1866—d. Glendale, Calif., Nov. 21, 1952).

Udall, Homer Bews, U.S. economist and educator (b. Hinsdale, Ill., Dec. 24, 1888—d. Evanston, Ill., July 12, 1952), took his bachelor's and master's degrees from Northwestern university, Evanston, Ill., and his Ph.D. from Harvard university in 1915. From 1915 to 1922 he taught economics at Northwestern, advancing to the rank of professor. He was professor of business economics at Harvard from 1922 to 1929, then vice-president of the Tri-Continental corporation, an investment trust, from 1929 to 1937. He returned to Northwestern as dean of that university's school of commerce (1939-49).

Van Hoosen, Bertha, U.S. surgeon and author (b. Rochester, Mich., March 26, 1863—d. Romeo, Mich., June 7, 1952).

Vaughan, Joseph Floyd ("ARKY"), U.S. baseball player (b. Clifty, Ark., March 9, 1912—d. Eagleville, Calif., Aug. 31, 1952).

Vaughan, Thomas Wayland, U.S. geologist and educator (b. Jonesville, Tex., Sept. 20, 1870—d. Washington, D.C., Jan. 16, 1952).

Vedder, Edward Bright, U.S. physician, discoverer of the cause of beri-beri (b. New York, N.Y., June 28, 1878—d. Washington, D.C., Jan. 30, 1952).

Verduynen, Edgar Michiels van, BARON, Dutch diplomat (b. The Hague, Neth., Dec. 2, 1885—d. London, Eng., May 13, 1952).

Verneuil, Louis, French playwright, actor and producer (b. Paris, Fr., May 14, 1893—d. Paris, Nov. 3, 1952), began his career as a journalist but in 1912 became assistant to the manager of the Théâtre Femina. In 1911-14 he had ten one-act revues produced in Paris. His first three-act comedy was *La Charrrette anglaise* (with Georges Berr, 1916) and he made his debut as an actor in his own *La Jeune fille au bain* (1917). Thereafter he played the lead in almost all his plays, which included *Daniel* (1920), *La Dame en rose* (1921), *La Maison du passeur* (1922) and *Le Fauteuil 47* (1923), and the highly successful *Ma Cousine de Varsovie* (which he wrote for Elvire Popesco, 1923). In 1940 he went to live in the United States where he wrote books on the theatre and numerous film scripts. Verneuil's only English play, *Affairs of State* (1950), ran for more than 600 performances in New York city and was running in London at the time of his death.

Volta, Luigi, Italian astronomer (b. Como, It., July 27, 1876?—d. Milan, It., Oct. 7, 1952).

Wadsworth, James Wolcott, U.S. legislator (b. Genesee, N.Y., Aug. 12, 1877—d. Washington, D.C., June 21, 1952).

Walker, Ernest Linwood, U.S. bacteriologist and educator (b. Freeport, Me., June 24, 1870—d. Atherton, Calif., Jan. 19, 1952).

Wallace, Mrs. David Willock (MADGE GATES), U.S. civic leader and mother-in-law of Harry S. Truman (b. Port Byron, Ill., 1862—d. Washington, D.C., Dec. 5, 1952).

Walsh, Thomas Joseph, U.S. Roman Catholic archbishop (b. Parker's Landing, Pa., Dec. 6, 1873—d. South Orange, N.J., June 6, 1952).

Ward, Fannie, U.S. actress (b. St. Louis, Mo., Feb. 22, 1872—d. New York, N.Y., Jan. 27, 1952).

Webster, H(aro)ld T(ucker), U.S. cartoonist (b. Parkersburg, W.Va., Sept. 21, 1885—d. Stamford, Conn., Sept. 22, 1952), was educated in the public schools at Tomahawk, Wis. He worked for the *Chicago Daily News* (1903-05) and the old *Chicago Inter-Ocean* (1905-08) and finally went to New York city, where he was from 1931 staff cartoonist for the *New York Herald Tribune*. His series of cartoons entitled "The Timid Soul," featuring a meek character named Milquetoast, became nationally famous. Others of his series, also widely syndicated, were "The Thrill That Comes Once in a Lifetime," "Life's Darkest Moment," "The Boy Who Made Good," "How to Torture Your Wife" and "Poker Portraits."

Weed, Lewis Hill, U.S. anatomist (b. Cleveland, O., Nov. 15, 1886—d. Reading, Pa., Dec. 21, 1952).

Weinman, Adolph Alexander, U.S. sculptor (b. Karlsruhe, Ger., Dec. 11, 1870—d. Port Chester, N.Y., Aug. 8, 1952), emigrated as a child to New York city, where he was a student at Cooper union and later studied sculpture under Augustus Saint-Gaudens at the Art Students League. He opened his own studio in 1901 and first attracted notice for his group of American Indians at the St. Louis, Mo., world's fair of 1904. Other well-known works of his, all in the conservative mode of sculpture, include a pediment of the national archives building in Washington, D.C., a monumental frieze for the Elks national memorial building in Chicago, Ill., a frieze for the supreme court building in Washington, a pediment group for the Thomas Jefferson national memorial in Washington, and various figures for the state capitols of Kentucky, Wisconsin, Missouri and Louisiana. Weinman was the recipient of several international awards in sculpture and was president of the National Sculpture society from 1927 to 1930.

Weizmann, Chaim, Israeli statesman (b. Motol, near Pinsk, Byelorussia, Nov. 27, 1874—d. Rehovot, Israel, Nov. 9, 1952), was educated at Pinsk, and later studied at the universities of Berlin and Freiburg, Baden. A distinguished chemist, he was appointed a lecturer at Geneva university in 1901 and three years later went to England where he became reader in biochemistry at Manchester. In 1916 he was appointed director of the admiralty laboratories by Winston Churchill. This appointment brought him into contact with political leaders, including Herbert Samuel (later Viscount Samuel) and A. J. Balfour (later the earl of Balfour). His activities for Zionism led to the Balfour declaration on Nov. 2, 1917, and early in 1918 he went to Palestine as head of the Zionist organization. In 1919 he presented the Jewish national claims at the Versailles peace conference. He was president of the World Zionist organization from 1920 to 1931, when he resigned in protest at the British White Paper on Palestine, but served again from 1935 to 1946. In 1929 the Jewish Agency for Palestine was created and he was appointed president. In 1939 he offered his services to the British government and was honorary adviser to the ministry of supply until 1945. By then he was in favour of the partition of Palestine into Jewish and Arab states, and the Zionist congress at Basel, Switz., in Dec. 1946, did not re-elect him as president. When the independent state of Israel was founded in May 1948 he was chosen as provisional president. He was elected first president on Feb. 17, 1949, and re-elected, although ill and confined to his home, on Nov. 19, 1951. He had settled in Palestine in 1934 when he was appointed director of the Daniel Sieff Research institute, Rehovot; he was later appointed director of the Weizmann Institute of Science. In 1932 he became chairman of the board of governors of the Hebrew university. His autobiography *Trial and Error* was published in 1949.

Wenrich, Percy, U.S. composer of popular music (b. Joplin, Mo., Jan. 23, 1880—d. New York, N.Y., March 17, 1952).

Wexler, Irving (WAXEY GORDON), U.S. racketeer (b. 1888?—d. Alcatraz Island, U.S., June 24, 1952).

White, Wallace Humphrey, Jr., U.S. legislator (b. Lewiston, Me., Aug. 6, 1877—d. Auburn, Me., March 31, 1952).

Widtsøe, John Andreas, U.S. educator and Mormon leader (b. Froya Island, Nor., Jan. 31, 1872—d. Salt Lake City, Utah, Nov. 29, 1952), emigrated with his mother to the United States as a youth and settled in Utah. He took his bachelor's degree from Harvard university in 1894 and continued his studies at the University of Göttingen, Ger., where he received his master's degree and his Ph.D. Beginning his career as a chemist with the Utah experimental station in 1894, he was later professor of chemistry at Utah State Agricultural college, Logan (1895-1905), director of the experimental station (1900-05), president of the Agricultural college (1907-16) and president of the University of Utah, Salt Lake City (1916-21). On March 17, 1921, he was elected a member of the Council of Twelve Apostles of the Latter Day Saints Church and at the time of his death was the second-ranking member of that governing body of the Mormons. Widtsøe was an internationally known authority on dry farming and wrote a number of works on the subject.

Wilson, Edward Harlan, U.S. surgeon and specialist in bone diseases of children (b. Columbus, O., May 31, 1891—d. Columbus, Dec. 14, 1952).

Wilson, Frank Norman, U.S. physician (b. Livonia, Mich., Nov. 19, 1890—d. Stockbridge, Mich., Sept. 11, 1952).

Winkelman, Henri-Gerard, Dutch army officer and World War II resistance leader (b. Maastricht, Neth., 1876—d. The Hague, Neth., Dec. 27, 1952).

Wirth, Louis, U.S. sociologist (b. Gemünden, Ger., Aug. 28, 1897—d. Buffalo, N.Y., May 3, 1952), was brought to the United States as a youth and became a naturalized U.S. citizen in 1924. He received his bachelor's, master's and doctor's degrees from The University of Chicago, where he later taught sociology, advancing to the rank of professor and associate dean of the social sciences division in 1940. Wirth, who was a consultant for the National Resources Planning board from 1935 to 1943, was the author of several sociological works.

Wood, Arthur Barton, Canadian insurance leader (b. Knowlton, Que., Oct. 28, 1870—d. Montreal, Que., June 14, 1952).

Worrell, William Hoyt, U.S. editor and orientalist (b. Toledo, O., April 28, 1879—d. Haverhill, Mass., Dec. 3, 1952).

Wright, John Dutton, U.S. author and educator of the deaf (b. Fredonia, N.Y., July 20, 1866—d. New York, N.Y., Jan. 19, 1952).

Wright, Louis Tompkins, U.S. surgeon (b. La Grange, Ga., July 23, 1891—d. New York, N.Y., Oct. 8, 1952), frequently referred to as the outstanding U.S. Negro physician of his time, graduated from Clark university at Atlanta, Ga., in 1911 and took his M.D. at Harvard university in 1915. He began practising surgery at New York city in 1919 and the following year joined the surgical staff of Harlem hospital, advancing to director of surgery there in 1943. In 1948 he was named president of the hospital's medical board. Wright was credited with research into methods of cancer prevention and with pioneer tests in the use of the antibiotic aureomycin. During World War I he was a medical corps officer with the United States expeditionary forces in France. He was awarded the Spingarn medal in 1940 for outstanding achievement by a Negro.

Yague, Juan, Spanish soldier and diplomat (d. Burgos, Sp., Oct. 21, 1952).

Obstetrics: see GYNAECOLOGY AND OBSTETRICS.

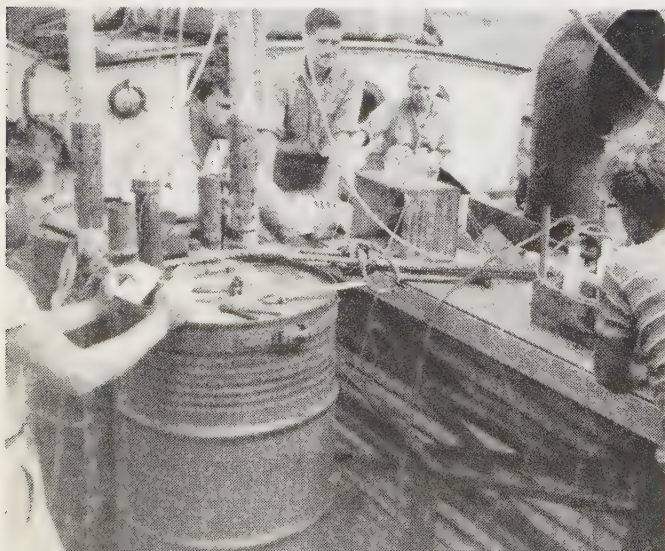
Occupational Diseases: see INDUSTRIAL HEALTH.

Oceanography. Oceanographic vessels ranged far and wide during the year 1952. The British R.R.S. "Discovery II" and the French vessel "Commandant Charcot" returned from the Antarctic and Indian oceans. The Danish R.V. "Galathea" returned from circumnavigating the globe, while the equatorial regions of both the Pacific and Atlantic oceans were investigated by vessels of the Scripps Institution of Oceanography, the U.S. navy electronics laboratory and the Woods Hole Oceanographic institution.

Geophysical explorations by British and U.S. vessels, frequently working in pairs, continued to obtain data requiring a re-examination of accepted geological hypotheses. The widespread distribution of well sifted sand layers in deep ocean sediments, the absence of continental type rock below the ocean floor and the shallow depth of the Mohorovic discontinuity (about 10 km. below the ocean floor compared with about 40 km. under the continents) led to much discussion in geological circles.

In the Pacific ocean a depth of 10,863 m. was sounded by H.M.S. "Challenger." About 366 m. deeper than the Cape Johnson depth in the Philippine trench, the new depth was located in the Mariana trench, 200 mi. southwest of Guam.

SAMPLERS FILLED with ocean water (tanks at left) taken from Atlantic depths of 10,000 ft. by scientists aboard a research vessel of the Woods Hole Oceanographic institution in 1952. Radioactive carbon dating methods indicated the water had not been near the surface in 1,750 years



Deep currents found to exist under the arctic ice pack, having a transport as great as one-twentieth of the Gulf stream, and the apparent slow return of deep water toward the equator—as evidenced from radiocarbon dating methods which indicated that water samples taken from a depth of 10,000 ft. had not been near the surface for 1,750 years—led to the reopening of the basic question of how much of the energy of the North Atlantic current system comes from the prevailing winds and how much from regional density differences maintained by the climate. However, much effort was still being expended in refining and improving the theoretical approach to purely wind-driven systems.

The nutrient rich water caused by upswelling off the North African coast was traced to within a few hundred miles of the South American coast during a four-month cruise of the R.V. "Atlantis" and R.V. "Albatross III." The biology, chemistry, hydrography and meteorology of the equatorial region were intensively investigated. Similar surveys were being undertaken in the tropical Pacific. The Danish R.V. "Galathea" found animal life at a depth of 10,000 m. in the Pacific ocean, more than 2,000 m. below any previously obtained. More than 125 specimens belonging to nine species were obtained. Living bacteria from bottom deposits were also taken.

The interaction between the ocean surface and the atmosphere received more and more attention, with active interest in the investigation of the dimensions and weight of sea spray droplets in the air, a matter of fundamental interest in the question of the exchange of moisture and heat between ocean and atmosphere.

Practical applications of oceanography were emphasized by the publication of a major report on wartime investigations of the fundamentals of the fouling of ship bottoms and its prevention, and a report on the disposal of pollutants at sea which led to active investigations of the dynamics of mixing between salt and fresh water in estuaries.

Oceanographers not only explored the sea by the classical method of ships, but used aeroplanes more and more for ocean current measurements by new instrumentation, to land on the arctic ice pack and finally to inhabit an ice island in the Arctic ocean. (See also COAST AND GEODETIC SURVEY, U.S.; MARINE BIOLOGY.)

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Office of Education, U.S.: see EDUCATION; FEDERAL SECURITY AGENCY.

Office of Rent Stabilization: see RENT STABILIZATION, OFFICE OF.

Ohio. A north central state of the United States, popularly known as the "Buckeye state," Ohio officially became a state of the union on Feb. 19, 1803. Area: 41,222 sq.mi., including 222 sq.mi. of water; pop. (1950 census): 7,946,627, including 5,578,274 urban and 2,368,353 rural; 6,566,531 white and 1,380,096 nonwhite. The principal cities and their 1950 population figures are: Cleveland 914,808, Cincinnati 503,998, Columbus 375,901, Toledo 303,616, Akron 274,605, Dayton 243,872, Youngstown 168,330 and Canton 116,912.

History.—The quiet and sparsely populated hill country of

Pike county in southern Ohio prepared for a rapid transformation after the Atomic Energy commission announced in Aug. 1952 that a vast plant would be built there for the production of uranium 235 by gaseous diffusion. To provide power for the \$1,200,000,000 plant, two big generating stations were to be constructed along the Ohio river where they would have easy access to coal supplies by barge. They would burn 7,500,000 tons of coal a year and to meet the needs of the atomic plant would generate 1,800,000 kw. of electricity. The Goodyear Tire and Rubber company was to operate the uranium plant.

Ohio's 37th infantry division was mustered into federal service in January and underwent training at Camp Polk, La. Late January floods, the worst of which centred around Marietta, brought death to 10 persons and made 10,000 homeless for a while. Murray Seasongood resigned from the Ohio Turnpike commission in March after disagreements with other members and was replaced by A. J. Allen of Cincinnati. The Ohio supreme court again upheld the constitutionality of the turnpike act in July.

State officers in 1952 were: governor, Frank J. Lausche (Dem.); lieutenant governor, George D. Nye (Dem.); secretary of state, Ted W. Brown (Rep.); auditor, Joseph T. Ferguson (Dem.); treasurer, Roger W. Tracy (Rep.); attorney general, C. William O'Neill (Rep.).

Education.—In 1952 the state had 2,939 elementary schools with a total enrolment of 807,661 and a teaching staff of 25,972, and 1,170 secondary schools with an enrolment of 321,711 and a teaching staff of 18,934. State expenditures on education for the school year 1951-52 were approximately \$266,000,000. The state director of education in 1952 was Clyde Hisson.

Social Insurance and Assistance, Public Welfare and Related Programs.—The average number of recipients of general relief per month in the fiscal year ended June 30, 1952, was 20,077, including a monthly average of 3,440 cases which received only medical-hospital care; the total assistance extended was \$15,111,670. The average number per month receiving aid for the disabled was 4,251, and they received \$2,253,212; aid for the aged, 117,589 cases received a total of \$70,411,175; aid to dependent children, 13,729 cases received a total of \$11,566,161; aid to the blind, 3,772 cases received a total of \$2,203,488. Benefits paid by the Ohio bureau of unemployment compensation in the fiscal year ended June 30, 1952, totalled \$34,723,533 in compensation for 1,586,533 weeks of unemployment. Workers covered by the Ohio unemployment compensation law at the beginning of 1952 totalled 2,398,943.

Ohio's four established penal institutions had an average daily population of 9,150 for the fiscal year ended June 30, 1952. Two industrial schools had an average daily population of 1,045. The Marion training school, which was opened in 1950 to rehabilitate and give vocational training to younger, more promising men who had been found guilty of violating criminal laws, had an average daily population of 79. Construction of a new building for the Marion school was begun in June 1952. Total operating costs of all welfare department institutions in the fiscal year 1952 were \$35,111,334. Farms operated by the department's institutions produced more than \$4,000,000 in agricultural products in the fiscal year.

Communications.—Ohio had 76,258 mi. of highways in 1952 outside of municipalities. Of this total, 16,048 mi. were classified as rural, 29,093 mi. as county and 41,116 mi. as township. Total state expenditures on highways in the fiscal year ended June 30, 1952, were \$80,095,207. The state had 8,400 mi. of railroads.

Banking and Finance.—There were 419 state and private banks in Ohio with deposits (June 30, 1952) of \$4,494,693,181 and resources of \$4,908,299,193. There were 238 active national banks in the state with deposits (June 30, 1952) of \$4,021,532,000 and resources of \$4,325,291,000. State-chartered savings and loan institutions numbered 477 with total resources (June 30, 1952) of \$1,612,742,167. There were 133 federal savings and loan associations with total assets (June 30, 1952) of \$988,485,637.

The state budget for the 1952-53 biennium was \$729,000,000. It is unconstitutional for the state to have a debt except for \$200,000,000 for

Table II.—Principal Industries of Ohio

	Value added by manufacture	
	1950	1949
Food and kindred products	\$476,568,000	\$509,037,000
Tobacco manufactures	11,334,000	9,790,000
Textile mill products	62,956,000	48,948,000
Apparel and related products	128,892,000	131,568,000
Furniture and fixtures	141,523,000	154,421,000
Paper and allied products	262,990,000	195,378,000
Printing and publishing industries	361,088,000	344,833,000
Chemicals and allied products	416,558,000	348,211,000
Petroleum and coal products	152,941,000	109,935,000
Rubber products	498,501,000	353,453,000
Leather and leather products	58,968,000	60,119,000
Stone, clay and glass products	402,121,000	338,910,000
Primary metal industries	1,263,579,000	874,928,000
Fabricated metal products	787,286,000	609,473,000
Machinery (except electrical)	1,360,683,000	1,097,656,000
Electrical machinery	541,373,000	428,825,000
Transportation equipment	779,810,000	585,329,000
Miscellaneous manufactures	184,368,000	152,740,000

a soldiers' bonus for which provision was made by a constitutional amendment. The Ohio Turnpike commission on June 4, 1952, sold \$326,000,000 in turnpike revenue bonds, the largest issue of this kind ever brought out. The purpose of the issue was to finance construction of 241 mi. of superhighway from the Pennsylvania turnpike across Ohio to the Indiana line in northwestern Ohio.

Agriculture.—Farm land prices in Ohio continued to advance rapidly, increasing 11% from July 1951 to July 1952, one of the most rapid advances in the nation. Values were up 216% compared with 1935-39. Estimated total value of Ohio farm land and buildings as of March 1952 was \$3,808,000,000, or \$181.60 per acre. Farm debt continued to increase. Cash receipts from farm marketings during the first eight months of the year totalled \$674,893,000, compared with \$678,768,000 for the same period in 1951. Livestock and products (\$480,865,000) were lower, and crops (\$194,028,000) somewhat higher than a year earlier. Farm costs increased. Cattle and calves on farms Jan. 1 numbered 2,279,000, 4% more than a year earlier—of the total 1,019,000 were milk cows over two years of age. Hogs (3,137,000) were 97% as high as in 1951. Sheep and lambs (1,249,000) were 15% more than in 1951; chickens (19,433,000) were 6% more numerous.

Manufacturing.—The total value added by manufacture in Ohio in 1950 was \$7,967,482,000, compared with \$6,412,895,000 in 1949, according to the census of manufactures made by the bureau of the census of the United States department of commerce. The average number of production workers in 1950 was 1,167,117, compared with 1,078,746 in 1949, and they were paid wages totalling \$4,166,850,000 in 1950, compared with \$3,585,634,000 in 1949.

Mineral Production.—Table III shows the tonnage and value of those mineral commodities produced in Ohio in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet avail-

Table III.—Mineral Production of Ohio

Mineral	(Short tons, except as noted)			
	1950	Value	1949	Value
Cement (bbl.)	10,512,000	\$24,013,000	10,157,000	\$22,389,000
Clays	4,498,000	8,695,000	4,044,000	7,448,000
Coal	37,761,000	143,853,000	30,961,000	123,053,000
Coke	10,314,000	130,017,000	8,911,000	111,443,000
Ferroalloys*	284,000	28,632,000	196,000	18,725,000
Iron, pig*	12,521,000	530,708,000	10,524,000	430,628,000
Lime	2,142,000	26,273,000	1,712,000	20,321,000
Natural gas (thousand cu.ft.)	43,163,000	8,374,000	46,512,000	8,991,000
Natural gasoline (bbl.)	103,000	344,000	123,000	432,000
Peat	22,000	245,000	20,000	181,000
Petroleum (bbl.)	3,383,000	10,250,000	3,483,000	10,200,000
Salt	2,515,000	5,492,000	2,196,000	5,135,000
Sand and gravel	15,664,000	16,209,000	14,956,000	14,429,000
Stone	20,466,000	28,629,000	19,364,000	27,419,000
Other minerals . . . . .	...	2,195,000	...	2,082,000
Total		\$274,572,000		\$242,080,000

*Values for processed materials are not included in the totals.

able. Ohio ranks first among the states in the production of clays and lime, second in stone and third in salt, and stands 11th in value of mineral output, with 2.32% of the U.S. total. (P. Bx.; X.)

Oil: see PETROLEUM.

Oils and Fats, Vegetable and Animal: see VEGETABLE OILS AND ANIMAL FATS.

Table I.—Leading Agricultural Products of Ohio

Crop	Indicated 1952	1951	Average 1941-50
Corn, bu.	181,917,000	169,536,000	174,250,000
Wheat, bu.	56,700,000	34,308,000	46,908,000
Oats, bu.	46,282,000	49,979,000	42,692,000
Barley, bu.	580,000	494,000	767,000
Rye, bu.	298,000	288,000	727,000
Hay, tons	3,582,000	3,916,000	3,630,000
Soybeans, bu.	21,021,000	21,356,000	20,147,000
Tobacco, lb.	27,165,000	26,222,000	24,160,000
Sugar beets, tons	126,000	127,000	248,000
Maple syrup, gal.	145,000	130,000	174,000
Apples, bu.	2,809,000	4,400,000	3,517,000
Peaches, bu.	836,000	907,000	918,000
Pears, bu.	175,000	200,000	243,000
Grapes, tons	14,000	15,600	13,500
Potatoes, bu.	5,000,000	5,750,000	7,656,000

A west south central state of the United States, **Oklahoma.** Oklahoma was admitted as the 46th state on Nov. 16, 1907. The name "Oklahoma" is from the Choctaw Indian words meaning "red people," and was first applied to the Indian territory in 1866. The popular name "Sooner state" was from the term "sooner" used in referring to a person who entered and staked a claim sooner than the law stipulated when the first public lands in the Indian territory were opened to white settlement by the run for homesteads, April 22, 1889. Area: 69,919 sq.mi., including 888 sq.mi. of water surface. Pop. (1950 census): 2,233,351, a loss of 103,083 or 4.4% since the 1940 cen-

sus. The two largest cities, with 1950 census, are Oklahoma City, the capital, 243,504; and Tulsa, 182,740. Other cities are Muskogee, 37,289; Enid, 36,017; Lawton, 34,757; Norman, 27,006; Shawnee, 22,948; Stillwater, 20,238; Ponca City, 20,180; Bartlesville, 19,228; Okmulgee, 18,317; Ardmore, 17,890; McAlester, 17,878; Ada, 15,995; Chickasha, 15,842.

History.—The chief officers during 1952, all Democrats, were: Johnston Murray, governor; James E. Berry, lieutenant governor; John D. Conner, secretary of state; Wilburn Cartwright, state auditor; Mac Q. Williamson, attorney general; A. S. J. Shaw, state treasurer; Oliver Hodge, superintendent of public instruction; Charles G. Morris, state examiner and inspector; Jim Hughes, commissioner of labour; Buck Cook, commissioner of charities; Donald F. Dickey, commissioner of insurance; Andy Payne, clerk of supreme court; John M. Malloy, chief mine inspector. Oklahoma now has six U.S. congressional seats as provided by the 23rd state legislature in the congressional redistricting act necessitated by loss in the state's population from 1940 to 1950.

Education.—The total enrolment in Oklahoma public schools for the term 1951-52 was 510,276 (elementary and high school), with 19,166 teachers. The total cost of maintaining the elementary and high schools in the state was approximately \$87,000,000. State institutions of higher learning included the University of Oklahoma (Norman) and the Oklahoma Agricultural and Mechanical college (Stillwater), both graduate schools; and Oklahoma College for Women (Chickasha), Panhandle Agricultural and Mechanical college (Goodwell), Langston university (Negro, at Langston), and 6 colleges primarily for teacher training (Ada, Alva, Durant, Edmond, Tahlequah, Weatherford), all state-owned senior colleges. There were 16 two-year junior colleges, of which 7 were state-owned (including the Oklahoma Military academy at Claremore), 3 were independent with church affiliations and 6 were municipal. There were also 6 independent senior colleges with church affiliations. Negroes were admitted for graduate study in the state institutions of higher learning.

Social Insurance and Assistance, Public Welfare and Related Programs.—On Sept. 1, 1952, the Oklahoma department of public welfare reported 94,049 persons receiving old-age assistance, at an average of \$57.72 per month (a total of \$5,428,296); 17,901 dependent children families (14,474 caretakers and 45,869 children), each family receiving an average of \$68.94 (a total of \$1,234,044); and 2,436 blind cases, each receiving an average of \$64.90 (a total of \$158,096). On Sept. 1, 1952, the state department of health reported 48 counties in Oklahoma, representing 80% of the state's population, were covered by full-time local health departments, all of which (27 units) were under full-time medical directors. State-supported institutions included two tuberculosis sanatoriums, eight hospitals (six mental hospitals, one school for mental defectives and one hospital for epileptics), two orphanages, three schools for deaf and blind, four schools of correction, one reformatory and one penitentiary.

Communications.—The summary of disbursements by the state highway commission for construction and maintenance was \$24,146,390.04 for the period Jan. 1, 1952, to Sept. 1, 1952. The highway department was responsible for a highway system of 10,174 mi. in the state, as of Jan. 1, 1952. The total public open road mileage in Oklahoma was approximately 93,000. Railroad and electric mileage approximated 6,000 mi., not including sidings.

Banking and Finance.—The state budget office reported state expenditures at \$289,316,999.45 for the period July 1, 1951, to July 1, 1952; in the same period receipts were \$272,796,999.42. The 23rd state legislature appropriated \$143,489,422.01 for the biennium 1951-52, hence a large part of state income was earmarked. The state debt was \$34,420,000 as of July 1, 1952, arising from the road bond issue of \$36,000,000 voted in the 1950 election to be retired by \$2,600,000 regularly pledged from the cigarette tax.

The Oklahoma bank commissioner reported 199 national banks in the state, with a total deposit of \$1,559,404,000 on June 30, 1952; and 185 state banks, with a total deposit of \$319,878,000. In addition to the banks, 60 savings and loan associations had approximately \$221,000,000 in their savings and loan accounts.

Agriculture.—Oklahoma's wheat production in 1952 reached an all-time high of 108,927,000 bu. The unprecedented drought conditions in the late spring and the summer of 1952 lowered the production of fall harvested crops, the weather bureau records showing the state average precipitation for the period June through September as the lowest for any year since

Table I.—Principal Crops of Oklahoma

Crop	Indicated 1952	1951	Average 1941-50
Wheat, bu.	108,927,000	38,902,000	71,737,000
Corn, bu.	10,152,000	21,156,000	25,052,000
Oats, bu.	8,316,000	4,768,000	20,643,000
Grain sorghums, bu.	4,147,000	16,768,000	9,420,000
All hay, tons	1,503,000	1,799,000	1,715,000
Soybeans for beans, bu.	1,100,000	1,040,000	1,050,000
Peanuts, lb.	50,000,000	114,400,000	106,496,000
Pecans, lb.	5,000,000	25,000,000	19,660,000
Broomcorn, tons	11,800	13,100	11,900
Cotton, bales	215,000	462,000	455,000
Potatoes, bu.	520,000	526,000	1,359,000
Sweet potatoes	158,000	225,000	542,000
Peaches, bu.	247,000	413,000	438,000

Source: U.S. Department of Agriculture.

the records were started in 1892. The livestock and range report for Oct. 1, 1952, showed that the severe drought had brought critical shortage in range feed, hay and other feed crops with very little possibility of winter wheat pasture.

Manufacturing.—The Oklahoma employment security commission reported that the total nonagricultural employment in the state averaged 506,600 persons, including government and small firm employment, for the period Jan. 1, 1952, to June 30, 1952, with 77,200 engaged in manufacturing activities for the same period. Average covered employment in the state for 1951 was 294,800. Wages paid to all covered workers during the same year came to \$951,646,000. Manufacturing employees covered by the Oklahoma Employment Security act averaged 68,700 in 1951, and drew total wages of \$238,088,000. (M. H. W.)

Mineral Production.—Table II shows the tonnage and value of those mineral commodities produced in Oklahoma in 1949 and 1950, listing all items with value exceeding \$100,000. Data for 1951 were not yet available.

Table II.—Mineral Production of Oklahoma

(In short tons except as noted)

	1950		1949	
Mineral	Quantity	Value	Quantity	Value
Clays	315,000	\$ 313,000	244,000	\$ 222,000
Coal	2,679,000	14,567,000	3,022,000	15,242,000
Lead	21,000	5,596,000	20,000	6,275,000
Natural gas (thousand cu ft.)	482,360,000	23,636,000	435,262,000	20,327,000
Natural gasoline (bbl.) .	7,980,000	21,579,000	6,855,000	20,360,000
Petroleum (bbl.) .	164,599,000	423,020,000	151,660,000	388,250,000
Petroleum gases (bbl.) .	6,753,000	8,393,000	5,630,000	8,408,000
Sand and gravel	3,287,000	2,357,000	2,921,000	1,526,000
Stone	5,022,000	4,848,000	4,342,000	4,028,000
Zinc	47,000	13,274,000	44,000	10,920,000
Other minerals . . . . .	...	9,512,000	...	8,706,000
Total		\$527,095,000		\$484,264,000

able. Oklahoma ranks fourth among the states in the production of petroleum and natural gas, and stands sixth in the value of mineral output, with 4.45% of the U.S. total.

Old-Age Insurance: see SOCIAL SECURITY.

Old-Age Pensions: see SOCIAL SECURITY. See also under various states.

Oleomargarine: see VEGETABLE OILS AND ANIMAL FATS.

Olives: see FRUIT.

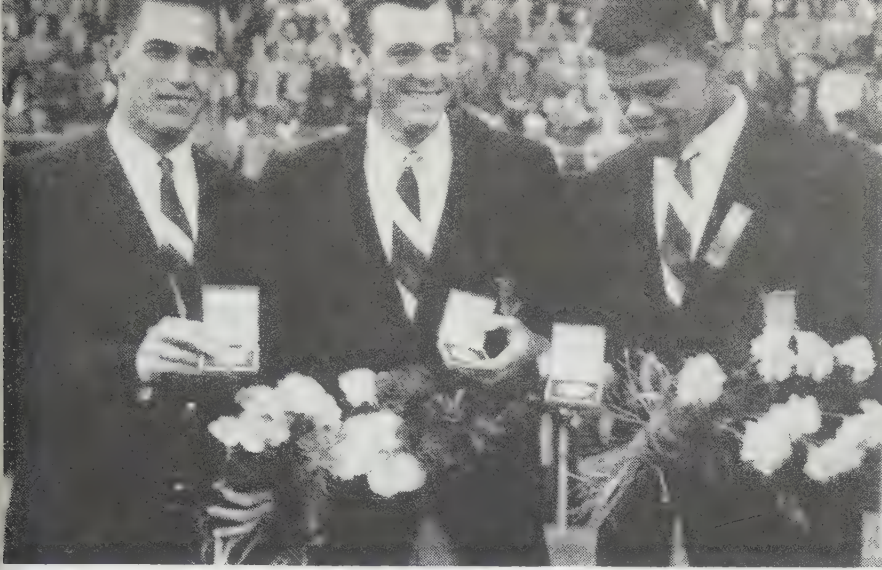
Olympic Games. Finland played host to the greatest sports competition of all time, the XVth Olympiad, in the summer of 1952. The colourful meet attracted a record entry of 5,867 athletes, representing 69 countries, to the stadia and playing fields of Helsinki. Among the nations represented was the U.S.S.R., which took part in the summer Olympic games for the first time since 1912. Although a number of preliminary events had been run off earlier, the games were officially proclaimed opened by Pres. Juho K. Paasikivi of Finland on July 19 as 70,000 persons looked on. The competition was witnessed by considerably more than 1,000,000 spectators, the track and field events alone attracting between 60,000 and 70,000 daily.

Although no team championship was at stake in the Olympics, the United States led in the unofficial scoring with 614 points and the U.S.S.R., with 553½, was second. United States athletes took home 40 gold medals in 12 sports, more than did any other country's entries; Russians won 23.

Table I.—Team Standings, Summer Games, 1952

(Unofficial scoring based on ten points for first place, five for second, four for third, three for fourth, two for fifth and one for sixth)

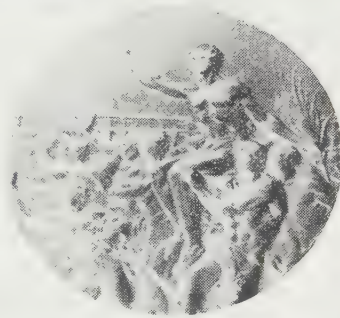
United States	614	Poland	26½
U.S.S.R.	553½	Austria	23
Hungary	308	Egypt	22
Sweden	267	Yugoslavia	22
Germany	170½	New Zealand	19
Finland	162½	Luxembourg	17
Italy	158½	India	17
France	156¼	South Korea	16½
Great Britain	117	Chile	14
Czechoslovakia	113½	Mexico	12
Australia	97	Lebanon	11½
Switzerland	92½	Portugal	10
Japan	71	Trinidad	8
South Africa	67	Uruguay	8
Denmark	58	Ireland	6
Argentina	55	Spain	5
Norway	54	Philippines	4
Netherlands	44	Venezuela	4
Iran	40	Bulgaria	4
Jamaica	39	Cuba	3
Turkey	36¾	Pakistan	3
Belgium	34	Bahamas	2
Rumania	31¾	Greece	1½
Canada	30	Singapore	1
Brazil	30		



Scenes at the summer games of the XVth Olympiad, held in Helsinki, Fin., July 19-August 3, 1952, in which the U.S. ranked first in the unofficial scoring with 614 points and the U.S.S.R. second with 553½ points



Above, left: BOB MATHIAS of the U.S. (centre), winner of the decathlon with a record 7,887 points. Second and third places went to U.S. contestants Milton Campbell (right) with 6,975 points and Floyd Simmons with 6,788 points

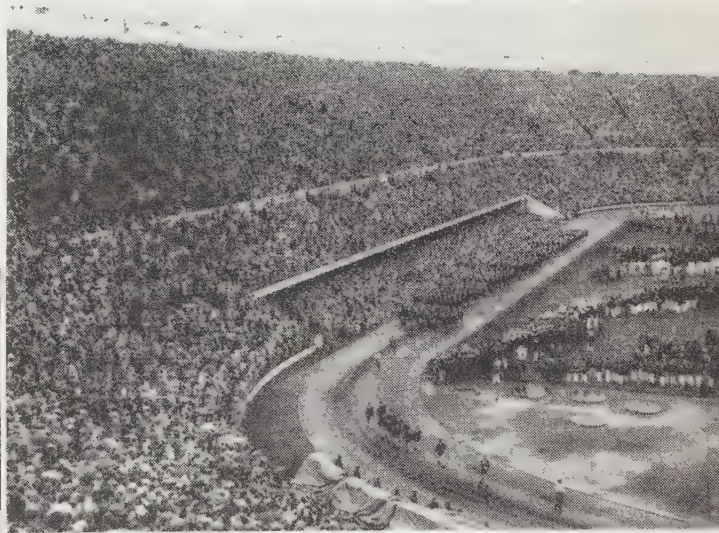


Above, right: OLYMPIC GOLD MEDAL received by each first place winner in an Olympic event (top, obverse side of medal; bottom, reverse side)

Right: TEAMS OF ATHLETES parading around the stadium on the opening day of the games. The Vietnam group is in the foreground, followed by the larger U.S. group. Over the rain-dampened stadium waved the flags of the competing nations

Below, left: U.S. WINNERS in the women's high diving finals. Left to right: Paula Myers, second place; Pat McCormick, gold medal winner for first place; Juno Irwin, third place

Below, right: TORCH KINDLED in Lapland by rays from the midnight sun, and carried by relay to Tornio, Fin., where it was fused with a torch ignited in Olympia, Gr. The latter was then brought to the Olympic stadium in Helsinki to light the Olympic flame



Basketball.—The United States retained laurels in the round-robin series by halting the U.S.S.R., 36-25, in the final after leading by only 17-15 at half time. Clyde Lovellette, with nine points, paced the winners in scoring while Bob Kurland contributed eight tallies. Earlier in the tournament, the U.S. team had beaten the Soviet five, 86-58.

Boxing.—United States fighters, who hadn't won an Olympic title since 1932, not only captured five gold medals and the unofficial team honours, but won a silver cup awarded to the outstanding boxer in the tourney. Norvel Lee, light heavyweight from Washington, D.C., who outpointed Antonio Pacenza of Argentina in his last bout, was chosen as the star of the meet.

Gymnastics.—Twenty-three countries sent a record number of 183 competitors, and Russian men and women won the lion's share of the medals. Victor Tchoukarine was the all-around ace of the Soviet team, winning on the pommel (side) horse and long horse and placing second on the rings and parallel bars as his team tallied 573.60 points. Switzerland was runner-up and the United States placed eighth. Soviet women also led their group with 528.46 points although closely pressed by Hungary with 521.34. The United States women finished 15th.

Rowing.—The U.S. navy's eight wrote a fitting climax to an undefeated season by winning on rain-swept Meilahti gulf on July 23 to give the United States its seventh straight title in Olympic racing for the big shells. The young crew from Annapolis scored by a length and a quarter over a powerful Russian eight. Australia, Great Britain and Germany followed in that order. Charles Logg, Jr., and Tom Price, Rutgers university students, rowed to an upset victory in the event for pairs without coxswain, defeating Belgium's European champions, Michel Knuysen and R. F. L. Baetens, by a length in 8 min. 20.7 sec. A smooth oarsman from Russia, Jurij Tjukalov, won a convincing victory in the single sculls. The 22-year-old star won from Mervyn Wood of Australia, the defending champion and Diamond Sculls titleholder, in 8 min. 12.8 sec.

Swimming.—Every record in the Olympic books was erased in either the preliminary heats or finals as United States mermen captured six events and placed second in the other two. Michigan State's Clark Scholes won the 100-m. free style in 57.4 sec. after a qualifying semifinal of 57.1 sec. that broke Wally Ris's standard of 57.3 sec. set at London in 1948. A team of Wayne Moore, Bill Woolsey, Ford Konno and Jim McLane took the 800-m. relay in 8 min. 31.1 sec. to better another record set by the U.S. at 8 min. 46 sec. in 1948. The 100-m. backstroke went to Yoshinobu Oyakawa of Honolulu in 1 min. 5.4 sec., a time that bettered Adolph Kiefer's 1 min. 5.9 sec. established in 1936. Ford Konno won the 1,500-m. free style in 18 min. 30 sec. to eclipse the record of 19 min. 12.4 sec. set by Japan's Kitamura in 1932. Every man in the final was under the old mark. David Browning of Dallas, Tex., led his teammates to a sweep of the springboard diving medals as Miller Anderson was second and Bob Clotworthy third. Sammy Lee of Fresno, Calif., added another victory off the high platform. Jean Boiteux gained the first triumph France ever attained in men's Olympic swimming when he edged out Konno at 400 m., winning in 4 min. 30.7 sec. compared with the old mark of 4 min. 41 sec. set by Bill Smith in 1948. Konno was clocked at 4 min. 31.3 sec. John Davies of Australia took the 200-m. breast stroke in 2 min. 34.4 sec. All eight finalists in the race had bettered the former record of 2 min. 39.3 sec. in their qualifying trials. Mermaids from Hungary dominated the women's events, their most sparkling triumph coming in the 400-m. relay when they established a new Olympic and world mark of 4 min. 24.4 sec. Mrs. Pat Keller McCormick of Long Beach, Calif., was the only competitor to win two gold medals, defeating Mady Moreau of France and Mrs. Zoe Ann Olsen Jensen in the springboard dive

and leading her teammates, Paula Jean Myers and Mrs. June Stover Irwin, to a sweep of the first three places in high diving.

Track and Field.—A well-balanced squad from the United States scored a smashing victory in men's competition, taking 14 firsts while breaking or equalling 11 Olympic records. However, Emil Zatopek of Czechoslovakia proved himself the greatest distance man of his era and the individual star of the games by capturing three gold medals and setting new standards three times. Zatopek won the 5,000-m. run in 14 min. 6.6 sec. to better the record clocking of 14 min. 15.4 sec. turned in by Herbert Schade of Germany in a qualifying heat. Schade finished third behind France's Alain Mimoun in the final. Then Zatopek annexed the 10,000-m. in 29 min. 17 sec. to improve on the mark of 29 min. 59.6 sec. he had set in 1948 at London. Zatopek capped his performances with a brilliant triumph in the marathon, winning in 2 hr. 23 min. 3.2 sec. to shatter the standard of 2 hr. 29 min. 19.2 sec. established by K. Son of Japan in 1936. Lindy Remigino of the United States was victor in one of the closest finishes of the entire games when he edged out Jamaica's Herb McKenley in the 100-m. dash. Both were timed in 10.2 sec. in a photo finish. Andy Stanfield tied the record of 20.1 sec. as United States runners swept the first three places in the 200-m. dash and Mal Whitfield equalled his own Olympic mark of 1 min. 49.2 sec. as he annexed the 800-m. run. Harrison Dillard clipped .2 sec. off Bill Porter's mark by winning the 110-m. hurdles in 13.7 sec. and Charles Moore captured the 400-m. hurdles in 50.8 sec. to tie the Olympic record he had set in a preliminary heat. Horace Ashenfelter scored a surprise triumph for the United States in the 3,000-m. steeplechase establishing a new time of 8 min. 45.4 sec.

Jamaica's 1,600-m. relay team of Arthur Wint, Les Laing, McKenley and Rhoden bettered both the Olympic and world records as it won in 3 min. 3.9 sec., and Giuseppe Dordoni of Italy shattered all standards for the 50-km. walk when he finished first in 4 hr. 28 min. 7.8 sec. Three other universal marks fell in the field events. Adhemar da Silva, Brazilian, covered 53 ft. 2.59 in. in the hop, step and jump to surpass the world record of 52 ft. 6.30 in. he had set in 1951. Jozef Csermak of Hungary won the hammer throw at 197 ft. 11.67 in., which exceeded both the Olympic and world standards, and Bob Mathias retained his Olympic decathlon crown with an all-time high total of 7,887 points. Mathias was pressed by a young high school athlete from Plainfield, N.J., Milton Campbell, who finished second with 6,975 points. The Zatopek family added another gold medal to its collection when Emil's wife, Dana, annexed the javelin throw at 165 ft. 7.05 in. in the women's competition, a record for the games. Marjorie Jackson, Australian star, gained a double triumph in the dashes and tied the Olympic and world standard of 11.5 sec. in the 100-m. test. United States girls were able to win only one event, the 400-m. relay team of Mae Faggs, Barbara Jones, Janet Moreau and Catherine Hardy setting a new universal record of 45.9 sec.

Winter Games.—Dick Button of Englewood, N.J., gained the first-place votes of all nine judges as he retained his figure skating championship at the VIth Winter Olympiad held in Oslo, Nor. After taking a lead in the compulsory figures, the United States star gave a daring exhibition of free skating at the Bislett stadium to triumph with 192.256 points. Button, the only competitor to keep a title in the winter games, easily defeated Hellmut Seibt of Austria, who was credited with 180.144 tallies. Jeannette Altwegg of Streatham, Eng., captured the first-place medal among the women figure skaters, amassing 161.756 points. Tenley Albright of the United States was the runner-up.

The games, with competition scheduled from Feb. 14 to Feb. 25, 1952, attracted 1,178 entries from 30 countries. Norway, the host nation, scored heavily in skiing and speed skating for

a total of 125½ points to lead all visiting squads for the unofficial team honours. The United States was second. Canada triumphed in hockey with seven victories and one tie, the deadlock at 3-3 coming in a contest with the U.S. six.

Table II.—Team Standings, Winter Games, 1952

(Unofficial scoring of nations based on ten points for first place, five for second, four for third, three for fourth, two for fifth and one for sixth)

Norway	125½	Switzerland	23
United States	89½	Canada	18½
Finland	73	Britain	13
Austria	60	France	10
Germany	50½	Hungary	4
Sweden	29½	Belgium	1
Italy	25	Japan	½
Netherlands	24		

Hjalmar Andersen of Norway was the individual star of the games, taking three speed skating events, two in record time. After winning at 1,500 m., Andersen set an Olympic standard of 8 min. 10.6 sec. for 5,000 m., and then shattered the previous Olympic and world marks by taking the 10,000-m. event in 16 min. 45.8 sec.

Mrs. Andrea Mead Lawrence of Rutland, Vt., took two skiing firsts for the United States for the only double triumph among women competitors. She won both the slalom and giant slalom and became the first American woman ever to win two gold medals in the winter contests.

SUMMER OLYMPIC CHAMPIONS, 1952

Basketball

Team—United States.

Boxing

Team—United States.
Flyweight—Nate Brooks, United States.
Bantamweight—Pentti Hamalainen, Finland.
Featherweight—Jan Zachara, Czechoslovakia.
Lightweight—Aureliano Bolognesi, Italy.
Light-welterweight—Charley Adkins, United States.
Welterweight—Zygmunt Chychla, Poland.
Light-middleweight—Laszlo Papp, Hungary.
Middleweight—Floyd Patterson, United States.
Light-heavyweight—Norvel Lee, United States.
Heavyweight—Eddie Sanders, United States.

Canoeing

10,000-m. Canadian singles—Frank B. Havens, United States, 57 min. 41.1 sec.
10,000-m. Canadian pairs—Georges Turtlier and Jean Laudet, France, 54 min. 8.3 sec.
10,000-m. kayak pairs—Kurt Wires and Yrjo Hietanen, Finland, 44 min. 21.3 sec.
10,000-m. kayak singles—Thorvald Stromberg, Finland, 47 min. 22.8 sec.
1,000-m. kayak singles—Gert Frederiksson, Sweden, 4 min. 7.9 sec.
1,000-m. Canadian singles—Josef Holecck, Czechoslovakia, 4 min. 56.3 sec.
1,000-m. kayak pairs—Kurt Wires and Yrjo Hietanen, 3 min. 51.1 sec.
1,000-m. Canadian pairs—B. Rasch and F. Haunstoft, Denmark, 4 min. 38.3 sec.
Women's 500-m. kayak singles—Sylvia Saimo, Finland, 2 min. 18.4 sec.

Cycling

4,000-m. team pursuit race—Italy, 4 min. 46.1 sec.
1,000-m. scratch race—Enzo Sacchi, Italy, no time given.
2,000-m. tandem—Lionel Cox and Russell Mockridge, Australia, no time given.
1,000-m. time trial—Mockridge, Australia, 1 min. 11.1 sec. (Olympic record).
Road race, individual—André Noyelle, Belgium, 5 hr. 6 min. 3.4 sec.
Road race, team—Belgium, total time 15 hr. 20 min. 46.6 sec.

Equestrian

Dressage, individual—Henri St. Cyr, Sweden.
Dressage, team—Sweden.
Three-day event, individual—Hans von Blixen-Finecke, Sweden.
Three-day event, team—Sweden.
Prix des Nations jumping, individual—Pierre d'Oriola, France.
Prix des Nations jumping, team—Great Britain.

Fencing

Men's foil, individual—Christian d'Oriola, France.
Men's foil team—France.
Men's épée, individual—Edoardo Mangiarotti, Italy.
Men's épée, team—Italy.
Men's sabre, individual—Paul Kovacs, Hungary.
Men's sabre, team—Hungary.
Women's foil—Irene Camber, Italy.

Field Hockey

Team—India.

Modern Pentathlon

Individual—Lars Hall, Sweden, 32 points.
Team—Hungary, 166 points.

Gymnastics, Men

Team—U.S.S.R.
Long horse—Victor Tchoukarine, U.S.S.R.
Horizontal bar—Jack Günthard, Switzerland.
Floor exercises—Karl Thoreson, Sweden.
Rings—Grant Chaguinian, U.S.S.R.
Parallel bars—Hans Eugster, Switzerland.
Pommel horse—Tchoukarine.
Individual combined—Tchoukarine.

Gymnastics, Women

Team—U.S.S.R.
Beam exercises—N. Botcharova, U.S.S.R.
Floor exercises—N. Botcharova.
Horse vault—Ekaterina Kalinhouk, U.S.S.R.

Eight exercises—Marie Gorokhovskaja, U.S.S.R.
Parallel bars—Marjit Korondi, Hungary.
Team exercises with hand equipment—Sweden.

Rowing

Single sculls—Jurij Tjukalov, U.S.S.R., 8 min. 12.8 sec.
Double sculls—T. Cappozzo and E. Guerrero, Argentina, 7 min. 32.2 sec.
Pairs without coxswain—Charles Logg and Tom Price, United States (Rutgers) 8 min. 20.7 sec.
Pairs with coxswain—France, 8 min. 28.6 sec.
Fours without coxswain—Yugoslavia, 7 min. 19.2 sec.
Fours with coxswain—Czechoslovakia, 7 min. 33.4 sec.
Eight oars with coxswain—United States (Navy) 6 min. 25.9 sec.

Shooting

Free pistol—Huelet Benner, United States, 553 points.
Clay pigeon—George Genereux, Canada, 192 points.
Small-bore rifle, all-around—E. Kongshaug, Norway, 1,164 points.
Running deer—John Larsen, Norway.
Free rifle—Anatoli Bogdanov, U.S.S.R., 1,123 points (Olympic record).
Silhouette—Karoly Takacs, Hungary, 579 points.
Small-bore rifle, prone—I. Sarbu, Rumania, 400 points.

Swimming, Men

100-m. free style—Clark Scholes, United States, 57.4 sec.
800-m. free style relay—United States team of Wayne Moore, Bill Woolsey, Ford Konno and Jim McLane, 8 min. 31.1 sec. (Olympic record).
400-m. free style—Jean Boiteux, France, 4 min. 30.7 sec. (Olympic record).
100-m. backstroke—Yoshinobu Oyakawa, United States, 1 min. 5.4 sec. (Olympic record).
200-m. breast stroke—John Davies, Australia, 2 min. 34.4 sec. (Olympic record).
1,500-m. free style—Ford Konno, United States, 18 min. 30 sec. (Olympic record).
Springboard dive—David Browning, United States, 205.29 points.
High dive—Sammy Lee, United States 156.28 pts.

Swimming, Women

100-m. free style—Katalin Szoke, Hungary, 1 min. 6.8 sec.
200-m. breast stroke—Eva Szekeley, Hungary, 2 min. 51.7 sec. (Olympic record).
100-m. backstroke—Joan Harrison, South Africa, 1 min. 14.3 sec.
400-m. free style—Valerie Gyenge, Hungary, 5 min. 12.1 sec. (Olympic record).
400-m. free style relay—Hungary, 4 min. 24.4 sec. (Olympic and world record).
Springboard dive—Mrs. Pat McCormick, United States, 147.30 points.
High dive—Mrs. Pat McCormick, United States, 79.37 points.

Track and Field, Men

100-m. dash—Lindy Remigino, United States, 10.4 sec.
200-m. dash—Andy Stanfield, United States, 20.7 sec. (tied Olympic record).
400-m. run—George Rhoden, Jamaica, 45.9 sec. (Olympic record).
800-m. run—Mal Whitfield, United States, 1 min. 49.2 sec. (tied own Olympic record set in 1948).
1,500-m. run—Joseph Barthel, Luxembourg, 3 min. 45.2 sec. (Olympic record).
3,000-m. steeplechase—Horace Ashenfelter, United States, 8 min. 45.4 sec. (Olympic record).
5,000-m. run—Emil Zatopek, Czechoslovakia, 14 min. 6.6 sec. (Olympic record).
10,000-m. run—Zatopek, 29 min. 17 sec. (Olympic record).
Marathon—Zatopek, 2 hr. 23 min. 3.2 sec. (Olympic record).
110-m. hurdles—Harrison Dillard, United States, 13.7 sec. (Olympic record).
400-m. hurdles—Charles Moore, United States, 50.8 sec. (tied Olympic record he set in preliminary heat).
400-m. relay—United States team of Dean Smith, Dillard, Remigino and Stanfield, 40.1 sec.
1,600-m. relay—Jamaica team of Arthur Wint, Les Laing, Herb McKenley and Rhoden, 3 min. 3.9 sec. (Olympic and world record).
50-km. walk—Giuseppe Dordoni, Italy, 4 hr. 28 min. 7.8 sec. (Olympic and world record).
10,000-m. walk—John Mikaelsson, Sweden, 45 min. 2.8 sec. (Olympic record).
High jump—Walt Davis, United States, 6 ft. 8.32 in. (Olympic record).
Broad jump—Jerome Biffle, United States, 24 ft. 10.03 in.
Pole vault—Bob Richards, United States, 14 ft. 11.14 in. (Olympic record).
Hop, step and jump—Adhemar da Silva, Brazil, 53 ft. 2.59 in. (Olympic and world record).
Hammer throw—Jozef Csermak, Hungary, 197 ft. 11.67 in. (Olympic and world record).
Shot-put—Parry O'Brien, United States, 57 ft. 1.43 in. (Olympic record).
Discus throw—Sim Iness, United States, 180 ft. 6.85 in. (Olympic record).
Javelin throw—Cy Young, United States, 242 ft. 7.9 in. (Olympic record).
Decathlon—Bob Mathias, United States, 7,887 points (Olympic and world record).

Track and Field, Women

100-m. dash—Marjorie Jackson, Australia, 11.5 sec. (tied Olympic and world record).
200-m. dash—Marjorie Jackson, 23.7 sec.
80-m. hurdles—Mrs. Shirley Strickland de la Hunty, Australia, 10.9 sec. (Olympic and world record).
400-m. relay—United States team of Mae Faggs, Barbara Jones, Janet Moreau and Catherine Hardy, 45.9 sec. (Olympic and world record).
Javelin throw—Mrs. Dana Zatopek, Czechoslovakia, 165 ft. 7.05 in. (Olympic record).
Broad jump—Yvette Williams, New Zealand, 20 ft. 5.66 in. (Olympic record).
High jump—Ester Brand, South Africa, 5 ft. 5¾ in.
Discus throw—Nina Romaschkova, U.S.S.R., 168 ft. 8½ in. (Olympic record).
Shot-put—Galina Zybina, U.S.S.R., 50 ft. 2.58 in. (Olympic and world record).

Water Polo

Team—Hungary.

Weight Lifting

Bantamweight—Ivan Udodov, U.S.S.R., 694 lb. (Olympic record).
Featherweight—Rafael Chimishkyan, U.S.S.R., 743½ lb. (Olympic and world record).
Lightweight—Tommy T. Kono, United States, 798¾ lb. (Olympic record).
Middleweight—Peter George, United States, 881½ lb. (Olympic record).
Light heavyweight—T. Lomakin, U.S.S.R., 920¼ lb.
Middle heavyweight—Norbert Schemansky, United States, 980¾ lb.
Heavyweight—John Davis, United States, 1,013¾ lb. (Olympic record).

Wrestling, Free Style

Flyweight—Hassen Gemic, Turkey.
Bantamweight—Shohachi Ishii, Japan.
Featherweight—Bayram Sit, Turkey.
Lightweight—Olle Anderberg, Sweden.
Welterweight—Bill Smith, United States.
Middleweight—David Cimakuridze, U.S.S.R.
Light heavyweight—Wiking Palm, Sweden.
Heavyweight—Arsen Mekokishvili, U.S.S.R.

Wrestling, Graeco-Roman

Flyweight—Boris Gourevitch, U.S.S.R.
Bantamweight—Imre Hados, Hungary.
Featherweight—Jakov Pounkine, U.S.S.R.
Lightweight—Chasame Safine, U.S.S.R.
Welterweight—Miklos Szilvasi, Hungary.
Middleweight—Axel Gronberg, Sweden.
Light heavyweight—Kolpo Grandahl, Finland.
Heavyweight—Ioganes Kotkas, U.S.S.R.

Yachting

Star class—"Merope," Italy.
 Finn class—Denmark.
 Dragon class—"Pan," Norway.
 5.5-m. class—"Complex II" (B. F. Chance), United States.
 6-m. class—"Llanoria" (H. F. Whiton), United States.

WINTER OLYMPIC CHAMPIONS, 1952

Bobsledding

Two-Man—Germany's No. 1 team, Andreas Ostler and Lorenz Nieberl, 5 min. 24.54 sec.
 Four-Man—Germany's No. 1 team, Ostler, Nieberl, Fritz Kuhn, Franz Kemser, 5 min. 07.83 sec.

Figure Skating

Men—Dick Button, United States, 192.256 points.
 Women—Jeannette Altwegg, Great Britain, 161.756 points.
 Pairs—Ria and Paul Falk, Germany, 11.400 points.

Ice Hockey

Team—Canada.

Skiing, Men

Jumping—Arnfinn Bergmann, Norway, 226 points.
 Slalom—Othmar Schneider, Austria, 2 min.
 Giant slalom—Stein Eriksen, Norway, 2 min. 25 sec.
 Downhill—Zeno Colo, Italy, 2 min. 30.8 sec.
 Nordic combined (jump and race)—Simon Slattvik, Norway, 451.621 points.
 18-km. race—Halgeir Brenden, Norway, 1 hr. 1 min. 34 sec.
 40-km. relay—Finland's team, Heikki Hasu, Paavo Lonkila, Urpo Korhonen, Tapio Mäkelä, 2 hr. 20 min. 16 sec.
 40-km. race—Veikko Hakulinen, Finland, 3 hr. 33 min. 33 sec.

Skiing, Women

Slalom—Mrs. Andrea Mead Lawrence, United States, 2 min. 10.6 sec.
 Giant slalom—Mrs. Lawrence, 2 min. 6.8 sec.
 Downhill—Gertrude Jochum-Beiser, Austria, 1 min. 47.1 sec.
 10-km. race—Lydia Wideman, Finland, 41 min. 40 sec.

Speed Skating

500 m.—Ken Henry, United States, 43.2 sec.
 1,500 m.—Hjalmar Andersen, Norway, 2 min. 20.4 sec.
 5,000 m.—Andersen, 8 min. 10.6 sec. (Olympic record).
 10,000 m.—Andersen, 16 min. 45.8 sec. (Olympic record).

(T. V. H.)

Oman and Muscat (Masqat): see ARABIA.

Ontario. Second largest province of Canada, Ontario joined the confederation in 1867. Area: 412,582 sq.mi. Pop. (1951) 4,597,542, of which 70.7% were urban. Capital: Toronto (1951) 675,754.

History.—Louis Orville Breithaupt, former federal member of parliament, succeeded Ray Lawson, industrialist, as lieutenant governor of Ontario during 1952. The first session of the 21st provincial legislature passed much important legislation, including laws to aid private industry to combat the housing shortage, to provide loans to aid young farmers, to ease rural housing, to give provincial assistance for construction of homes for the aged and to pay grants in lieu of taxes to municipalities for government offices. A special session of the legislature was held in October during which the federal-provincial tax agreement was ratified, steps were taken to provide reparations for those suffering property loss or damage through the proposed St. Lawrence Seaway and Power project, and the legislature was given more direct control over specific highway projects. During the first six months of 1952, 98,057 immigrants came to Canada, of which 52,472 settled in Ontario.

Education.—The drift of low-paid rural teachers to higher-salaried city jobs, and a rising enrolment (an increase of 108,952 in the 1947-52 period) forced the hand of the department of education. The rural teacher shortage was overcome by training grade 12 high school students in a special ten-week course to handle elementary-grade teaching.

Health and Welfare.—Pensions of \$40 per month were made available to totally and permanently disabled persons between the ages of 18 and 65.

Transportation and Communication.—The highway improvement act was amended to give the legislature power to vote all monies to be used by the highways department, and a highway reserve account was created within the consolidated revenue account to which such appropriations could be credited. The move was designed to speed up and intensify Ontario's highway improvement program. Radio-telephone service between snowplowing crews and headquarters was initiated over all of southern Ontario to encourage greater use of the 10,000 mi. of highways kept open during the winter. A total of \$92,000,000 was spent on 1951-52 highway improvements, and \$96,000,000 was budgeted for 1952-53.

Finance.—Gross ordinary provincial revenue for the fiscal year ending March 31, 1952, compared with estimates for the same year in parentheses: \$304,966,000 (\$265,980,000). Gross ordinary expenditures for the same period, with the same comparison: \$304,070,000 (\$265,382,000). Heaviest 1951-52 expenditures were as follows: education, \$67,888,000; health, \$44,980,000; welfare, \$25,507,000.

Agriculture.—Farm output was worth a record \$1,274,357,000 in 1951, or \$150,000,000 more than in 1950.

Industry.—In the 1946-52 period, 504 new manufacturing companies employing ten or more men each came into existence; the gross value of production in 1946 was \$3,755,000,000, in 1950 it was \$8,627,000,000. In July 1952 the employment index was 195.7 compared with 100 in 1939, while average weekly earnings were \$56.36 compared with \$24.45.

BIBLIOGRAPHY.—Margaret Avison, *History of Ontario* (1952). (C. Cy.)

Opera: see MUSIC.

Ophthalmology: see EYE, DISEASES OF THE.

Oranges: see FRUIT.

Oregon. A state of the United States, located in the Pacific northwest, Oregon was admitted Feb. 14, 1859, as the 33rd state. Area: 96,981 sq.mi. including 666 sq.mi. of water. Pop. (1950 census) 1,521,341, an increase of 39.6% from 1940. Capital: Salem (43,140); chief city: Portland (373,628).

History.—In politics the state usually has voted Republican, though Franklin D. Roosevelt carried the state in each election when he was a candidate for president. In the Republican primaries in May 1952, the vote favoured Gen. Dwight D. Eisenhower for the Republican nomination for president.

In November the electorate voted on 18 measures on the state ballot, of which 11 were constitutional amendments, 5 legislative bills referred to the people and 2 legislative bills initiated by the people.

Elective state officials (administrative) in 1952 included: governor, Douglas McKay; secretary of state, Earl T. Newbry; treasurer, Walter J. Pearson; attorney general, George Neuner; labour commissioner, W. E. Kimsey; superintendent of public instruction, Rex Putnam.

Education.—Enrolment in public schools during the school year 1950-51 was 294,328, including 68,793 enrolled in high schools. For the school year 1950-51 professional personnel employed in the public schools numbered 12,263 and the average salary was \$3,367. Total operating expenditures for the year were \$70,480,974. Per capita cost per pupil in average daily attendance was \$273.

Enrolment at 8 state institutions of higher learning in the year 1951-52 was 14,227 and an additional 11,023 were enrolled in the extension division of the state system of higher education. Total operating expenditures of the state system for the year ending June 30, 1952, were \$14,314,114.

Social Insurance and Assistance, Public Welfare and Related Programs.—Expenditures of the public welfare program (general assistance, old-age assistance, aid to the blind, to dependent children, to child-caring institutions, special services and administration) amounted to \$29,161,034 for the fiscal year ending June 30, 1952.

Payments for unemployment compensation in the year ending June 30, 1952, were \$13,889,242. The number of inmates in ten state health, corrective and eleemosynary institutions was 8,209 on June 30, 1952. Operating costs for the year were: two mental hospitals \$3,756,063; two tuberculosis hospitals \$978,982; Fairview home for feeble-minded \$1,236,193; penitentiary \$1,236,340; MacLaren school for boys (Woodburn) \$456,366; Hillcrest school for girls \$195,317; deaf school \$300,671; blind school \$141,427. Expenditures of the commission for the blind were \$134,174 for the year ending June 30, 1952.

Communications.—Steam railway mileage in the state as of Dec. 31, 1951, was 3,528, not including second main track and sidings, and was operated by 24 common carriers. Electric railway mileage as of the same date was 37, operated by 1 carrier.

As of Dec. 31, 1951, Oregon had 7,311 mi. in its state system of highways, of which 6,899 mi. were surfaced. Total mileage in the county road system as of that date was 30,950 of which 17,425 were surfaced. Expenditures of the state highway department for the fiscal year ending June 30, 1952, were \$46,809,782.

For that year, there were 624,784 passenger cars and 86,067 trucks and 1,719 buses registered in the state.

The number of telephone stations in service on Dec. 31, 1951, was 451,172, with 226 telephone exchanges.

Banking and Finance.—The state bonded debt as of July 1, 1952, was \$116,385,590; net debt \$83,300,375. The gross debt of municipal subdivisions on July 1, 1950, was \$182,062,915 and the net debt was \$143,488,000.

Table I.—Principal Crops of Oregon

Crop	Indicated 1952	1951	Average 1941-50
All wheat, bu.	30,568,000	28,999,000	2,350,000
Oats, bu.	9,718,000	7,395,000	9,753,000
Barley, bu.	10,350,000	10,110,000	9,565,000
Corn, bu.	1,188,000	1,092,000	1,310,000
Potatoes, bu.	12,060,000	11,220,000	10,960,000
Hay, tons	1,815,000	1,551,000	1,865,000
Apples, bu.	2,800,000	2,330,000	2,766,000
Pears, bu.	5,584,000	4,997,000	4,929,000
All prunes, tons	46,600	59,800	71,070
All cherries, tons	20,600	20,400	23,170
Peaches, bu.	647,000	400,000	576,000
Hops, lb.	16,510,000	18,774,000	16,464,000

Source: U.S. Department of Agriculture.



INDIANS spear-fishing for salmon at Celilo falls on the Columbia river, Ore. Exclusive Indian treaty rights to fish in the falls were lost when the Dalles power dam was begun in 1952, since the area was to be flooded to form a 50-mi. lake

1958. Total state revenues for the fiscal year ending June 30, 1952, were \$580,092,380. Total assessed valuation, equalized, of taxable real and personal property in the state as of Jan. 1, 1952, was \$1,835,390,117. Total bank deposits on Sept. 5, 1952, were \$1,647,182,051. On that date there were 20 national banks with 89 branches and 50 state banks with 20 branches.

Agriculture.—Estimated cash receipts from farming for the year 1951 were \$434,437,000, which included \$3,352,000 in government payments. Receipts from crops were \$223,213,000 and from livestock and animal products \$207,872,000.

Manufacturing.—Lumbering is the principal manufacturing activity in Oregon. This state ranks first in the volume of lumber production, which in 1951 amounted to 8,884,745,000 board feet. Plywood production in 1951 was 1,189,408,743 sq.ft., three-eighths inch basis. (C. A. Sp.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in Oregon in 1949 and 1950, listing all items with value exceeding \$100,000. Data for 1951 were not yet available. Oregon

Table II.—Mineral Production of Oregon

(Short tons, except as noted)

Mineral	1950		1949	
	Quantity	Value	Quantity	Value
Gold (oz.)	11,058,000	\$ 387,000	16,226,000	\$ 568,000
Pumice	80,000	321,000	104,000	273,000
Sand and gravel	8,200,000	8,168,000	7,135,000	7,682,000
Stone	3,837,000	5,559,000	4,397,000	6,479,000
Other minerals . . . . .	...	7,107,000	...	6,843,000
Total		\$21,542,000		\$21,845,000

ranks 38th among the states in the value of mineral output, with 0.18% of the U.S. total.

Organization for European Economic Cooperation:
see INTERNATIONAL TRADE; MUTUAL SECURITY PROGRAM.

Organization of American States. The Organization of American States was established pursuant to the charter signed at Bogotá, Col., in 1948 at the ninth International Conference of American States. The organization, which represented the most recent step in the development of the system of inter-American relations, had its inception in 1890 when the first conference met in Washington, D.C. Its purpose is to achieve an order of peace and justice, promote American solidarity, strengthen collaboration among the member states and defend their sovereignty, independence and territorial integrity. In Dec. 1951 Colombia became the 14th state to deposit its ratification and thereafter the charter entered into full force and effect. The

organization functions through six organs: the Inter-American conference; the Meeting of Consultation of Ministers of Foreign Affairs; the Council of the Organization; the Pan American Union; the specialized conferences; and the specialized organizations.

The Inter-American conference is the supreme organ of the organization. It decides general action and policy and determines the structure and functions of the organization. The conference did not meet in 1952, but preparations were begun for the tenth conference which was scheduled to meet in Caracas, Venez., in 1953. The government of Venezuela by decree of March 14, 1952, established a general secretariat for the conference, and the Council of the Organization prepared a draft regulation which was submitted to the member states for observation and comment. The council also began preliminary work on the program of the conference.

The Meeting of Consultation of Ministers of Foreign Affairs is convened whenever problems arise of urgent nature and of common interest to the member states. No meeting was held in 1952, but various agencies of the organization were active in giving effect to the resolutions adopted at the Meeting of Foreign Ministers held in Washington, D.C., in 1951. That meeting was called to consider the aggressive policy of international communism and the measures that should be taken by the American republics to meet it. The Inter-American Defense board continued its study of measures relating to military co-operation for the defense of the Americas. The Pan American Union completed a study of the legislation enacted and the measures adopted by the American republics for their internal security; and the Inter-American Economic and Social council and the Pan American Union undertook a series of studies relating to emergency economic co-operation.

The council is the permanent executive body of the organization. It is composed of one representative from each member state and has its seat at the Pan American Union in Washington, D.C. The council takes cognizance, within the limits of the charter and inter-American treaties and agreements, of any matter referred to it by the Inter-American conference or the Meeting of Consultation of Ministers of Foreign Affairs.

During 1952 the Council of the Organization continued its study of the structural development of the inter-American system. An agreement was concluded with the Inter-American Commission of Women whereby this agency was recognized as an inter-American specialized organization. In May 1952 an agreement was also signed with the Food and Agricultural Organization of the United Nations. The agreement was similar to that previously signed with the United Nations Educational, Scientific and Cultural organization and the International Labour organization, and provided for co-operative relations between the regional and world organizations. The council also formulated standards to govern the establishment of co-operative relations between the Organization of American States and nongovernmental organizations, and adopted a series of measures for the establishment of such relations.

The council also exercises general supervision over the functioning of the Pan American Union. In that capacity it approves the budget of the union and during 1952 made provision for a complete study and reclassification of the positions within the Pan American Union.

By the terms of the charter, three technical councils collaborate with the Council of the Organization: the Inter-American Economic and Social council; the Inter-American Council of Jurists; and the Inter-American Cultural council.

The Inter-American Economic and Social council has its seat at the Pan American Union in Washington, D.C., and has for its principal purpose the promotion of the economic and social

welfare of the American nations. During 1952 the Economic and Social council undertook a series of studies relating to scarce materials and products in accordance with decisions taken in 1951 at the fourth Meeting of Consultation of Ministers of Foreign Affairs. It also sponsored a program of technical co-operation which was to be carried out with the co-operation of the member states. Technical assistance projects were initiated in the field of agriculture with the co-operation of the Inter-American Institute of Agricultural Sciences; in public health and sanitation through the co-operation of the Pan American Sanitary bureau; in child welfare with the collaboration of the International American Institute for the Protection of Childhood; in housing and co-operatives through the Pan American Union; and in statistical education with the co-operation of the Pan American Union and the Inter-American Statistical institute.

The Inter-American Cultural council and the Inter-American Council of Jurists meet at periodic intervals. No meeting of either council was held in 1952 but during that year the Committee for Cultural Action, the permanent committee of the Cultural council, was set up in Mexico City and began to carry out studies agreed upon at the 1951 meeting of the council. The Inter-American Juridical committee, which is the permanent committee of the Inter-American Council of Jurists, has its seat in Rio de Janeiro, Braz., and during the year prepared a series of studies on international law.

The Pan American Union is the general secretariat and the permanent central organ of the organization. In that capacity and through its several technical and administrative subdivisions it services the other organs of the organization. It also makes studies and issues a variety of reports on economic, social, cultural and legal matters.

Of the Inter-American specialized organizations, the Pan American Institute of Geography and History, the Pan American Sanitary bureau and the Inter-American Commission of Women held meetings during the year. Inter-American conferences were also held to deal with a variety of subjects including copyright protection, travel promotion, public health and sanitation, social security, statistical education, municipal co-operation and library services.

(W. MR.)

Osteopathy: see MEDICINE.

Ottawa. The capital of Canada, at the confluence of the Ottawa-Gatineau-Rideau rivers, in the province of Ontario, covers 28,134 ac.; pop. (1951) 202,045, with 281,908 in the metropolitan area. In 1951 there were 268 industries in the city, employing 10,641 workers who received \$23,000,000 in wages and turned out \$82,000,000 worth of goods. Financing of the city's services continued to increase in cost. In 1952 the tax rate for public schools was 53.75 mills compared with 52.25 mills for 1951, and for separate schools 62.33 mills compared with 59.90 mills in 1951. Assessments also increased. Expenditures for 1952 were estimated as follows: general purposes, \$6,620,143; interest and principal on debentures, \$1,027,058; public libraries, \$158,172; civic hospital, \$509,517; public schools, \$2,430,088; collegiate institutes, \$1,595,487; separate schools, \$876,276. The city ended its March 31, 1951, financial year with a net surplus of \$115,835. Much construction was under way by mid-1952: trunk sewers, water mains, and housing topped the \$7,000,000 mark, and an additional \$3,000,000 was scheduled for street improvements. The federal government bore a share of the debenture costs for works arising out of a direct development of the national capital plan. The city decided to spend \$1,200,000 to install domestic water meters in an effort to reduce water consumption to 80 gal. per

capita per day (instead of 120 gal.) so as to postpone construction of a \$5,000,000 addition to the city water filtration plant. (C. CY.)

Outdoor Advertising: see ADVERTISING.

Outer Mongolia: see MONGOLIAN PEOPLE'S REPUBLIC.

Pace, Frank, Jr. (1912-), U.S. government official. He received a bachelor's degree from Princeton university in 1933 and a law degree from Harvard university in 1936. In that year he became assistant district attorney in the 12th judicial district in Arkansas. From 1938 to 1940 he was general counsel of the Arkansas state department of revenue. During World War II he served in the air transport command, reaching the rank of major.

In 1946 he was made a special assistant in the U.S. department of justice, dealing with tax matters; in May 1946, executive assistant to the postmaster general; in Jan. 1948, assistant director of the bureau of the budget, and in Jan. 1949, director of that bureau. Late in March 1950 he was nominated secretary of the army. Secretary Pace, in Korea at the time Gen. Douglas MacArthur was relieved of his command, was revealed to have been charged with the responsibility of telling General MacArthur in advance, but was said in subsequent congressional testimony not to have received the information in time to do so before the public announcement.

Pace disclosed on May 8, 1952, that the U.S. army had developed a new atomic artillery weapon. On Aug. 13 he visited Marshal Tito in Yugoslavia, and reportedly discussed a plan for joint Greek-Yugoslav defense in case of attack by a soviet satellite.

Pacific Islands, British. Under this heading are grouped the crown colonies and protectorates administered by the high commissioner for the western Pacific and the governor of Fiji. Included are the colony of Fiji, the Gilbert and Ellice Islands colony, the British Solomon Islands protectorate, the protected state of Tonga and the Anglo-French condominium of the New Hebrides (*q.v.*). Areas: Fiji 7,040 sq.mi.; Gilbert and Ellice Islands 375 sq.mi.; Solomon Islands 11,500 sq.mi.; Tonga 250 sq.mi. Populations: Fiji (1946 census) 259,638, (1951 est.) 298,000; Gilbert and Ellice Islands (1947 census) 36,000, (1951 est.) 39,000; Solomon Islands (1951 est.) 101,000; Tonga (1951 est.) 48,000. Chief town: Suva (capital of Fiji), pop. (1946 census) 25,395. High commissioners for the western Pacific (1952): Sir Leslie Brian Freeston and (from July 3) Robert Stanley. Governors of Fiji, Sir Leslie Brian Freeston and (from Oct. 6) Sir Ronald Garvey. Ruler of Tonga, Queen Salote Tupou.

History.—A very severe storm struck the Solomon Islands on Jan. 25, 1952, and did a great deal of damage including the destruction of those wharf facilities at Honiara that had survived World War II. A temporary port was opened at Tulagi, and Gizo was also opened for ocean-going vessels. The Gilbert and Ellice Islands had an outbreak of poliomyelitis between February and May but only a few cases were fatal. On April 1 the administrative separation of the Western Pacific High commission from Fiji came into force, the high commissioner assuming responsibility for the Gilbert and Ellice Islands, the Solomons and the New Hebrides condominium; at the same time responsibility for Pitcairn and Tonga was transferred to the governor of Fiji.

The new high commissioner arrived in Fiji in July and left shortly afterward for a tour of the islands.

A severe hurricane also struck the Fijian islands on Jan. 28, wind speeds at times exceeding 150 knots. At least 13 people

were killed and Suva was extensively damaged. Sugar and banana crops suffered heavily and the gold mines were put out of production for several weeks. Food supplies, however, remained adequate and prompt assistance was given from overseas, particularly by New Zealand. Both the New Zealand and the British governments sent gifts of £10,000 to help to meet the cost of repairing the damage, the extent of which was estimated at more than £1,000,000. The 1st battalion, the Fiji regiment, consisting entirely of volunteers, arrived in Malaya in January and very soon established an excellent reputation in the war against the Communists. During the year, for the first time, five Fijian girls were admitted as students to the Central medical school.

(K. G. B.)

Education.—*Solomon Islands*: 1 government school at Auki; several mission schools. *Gilbert and Ellice Islands*: free compulsory education to 16; 234 primary schools (4 government, remainder mission), 8,108 pupils. *Tonga*: free compulsory education to 14; 132 primary, 10 secondary schools; 1 teacher training college. *Fiji*: 427 primary schools (48,000 pupils); 2 secondary schools; 2 technical schools (2,000 pupils); teachers' training college and Central medical school. Many pupils are sent from Gilbert and Ellice Islands and Tonga to Fiji and New Zealand for higher education.

Finance and Trade.—Currency: Australian pound, with local notes in Tonga only (£A1=U.S. \$2.24); Fijian pound (£F1=U.S. \$2.52).

	Revenue (1952 est.)	Expenditure (1952 est.)	Imports 1951	Exports 1951
<i>Solomon Islands</i>	£A480,508	£A460,949	£A800,872	£A916,511
<i>Gilbert and Ellice</i>	365,755	270,971	192,582	425,922
<i>Tonga</i>	443,832	443,832	889,373	1,388,564
<i>Fiji</i>	£F3,820,067	£F3,818,349	£F9,368,137	£F6,413,576

Main exports: copra; phosphate of lime (Gilbert and Ellice Islands); bananas (Tonga); gold and silver (Fiji).

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Pacific Islands, French. Under this heading are grouped two overseas territories of the French union and the Anglo-French condominium of the New Hebrides (*q.v.*). Areas and populations are:

	Area (sq.mi.)	Population 1936 est.	1951 est.
<i>New Caledonia and dependencies</i>	7,654	53,245	63,000
<i>French Settlements in Oceania</i>	1,545	43,962	60,000

Population, *New Caledonia* proper (6,533 sq.mi.) and dependencies (1946): Melanesian with Polynesian admixtures; Europeans 18,737, mostly French; Javanese 8,600; Annamese immigrants 4,100. Seat of commissioner general: Nouméa (pop., 1946 est., 10,466). Commissioner general for the Pacific ocean in 1952, Raoul Angammaré.

The French Settlements in Oceania consist of the Society Islands (the largest of which is Tahiti), the Marquesas, Tuamotu and other smaller islands. Pop.: Polynesian, majority Christian; Europeans (1946) 1,700 (including 900 French and 500 British); Chinese immigrants 6,390. Seat of governor: Papeete (pop., 1946 est., 12,428) on Tahiti. Governor in 1952, R. Petitbon.

History.—New Caledonian affairs had previously been controlled by the general council which consisted of white colonists. The granting of electoral rights to the natives under the 1946 constitution seemed likely to change things considerably. But despite long debates in the national assembly in Paris in 1952, the composition of the future territorial assembly remained undecided: some wanted a double-college electoral system, others a single-college one. The single-college system prevailed in the French Settlements in Oceania.

Because many Javanese workers had been repatriated at the request of the Indonesian government, New Caledonia contemplated the introduction of 2,000 Japanese to work in the mines.

An international conference on South Pacific fisheries was held at Nouméa, the seat of the South Pacific commission. In the New Hebrides a French ethnologist investigated the interior of Mallicolo Island, previously unexplored.

Modernization work was in progress at Papeete. A complete

map of Tahiti and the Sous-le-Vent Islands was completed. (See also FRENCH UNION.)

Education.—Pupils and students (1952): *New Caledonia*, primary 10,000, secondary 500, technical 130, bursaries in France 35; *Oceania*, primary 11,500, secondary 300, technical 100, bursaries in France 23.

Finance and Foreign Trade.—(1951) *New Caledonia*: imports 1,027,000,000 fr. C. F. P. (including 450,000,000 fr. from the French union and 275,000,000 fr. from Australia); exports 688,000,000 fr. C. F. P. (including 500,000,000 fr. to the French union), mainly nickel, chrome and coffee. *Oceania*: imports 700,000,000 fr. C. F. P. (including 282,000,000 fr. from the U.S. and 208,000,000 from the French union); exports 643,000,000 fr. C. F. P. (including 440,000,000 fr. to France), mainly copra and phosphates. Monetary unit: franc C. F. P. (Colonies Françaises du Pacifique)=5.50 metropolitan francs. In 1952, the exchange rate was 350 metropolitan francs to the U.S. \$1.

Mining.—(Metric tons, 1951): nickel ore 252,000; chrome ore 88,000; manganese ore 20,000; phosphates 230,000. (Hu. De.)

Pacific Islands under Trusteeship: see MARSHALL, CAROLINE AND MARIANA ISLANDS; TRUST TERRITORIES.

Painting. Increasing opportunities for international cultural exchange in the arts were noticeable in 1952. Exhibitions of modern painting crossed national boundaries in greater number, and international conferences on the arts contributed to the spread of common understandings.

In the United States there was the usual quota of exhibitions of contemporary European painting. The major accomplishment was the Matisse retrospective, shown in New York, N.Y., Cleveland, O., Chicago, Ill., and San Francisco, Calif., and accompanied by a comprehensive and definitive catalogue of the life and work of Henri Matisse by Alfred H. Barr. The Cézanne exhibition, shown in Chicago and New York, made an important contribution to the understanding of the "father of modern painting." A retrospective exhibition of Wassily Kandinsky was presented by the Boston Institute of Contemporary Art and later travelled to other cities. The Carnegie International, consisting of 300 paintings from 23 nations, opened in Pittsburgh, Pa., on Oct. 16. After touring European countries to select the paintings, the director of the Carnegie institute remarked that "the exhibition is preponderantly abstract, since the wave of abstraction has struck all countries."

The 26th Venice Biennale international exhibition, June 14 to October 19, provided a comprehensive view of the vigorous Italian school, which was characterized by a preponderance of abstraction interspersed with communistic "social realism." Major prizes for painting were given to Felice Casorati, Bruno Cassinari and Bruno Saetti. The French painting section featured Raoul Dufy, who received the President's prize, Fernand Léger, Chaim Soutine and Henri de Toulouse-Lautrec. Germany stressed *Die Brücke* movement and Emil Nolde received a major prize. The Dutch section showed *De Stijl*. England emphasized Graham Sutherland and Edward Wadsworth. The United States presented only Edward Hopper, Yasuo Kuniyoshi, Stuart Davis and the sculptor Alexander Calder. Austria featured Alfred L. Kubin and Belgium Constant Permeke.

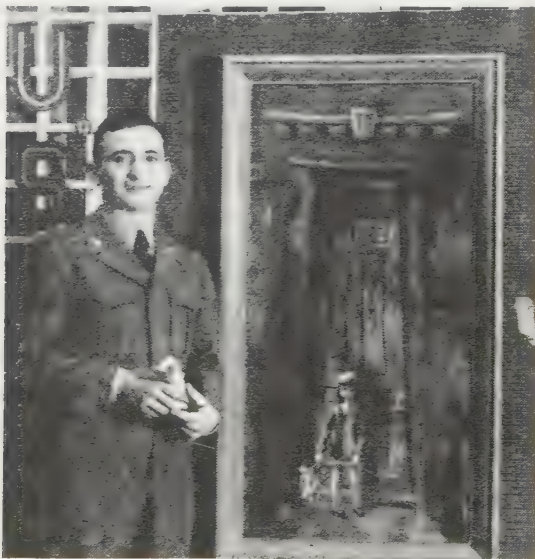
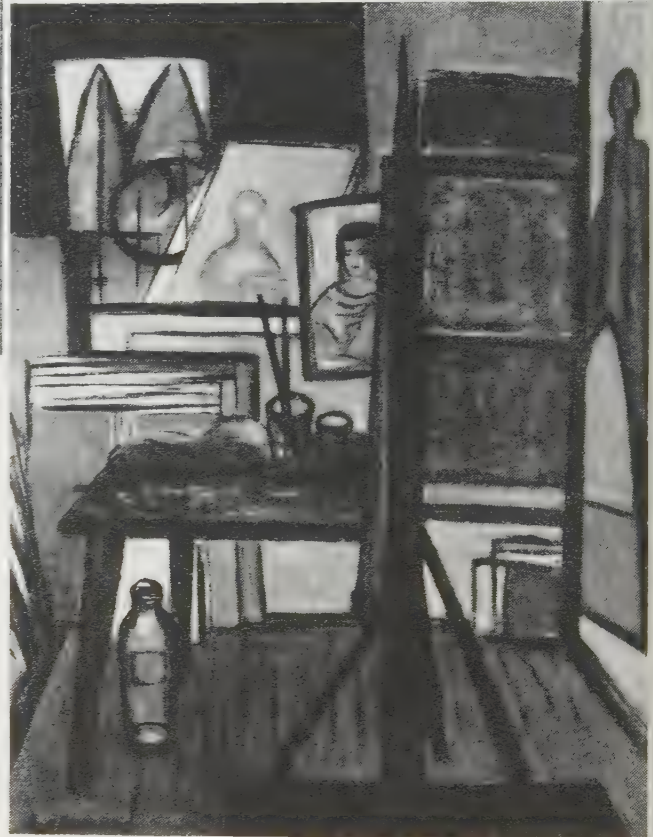
In connection with the Venice Biennale, a first international conference of artists was sponsored in September by U.N.E.S.C.O. (the United Nations Educational, Scientific and Cultural organization) "to study the practical conditions required to ensure the freedom of the artist." The section on painting was led by Georges Rouault and Jacques Villon.

In Paris a Festival of the Arts, sponsored by the Congress for Cultural Freedom, was organized in May to show the extent and quality of creative activity in the nontotalitarian nations. Simultaneously, an exhibition of "Masterpieces of the Twentieth Century," assembled from collections in the United States, was presented by the Musée de l'Art Moderne in Paris and later at the Tate gallery in London. A comprehensive exhibition of Mexican art was shown at the same Paris gallery in July and in the fall in Stockholm, Swed. In Salzburg, Aus., the Cultural



Left: EDITH HALPERT, director of the Downtown gallery, New York city, with four of the nine painters whose work was exhibited at the gallery in a 1952 show titled "Recent Arrivals." The nine young artists were selected by Mrs. Halpert during a cross-country search for new talent

Below: "STUDIO INTERIOR," by Paul Mommer, awarded the gold medal of the Audubon Artists during their exhibit at the National Academy of Design, New York city, early in 1952



Above: PRIVATE PAUL CALLE, and his painting, "Sad-eyed Little Girl," which won first prize for painting in a world-wide U.S. army art competition. Few of the entries dealt with army life or with abstractions: prize-winning pictures went on tour in the U.S. in 1952

Below: EXHIBITION of contemporary U.S. and European paintings from the private collections of U.S. business and professional men, held at the Dallas Museum of Fine Arts, Texas, in April 1952



festival in August included an exhibition of "Prints by American Artists Under Forty," which was subsequently shown at the Secession gallery in Vienna.

In February Paris had an opportunity to see 20 American *avant-garde* painters selected by Sidney Janis. The reaction of the Paris critics was generally adverse, implying immaturity and failure to comprehend modern art. In the United States this criticism seemed insincere to many, while others considered American painters neither inferior to nor very different from their French colleagues. With the increasing cultural interchange between Europe and America, the current "expressionistic abstraction" had become an international style; and the ever more widespread participation in painting had levelled off the product at a competent average, with no significant young leaders apparent in any country and no world centre of art.

The Museum of Modern Art in New York continued to foster the *avant-garde* movement in American painting with an exhibition entitled "Fifteen American Painters and Sculptors," emphasizing such artists as Jackson Pollock, Mark Rothko, Clyfford Still, William Baziotes and Bradley Walker Tomlin.

One of the best of the annual cross-section exhibitions of contemporary American painting was presented by the University of Illinois, Urbana. It revealed the more vigorous aspects of current production and was accompanied by public lectures, an impressive catalogue and \$7,500 in purchase prizes.

Although critic Dorothy Drummond found the 147th annual of the Pennsylvania Academy of the Fine Arts a "fairly true cross-section of United States art today," she reflected the views of many in observing that both the representational and abstract work manifested "its own brand of monotony." Yesterday's monotony, she stated in the *Art Digest*, is in the "paint-what-you-see" school, while today's "constant repetition—even of explosive forms, colors, and thoughts—breeds its own sameness."

While most exhibitions of contemporary American painting were overwhelmingly abstract or semiabstract, the director of the California Palace of the Legion of Honor in San Francisco, who toured the country to pick its fifth annual exhibition, stated, "There will be rather more representational art than previously and rather less of the non-objective or abstract. This reflects a trend that has become noticeable, to my eye, in American painting in general."

The *Philadelphia Inquirer* brought suit against the Barnes foundation of Merion, Pa., to compel it freely to admit the general public to its Museum of Modern Art, in view of its tax-free status. The corporation, founded by Albert C. Barnes, owned about 1,000 works of art valued at \$25,000,000, including about 200 Renoirs, 100 Cézannes, 75 Matisse and 35 Picassos. The suit received general support from art organizations and periodicals and from museum directors, critics and professors, many of whom claimed to have been excluded from visiting the collection. (See also ART EXHIBITIONS; ART SALES; MUSEUMS; SCULPTURE.) (L. D. L.)

Paints and Varnishes.

Paint production in the United States in 1952 was estimated at about the same as the corrected 1951 sales value of \$1,360,000,000. Trade sales paints and enamels continued in high volume while industrial finishes suffered a decline in the last half of the year, partly because of the steel strike. Sales of water-thinned paints continued to expand. Prices of paints had increased about 9% during the past four years.

Raw material shortages eased considerably. The supply of phthalic anhydride was improved by attaining part of the expansion goal of 60% or 140,000,000 lb. There remained, however, shortages of tin for paint containers and glycerine. Expanded

production of pentaerythritol and sorbitol offset in large measure the shortage of glycerine for paint vehicles.

As a result of the interest in odourless paint, many major oil companies offered odourless hydrocarbon solvents based on synthesis by alkylation. Aerosol bomb dispensers for paint, which were first introduced in early 1949, expanded to a sale of about 7,000,000 bombs in 1952. Industrial spraying of paint was benefited by the introduction of a high pressure, 300 lb. to 600 lb. per square inch spraying system, using no air and thereby minimizing the formation of overspray.

Blistering of house paint because of moisture moving outward through the wood against the paint became so widespread that the industry directed a major campaign to educate the public on moisture barriers and wall space ventilation. Failure of wall paints on some types of new plaster was found to be caused by exceptional slowness in cure or carbonation of plaster having a high content of magnesia.

New paint raw materials included cerium and zirconium driers to supplement scarce cobalt and the other established driers. Dibasic acids for plasticizers were scheduled for production by direct ozone oxidation of oleic acid. Rapidly increasing production of epoxylines resins from epichlorohydrin and dihydric phenols was further advanced by the on-the-job introduction of rapid air drying catalysts through a two-nozzle spray gun. These resins gained favour for high chemical and corrosion resistance.

A high shear viscosimeter measured in mass the viscosity decrease caused by the high shear developed in the ordinary brushing of paint. Another publication announced a hardness tester in which a sapphire tip was pressed by a fixed weight into a paint film on a rigid surface and the indentation measured with a sensitivity of .1μ through its attachment to and movement of the centre plate of a three-plate electrical condenser.

The scientific section of the industry's trade association promoted an industry-wide colour aptitude testing program for its scientists and technicians. (Jo. C. W.)

Pakistan.

A self-governing member of the Commonwealth of Nations, Pakistan is a federation of 5 provinces, 12 states and tribal areas. Areas and populations are shown in the table on the following page.

STUDENTS being trained in atmospheric physics in Pakistan, where research was being conducted on artificial rain-making as a possible aid in solving water shortage problems in arid parts of the country



Provinces and states*	Area (in sq.mi.)	Population (1951 census)	(1941 census)
Sind	50,443	4,619,000	4,175,500
Khairpur state	6,050	320,000	
West Punjab	62,987	18,814,000	15,800,000
Bahawalpur state	15,918	1,820,000	
North-West Frontier Province:			
(a) Settled districts	13,815	3,239,000	3,038,100
(b) Tribal areas	27,242	2,460,000	2,500,000
Baluchistan	52,900	622,000	857,800
Baluchistan states	81,239	556,000	
Karachi, federal capital	812	1,118,000	359,500
Total, West Pakistan	311,406	33,568,000	26,730,900
East Pakistan (East Bengal)	54,501	42,119,000	41,880,000
Total	365,907	75,687,000	68,610,900

*Excluding Jammu and Kashmir.

Languages: Urdu, Punjabi, Sindhi, Pushtu, Baluchi and Gujarati in West Pakistan and Bengali in East Pakistan; English used for higher education. Religion: Moslem (72.9%); Sikh, Hindu, Christian, Parsee and other minorities. Chief towns (1951 census, prelim.): Lahore (849,000); Dacca (401,000); Rawalpindi (243,000); Multan (190,000); Lyallpur (180,000); Sialkot (152,000); Chittagong (126,000); Gujranwala (124,000); Peshawar (114,000). Governor general in 1952, Ghulam Mohammed; prime minister, Khwaja Nazimuddin.

History.—There was no serious disturbance of Pakistan's political stability and progress in 1952. The policy of co-operation in the Commonwealth of Nations and of cultural alliance with other Islamic countries was continued. The work of framing the final constitution went on. The constituent assembly had distributed the initial work among several committees, including one on basic principles, whose objective—to find a correct synthesis of the Islamic and modern secular states—necessitated a careful approach. The assembly therefore decided to invite suggestions from the public on the committee's first report. Many suggestions were received and considered. The delay in settling the constitution and electing a new central legislature had not prevented the assembly adopting such interim measures as the introduction of adult suffrage for the election of reformed provincial assemblies. The second election to be held on the new franchise was that in the North-West Frontier Province, the former centre of the Pathan separatist movement, and resulted in a remarkable victory for the government; 67 out of 85 seats were won by Moslem league candidates, including 2 women. In April 1952 the assembly prepared the way for an election in East Bengal by an enactment increasing the number of seats in the provincial assembly and abolishing the representation of special interests. On another question, whether Bengali as well as Urdu should be made an official language of Pakistan, a decision was postponed. The assembly had under consideration the report of a committee on constitutional reform in Baluchistan. Meanwhile the Baluchistan states, Kalet, Las-Bela and Kharan, agreed in April to amalgamate into a union with a legislative assembly and a council of rules assisted by a council of ministers.

Relations with India.—Any real improvement in relations with the Indian republic was prevented by the prolongation of the Kashmir dispute and the deep resentment which this nourished. There were other matters of dissension in connection with prepartition assets and liabilities, and in the legacy of difficulties left by the mass migrations, among them the problem of the disposal of the property of evacuees. There was, however, a continuance of the facilities for trade which had resulted from India's acceptance of the valuation of the Pakistan rupee and from the trade agreement of Feb. 1951. The latter remained in force till June 30, 1952, and was followed by a new agreement for the period to June 1953, signed in Aug. 1952. The basis of this differed somewhat from previous agreements in that it was not confined to certain scheduled commodities, but contemplated that licences for imports from, or exports to, the sterling or other soft-currency areas would also

be valid for trade between India and Pakistan; it also provided for the export of specified quantities or values of some scheduled commodities, including timber, railway material and certain types of machinery and categories of iron and steel from India and hides, skins and fish from Pakistan. But these special provisions did not include Indian coal or Pakistan jute, the two most important single items in the previous agreement. During the year ended June 1952 Pakistan had a large favourable balance in its trade with India.

Economic Position.—The first year of the national development program, which was incorporated in the Colombo plan, ended in June 1952. This six-year program was under constant review in the light of requirements and resources, but its general scope may be gauged from its original form, which was estimated to cost Rs. 2,600,000,000 divided between agriculture (32%), the three heads of transport, industry and fuel and power (totalling 57%) and supplementation of provincial provision for social welfare (11%). It included many large and long-term projects (involving preparatory work on surveys and detailed planning) such as irrigation and land settlement, 3 major hydroelectric power schemes and 6 jute and 24 cotton mills. But the speedier satisfaction of minimum requirements was provided for by giving priority to urgent specific items of the program, including some of the jute and cotton mill projects, and the expansion of thermal power pending completion of hydroelectric schemes. Moreover in 1952 there was already in some directions a modest measure of achievement; two smaller hydroelectric stations started functioning at Rasul in the Punjab and at Malakand in the North-West Frontier Province, where a third was nearing completion; a start was made with jute manufacture, and the original small cotton textile capacity had been doubled. For financing the first year of the program some external assistance was available from contributions under the Colombo plan, a loan of \$27,000,000 for railways from the International Bank for Reconstruction and Development and an offer of \$10,000,000 from the U.S. under the Mutual Security program; but the great bulk of the finance was found from internal loans subscribed during 1948–50, from normal revenues and from surpluses accruing during the boom and set aside for development. The government encouraged the use of private capital in industry by numerous fiscal concessions, and in the 1952 budget exempted from tax personal incomes (up to a generous maximum of total income) invested in industrial concerns. It also enlarged the sphere of state initiative by establishing an industrial development corporation which participated in new undertakings where large investment was required. The budget, presented in March by the new finance minister, Mohammed Ali, showed a surplus for the year 1951–52 of Rs. 76,000,000.

The economic misfortunes of 1952 included a partial failure of the wheat crop resulting from drought; not only was there no surplus, but considerable quantities had to be imported. The main trouble, however, was the recession in world commodity prices. Cotton prices began to give way in February, and in the summer the government, which in March had announced a policy of support, had to purchase some of the new crop which failed to find a market. The export duty on tea was reduced by the budget; and jute was also supported by government purchases and reductions of export duties, but this valuable export was severely hit not only by the general recession but by such special factors as the increasing use of substitutes and the development of jute production in India. The general position continued to deteriorate and led the government to impose credit restrictions, import controls and an increase in the duty on cloth. The report of the state bank for the year ended June 30, 1952, showed a reduction of Rs. 467,000,000 in the

gold, sterling and dollar reserves as a result of that year's transactions. The report emphasized the difficulty of the situation facing Pakistan, but expressed confidence that it could be overcome. (See also INDIA; UNITED NATIONS.) (J. WN.)

Education.—*Baluchistan.*—Schools (Oct. 1949): primary 186; secondary 23; private 4; European 2; institutions of higher education 1; total pupils 18,500. *North-West Frontier Province.*—Recognized educational institutions (1947-48): for males 1,059, students 101,377; for females 156, students 11,035. *Sind.*—Schools (March 1946): boys' primary 2,327, pupils 165,653; girls' primary 398, pupils 40,257; secondary: for boys 206, pupils 34,810; for girls 37, pupils 9,262. Universities in Pakistan (1949-50): mainly teaching 2 (Dacca and Punjab), students 34,101, professors and lecturers 287; mainly affiliating 2 (Peshawar and Sind), central professorial and supervisory staff c. 20.

Finance and Banking.—Budget: (1950-51 actual) ordinary revenue Rs. 1,237,000,000, ordinary expenditure Rs. 947,000,000; (1951-52 est.) ordinary revenue Rs. 1,163,000,000, ordinary expenditure Rs. 955,000,000. Internal debt (March 1951): Rs. 952,000,000. Currency circulation (July 1952): Rs. 2,103,000,000. Bank deposits (July 1952): Rs. 1,154,000,000. Gold and foreign exchange (July 1951): U.S. \$597,000,000. Monetary unit: Pakistan rupee, with an exchange rate of Rs. 9.27 to the pound sterling and Rs. 3.31 to the U.S. dollar.

Foreign Trade.—(Year beginning April 1, 1951) Imports: Rs. 1,931,000,000, exports: Rs. 2,302,000,000. Main sources of imports (April-September 1951): Japan 28%; U.K. 21%; India 9%; U.S. 6%. Main destinations of exports: India 35%; U.K. 13%; France 10%; U.S. 5%. Main imports (April-September 1951): cotton yarns and manufactures 42%; machinery and vehicles 17%. Main exports: raw jute 41%; raw cotton 31%; tea 4%; hides and skins 4%.

Transport and Communications.—Roads (1949): 55,913 mi. Licensed motor vehicles (Dec. 1950): cars 17,000, commercial vehicles 12,000. Railways (1950): 6,994 mi.; passenger-miles 5,456,000,000; freight ton-miles 2,500,000,000. Shipping (1951): merchant vessels of 100 tons and more 2,201; total gross tonnage 5,816,585. Air transport (1949-50): miles scheduled per week 136,030. Telephones (1951): 18,771. Radio receiving sets (1949): 75,000.

Agriculture.—Main crops (metric tons, 1951): rice 11,820,000; wheat 4,016,000; barley (1952) 164,000; maize 396,000; sugar, raw value, excluding palm sugar production (1952) 573,000; jute (1952) 1,148,000; cotton, ginned (1950) 253,000; linseed (1950) 10,000; rapeseed and mustard seed (1949) 282,000; sesame (1949) 34,500; chick-peas (1951) 700,000; tea (1950) 23,800; tobacco (1949) 66,800. Livestock (1947-48): cattle 24,296,000; buffaloes 5,600,000; goats 10,067,000; sheep 6,145,000; camels 454,000; horses 470,000; mules 41,000; geese 61,000; chickens 22,248,000; ducks (1949) 5,063,000. Wool production, clean basis (1951): 6,000 metric tons. Meat production (1950): 264,000 metric tons. Milk production (1949): 5,917,000 metric tons. Fisheries (1949-50): total catch 250,000 metric tons.

Industry.—Employment (1949): all industries 662,000; manufacturing 200,000. Fuel and power: coal and lignite (1951) 516,000 metric tons; crude oil (1951) 152,000 metric tons; electricity (1950) 164,400,000 kw.hr. Raw materials: chromite (1950) 18,700 metric tons; salt (1948) 339,000 metric tons. Manufactured goods (1951): cotton yarn 8,800 metric tons; cotton cloth 116,800,000 m.

Palaeontology. **Vertebrate.**—*General.*—The study of fossil vertebrate animals enjoyed significant progress during 1952. Extensive field explorations in many parts of the world continued. Success in a constant search for improved aids both for the mechanical preparation of fossils and for the handling of data was realized. The cumulative results, as revealed by a review of the annual bibliography, showed a gratifying increase of new and revised factual information as well as of subjective interpretation.

Fishes.—Based on materials chiefly obtained from an excavation made for the Firestone library at Princeton university, Bobb Schaeffer monographed the Triassic coelacanth, *Diplurus*, and discussed the general evolution of the Coelacanthini. The conclusions of this work prompted the same writer subsequently to investigate the rates of structural change and of taxonomic divergence of both this and the group of lung fishes during the long geologic interval from the Devonian to the Recent period. An important revisionary study of the early Devonian cephalaspids from Utah was undertaken by R. H. Denison in which was elaborated evidence of at least limited growth of the exoskeleton among certain of the Osteostraci. Other contributions to the historical and morphological knowledge of the fishlike vertebrates included: a report of upper Devonian arthrodires from the central mineral district of Texas (D. H. Dunkle and J. A. Wilson); a roentgenographic examination of the primitive Devonian fish *Lunaspis* verifying the macropetalichthyid affinities of the form (W. M. Lehman); a description of new ma-

terials of the late Palaeozoic xenacanthid sharks (N. Hotton); and a report of catfish remains from the late Tertiary of Austria (E. Thennius).

Amphibians.—In a paper on Upper Devonian vertebrates from eastern Greenland, which also described a new genus of rhipidistian fish, E. Jarvik defined a new family of ichthyostegoid amphibians and presented detailed observations on the postcranial skeleton of *Ichthyostega*. These oldest known tetrapods were shown to be intermediate between fishes and amphibians in a number of basic morphological characters. However, because of certain endocranial specializations unknown in any post-Devonian tetrapods, they were postulated to be blind phyletic offshoots of an older labyrinthodont stem. In his sixth contribution on the faunas of the Permian Vale and Choza formations of Texas, E. C. Olsen statistically analyzed skull materials of the horned amphibian *Diplocaulus*.

Reptiles.—The early tetrapod and fish fauna of Clear Fork age (Permian) served as the basis of a critical analysis by E. C. Olsen of the interrelated changes of speciation through time and varying environmental conditions. Ernest Williams described the skull of a staurotypine turtle from the early Oligocene and discussed the geologic range of all the known Chelydridae. Recently questioned by K. A. Kermack, the long-held belief that the giant sauropod dinosaurs of the Mesozoic era were chiefly amphibious in habit was defended on morphological and analogous grounds by E. H. Colbert. F. von Huene recognized a new ichthyosaur from middle Triassic sediments of Germany and P. E. Vanzolini studied various snake and lizard remains from the Lower Miocene of Florida.

Birds.—Morphological comparisons made by J. T. Gregory indicated that the presumed mandibles of *Ichthyornis* were actually those of an immature mosasaur. Their association with the type of skeletal restoration of this rare Cretaceous bird was therefore considered erroneous. In useful systematic practice Pierce Brodkorb designated for the first time types for 29 genera of fossil birds originally defined by K. Lambrecht.

Mammals.—An important publication by C. Couto dealt with early Tertiary marsupial remains from Brazil. F. Takai presented a graphical summary of the mammalian fauna of eastern Asia coupled with a discussion of the probable relationships of the continents of the northern hemisphere from Triassic to Recent times. Other studies of interest included a report by J. A. Wilson and others of the discovery of Palaeocene and Eocene mammals in Texas; additions to the Pleistocene fauna of Kansas and Oklahoma by C. W. Hibbard and G. Rinker; and an account by E. E. Williams of the faunal succession of sub-Recent fossils from Jamaica, W.I.

Great interest was again manifest in fossil primates. In this connection a number of contributions were concerned with the remains of associated contemporaneous animals (D. A. Hooijer, M. J. Noerrien and others). (D. H. D.)

Palaeobotany.—The year 1952 witnessed an unusual number of contributions to the existing knowledge of fossil plants. Rudolf Florin presented an excellent summary of the knowledge of the Chinese conifer *Metasequoia*. This was discovered in rocks of Tertiary age by the Japanese botanist Shigeru Miki and described in 1941. A few years later Chinese botanists published the results of their discovery of this tree (related to the modern redwood and bald cypress) living in central China. This sequence of events, the finding of a plant first as a fossil several million years old, later recognized as an element of modern flora, was most unusual. Its interest, however, was by no means confined to students of palaeobotany since the *Metasequoia* is a large and attractive deciduous conifer. Seeds had been distributed to horticulturists in many parts of America and Europe and reports indicated that the tree might prove to

be hardy through much of this area. Ralph Chaney completed a restudy of the redwood and cypress fossil remains from western North America and showed that many of them were those of *Metasequoia*, a true living fossil.

A new theory was presented by Daniel Axelrod, an authority of western Tertiary floras, to explain the origin of angiospermous (flowering) plants. The flowering plants constitute the dominant element of modern vegetation. Their origin, suddenly and in abundance, in rocks of Cretaceous age has been one of the puzzles of natural history. Discoveries of the remains of their supposed ancestors from pre-Cretaceous rocks have been few and have given no substantial clues as to the origin of this great group. Axelrod presented reasons which suggested that the angiosperms were in existence in upland tropical regions as early as Permo-Triassic times.

Several notable contributions were made as a result of continued studies of the petrified plants found as coal balls in the central American coal fields. Two seeds were described, one from Illinois and the other from Kansas, which displayed new preservation of even the most delicate tissues. Several new coenopterid ferns were described from the same source. These were of importance since they were members of a primitive complex which probably gave rise to certain seed plants and several families of true ferns. Recently rather abundant remains of articulate stems and cones had also been reported from coal balls. These were distant relatives of the modern horsetails (*Equisetum*) and they formed a significant element of the American Carboniferous floras.

Referring to ferns of more recent times, it may be noted that two species of *Osmunda* had been described from the Eocene of Oregon. Members of this (cinnamon fern) family are known to have originated in late Palaeozoic times and are of particular interest because they compose an important element of modern flora. The cinnamon, interrupted and royal ferns are especially common in the eastern United States.

The *Manual of Phycology* (Chronica Botanica Co., 1951) included a chapter on fossil algae by Harlan Johnson which briefly summarized existing knowledge of this group. Certain of the algae, like the corals, are of great importance as rock builders.

An event of particular importance in palaeobotany during the year was the announcement by the palaeontology and stratigraphy branch of the U.S. geological survey that the *Compendium Index* of fossil plant names had been made available in microfilm copies. This index was a nearly complete compilation of names applied to fossil plants from 1820 to 1950 and was accompanied by an extensive bibliography of palaeobotanical literature. (See also BOTANY.)

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Palestine: see ISRAEL; JERUSALEM; JORDAN; UNITED NATIONS.

Panamá. A republic on the isthmus joining the continents of North and South America, Panamá is bounded on the north by Costa Rica and on the south by Colombia, and is bisected by the Panama Canal Zone, which is leased to the United States. Area: 28,575 sq.mi.; pop. (1950 census of the Americas): 805,000, both exclusive of the Canal Zone. The capital is Panamá city (146,117 in 1949); other principal cities are Colón (54,334), David (13,656) and Santiago (6,944). Language: Spanish; religion: predominantly Roman Catholic.



PANAMÁ CITY policeman who was unseated when his horse slipped on corn kernels scattered by rioting students. The students were demanding an extension of the school term, in Feb. 1952, to make up for time lost during a two-month teachers' strike

Presidents in 1952: Alcibiades Arosemena until Oct. 1; thereafter Col. José Antonio Remón (*q.v.*).

History.—Following the chaotic events of 1951, Panamanian politics moved toward a more stable keel in 1952. Former Pres. Arnulfo Arias, who was forcibly deposed in 1951, was released from prison on Feb. 7 on condition that he never hold public office in Panamá again. On March 28 the Federal Trust company, which Arias had closed the year before in an action which precipitated his ouster, reopened its doors. Thereafter, Panamanians prepared for the presidential election held on May 11. The proadministration candidate was Colonel Remón, who had led the coup which unseated Arias. Remón had two major political assets—the loyalty of the 3,300-man national police, Panamá's only armed force; and the political activity of his wife, Cecelia, whose campaigning was reminiscent of Argentina's Eva Perón. Two other candidates entered the presidential race. These were Roberto Francisco Chiari, standard-bearer of the Civil Alliance, and Pedro Moreno Correa, the Conservative candidate. Election day, May 11, was relatively peaceful. According to the official returns, Remón received 133,208 votes as against 78,094 cast for Chiari and 1,957 for Moreno Correa. Accordingly, Remón was inaugurated as Panamá's new president on Oct. 1. (G. I. B.)

Education.—In the school year 1951–52 there were 904 public primary schools with 3,153 teachers and 110,038 pupils, 20 secondary schools with 718 teachers and 15,963 students and 7 vocational schools with 253 teachers and 5,552 students. In addition, there were 70 private primary schools with 200 teachers and 5,544 students and 57 secondary schools with 292 teachers and 5,474 students. The national university had 1,805 students. About 25% of the 1952 budget was earmarked for education.

Finance.—The monetary unit is the balboa, at par with the U.S. dollar. The national budget for 1951 (continued in effect during 1952) estimated ordinary expenditure at \$33,464,433 and revenue at \$33,463,354. Additional expenditures of \$700,564 had been authorized by May 31, 1952. Total expenditure in 1951 was \$34,480,984; revenue, \$34,479,981. The national debt on Dec. 31, 1951, totalled \$34,574,125, of which \$10,946,902 was external and \$23,627,223 internal. The cost of living index (food, Panamá city) stood at 95 in Aug. 1952 (1948=100).

Trade and Communications.—Domestic exports in 1951 totalled \$11,690,008; imports, \$66,121,893. Chief exports were bananas (48%), abacá (10%) and cacao (8%). The leading customers were the U.S. (81%), Venezuela (5%) and El Salvador (5%); leading suppliers were the U.S. (69%), the Canal Zone (7%), the United Kingdom (4%) and Canada (2%). The traditionally adverse balance of trade is generally offset by invisible exports to the Canal Zone in the form of tourist expenditures,

sales to ships and wages of Panamanians employed there.

Railroad mileage is 223. Highways in 1949 totalled 1,071 mi., of which 348 mi. were paved. According to *Lloyd's Register of Shipping*, the merchant marine consisted of 607 vessels (100 tons and over) aggregating 3,609,395 gross tons on June 30, 1951.

Agriculture.—Exports of bananas in 1951 were 4,896,776 bunches, almost all of which went to the U.S. Exports of other export crops included abacá 2,984 metric tons and cacao 1,327 tons. Production of rice (rough) was about 85,000 tons in 1951-52. The 1950 census showed 576,488 cattle and 198,511 pigs.

Manufactures.—Production figures in 1951 included beer 14,695,960 l.; rum 756,665 l.; sugar 16,600 short tons. In 1951, 74,755,000 kw.hr. of electric energy were generated in Panamá city and 13,408,000 kw.hr. in Colón. (J. W. Mw.)

Panama Canal Zone. A United States military reservation embracing a ten-mile strip across the Isthmus of Panama, leased for the protection and administration of the Panama canal, the Panama Canal Zone has an area of 553 sq.mi., including 191 sq.mi. of fresh water. Population, exclusive of uniformed military personnel (1950 census): 52,822. Administrative centre: Balboa Heights (pop., 1950: 363). Governors in 1952: Brig. Gen. Francis K. Newcomer; (from May 27) Brig. Gen. John S. Seybold.

History.—During 1952 considerable attention was devoted to economic development in the Canal Zone. Extensive plans were formulated for an International Commercial exposition, to open in Feb. 1953. The exposition was expected to focus attention on the zone's facilities, and to attract new commercial and industrial enterprises to the area. Brig. Gen. Newcomer's term of office as governor expired during the year and Pres. Harry S. Truman appointed Brig. Gen. John S. Seybold to succeed him. Seybold was sworn in on May 27 and took office on June 9. (G. I. B.)

Education.—In Feb. 1951 there were for white students 14 schools with an enrolment of 4,368 students and a junior college with an enrolment of 149 daytime students. For nonwhite students there were 13 schools with an enrolment of 3,592, and a junior college.

Finance.—Total canal revenues for the fiscal year 1950-51 were \$24,121,068.26; net expenses, \$22,731,829.15; and net capital investment as of June 30, 1951, \$626,708,619.65. During the year 5,593 ships (300 net tons and over) aggregating 27,180,425 canal net tons passing through the canal carried cargo of 30,073,022 long tons and paid tolls of \$23,906,082. Of the cargo carried, 11,132,472 tons were east to west and 18,940,550 tons west to east. Canal net tonnage of vessels by nationality included U.S. 12,469,276; British 5,780,215; Norwegian 2,325,651; Panamanian 1,009,948; and Honduran 906,398. Employees of the canal and the railroad on June 30, 1951, included 4,216 paid at U.S. rates and 14,519 paid at local rates. (J. W. Mw.)

Pan American Union: see ORGANIZATION OF AMERICAN STATES.

Paper and Pulp Industry. The estimated production of paper and paperboard in the United States for 1952 was about 25,000,000 tons as contrasted with 26,086,115 tons in 1951.

In production and consumption the decrease indicated for 1952 was the result of reduced buying by the federal government for defense purposes. An easing in domestic demand was also noted.

Of particular interest to the industry was the expansion under way in production capacity. Between Jan. 1951 and Jan. 1956 this was expected to amount to 978,050 tons of coarse paper, 101,060 tons of book and groundwood papers, 106,950 tons of tissue paper, 66,650 tons of fine paper, 267,220 tons of newsprint, 775 tons of miscellaneous papers and 1,873,330 tons

Table II.—U.S. Paper Production

	(In short tons)			
	1940	1945	1950	1951
Newsprint	1,056,304	725,475	1,017,322	1,106,086
Book	1,655,423	1,501,015	3,286,047	2,737,000
Groundwood	550,453	636,026	804,810*	688,354
Fine	735,753	1,000,794	1,222,637	1,364,029
Wrapping (coarse)	2,500,818	2,403,182	3,383,400	3,597,144
Tissue	733,894	157,083	240,604	270,138
Sanitary		823,705	1,108,021	1,215,258
Absorbent	129,410	88,643	105,393	124,412
Building papers	682,460	883,259	1,414,370	1,400,658
Other paper	60,120	238,047	315,905	419,036
Container board	3,434,834	4,131,107	5,646,433	6,347,000
Folding boxboard	1,416,452	2,092,344	2,368,010	2,429,000
Setup boxboard	898,549	721,087	641,345	701,000
Building boards	179,443	894,830	1,258,620	1,315,000
Other boards	449,796	1,074,368	2,292,071	2,272,000
Total	14,483,709	17,370,965	24,300,178	26,086,115

*1949.

Table III.—U.S. Wood Pulp Production

	(In short tons)						
Year	Unbleached Sulphite	Bleached Sulphite	Total Sulphite	Groundwood	Soda	All Others	Total
1935 . .	634,947	944,620	1,467,749	1,355,819	485,162	144,002	5,032,299
1940 . .	995,700	1,612,089	3,747,992	1,632,727	532,387	438,664	8,959,559
1945 . .	815,909	1,543,762	4,471,875	2,386,859	429,757	518,978	10,167,200
1948 . .	901,814	1,909,402	6,013,696	2,175,107	509,864	1,362,409	12,872,292
1949 . .	710,486	1,826,598	5,968,557	1,962,141	491,822	1,177,584	12,137,188
1950 . .	744,493	2,111,332	7,508,376	2,220,795	522,990	1,719,166	14,827,152
1951 . .	754,916	2,378,692	8,576,298	2,476,635	446,483	1,861,362	16,494,386

Table IV.—Canadian Paper and Paperboard Production

	(In short tons)			
Kind	1948	1950	1951	
Newsprint	4,640,000	5,318,988	5,325,000	
Book and fine paper	231,000	214,097	—	
Wrapping	207,000	222,840	—	
Paperboard	708,000	876,894	—	
Other papers	277,000	179,216	1,575,000	
Total	6,063,000	6,812,035	6,900,000	

Table V.—Canadian Wood Pulp Production

	(In short tons)					
Year	Bleached Sulphite	Unbleached Sulphite	Sulphite	All Others	Groundwood	Total*
1935	374,157	644,820	236,536	20,887	2,563,711	3,868,341
1940	543,987	936,558	371,569	133,164	3,305,484	5,290,762
1945	603,929	1,035,755	478,740	140,470	3,341,920	5,600,814
1950	760,769	1,450,104	1,053,588	297,750	4,910,803	8,473,014
1951	—	2,530,000†	1,215,000	—	5,125,000	8,870,000

*Includes all pulp screenings.

†Includes bleached sulphite.

of paperboard and building board.

Canada.—The pulp and paper industry in Canada attained new peaks in 1951 and continued its expansion into 1952. It became the world's leading exporter of pulps. Between 1950 and 1955 new investment in pulp and paper mills was expected to exceed \$600,000,000, which in dollar terms was 70% greater than the growth of the industry in the preceding five years.

United Kingdom.—Paper and board continued to be controlled during 1952, both as regards tonnage and selling prices. The greater part of the production consisted of newsprint, although because of war damage these mills were still able to produce only 70% of the pre-World War II output of 800,000 tons per year. Before the war, Great Britain used 1,200,000 tons of newsprint a year. In Jan. 1952 it was reported that 180,000 tons of straw would be consumed in papermaking during the year. (R. G. M.)

Papua-New Guinea. From 1949 the territory of Papua and the trust territory of New Guinea have been administered as a single area by the Australian commonwealth government. Areas: Papua, 90,540 sq.mi.; New Guinea, 69,700 sq.mi.; New Britain, New Ireland, Admiralty Islands and certain of the Solomon Islands included in the trust territory, 23,300 sq.mi. Pop.: Papua

Table I.—U.S. Production and Consumption of Paper, Wood Pulp and Pulpwood

Year	Paper and Paperboard (short tons)		Wood Pulp (short tons)		Receipts of Pulpwood (cords)		
	Production	Consumption	Production	Consumption	Domestic	Imported	Total
1925	9,182,204	10,590,090	3,962,217	5,590,304	5,005,445	1,088,376	6,093,821
1931	9,381,840	11,403,850	4,409,344	6,005,718	5,896,446	826,320	6,722,766
1935	10,506,195	12,490,886	4,925,669	6,877,869	6,590,942	1,037,332	7,628,274
1940	14,483,709	16,620,632	8,959,559	9,781,739	12,307,138	1,435,820	13,742,958
1945	17,370,965	19,665,487	10,167,200	10,825,412	15,254,000	1,729,000	16,983,000
1950	24,377,222	29,013,060	14,810,860	16,483,201	20,702,000	1,834,000	22,546,000
1951	26,086,115	30,609,822	16,494,000	17,704,000	25,123,000	2,641,000	27,764,000

(1941 est.) native 300,000, white 3,070 (1951 est. total, 369,000); New Guinea (including the islands) native 690,000, white 4,200 (1951 est. total, 1,103,000). Capital of joint administration, Port Moresby. Administrator in 1952, Col. J. K. Murray.

History.—The legislative council for Papua-New Guinea, opened in Nov. 1951 by the governor of New South Wales, Sir John Northcott, was described during 1952 as a "short step" toward democratic government in the territories. Another observer, however, G. W. Holland, president of the Returned Soldiers association, expressed the opinion that the territories should be included in the commonwealth of Australia as another state. It was clear that the council was deficient in powers and representative nature. All its ordinances had to receive the assent of the administrator of the territories before becoming law, and each had to be tabled in the commonwealth parliament at Canberra and might be disallowed by it. Further, the governor general might disallow any ordinance despite the administrator's consent, and the administrator had to refer to the governor general the matters of divorce, land transactions involving natives, money or land grants, disposal of land or any interest in it, defense forces, employment of natives, arms, ammunition, explosives, intoxicating liquor, opium, immigration, emigration, deportation and the public service.

Economic development of the area continued both extensively and intensively and coffee exports took place during the year. In June the commonwealth government decided to change the decision of its predecessor to establish the capital at a new site and to rebuild the capital Rabaul on its old site. This was the outcome of acceptance of expert opinion that Rabaul was safe from volcanic action.

During the year Australian administration of the territories of Papua-New Guinea was criticized before the United Nations. The validity of the criticism was denied by the Australian representative. Indonesia renewed during the year its claim for the territory of Dutch New Guinea but the Australian representative stated that Australia both recognized Dutch sovereignty over the area and considered it should continue. This was related by the representative to what he considered the most important matter, the prevention of the spread of Communism in southeast Asia.

(J. F. C.)

Economy.—*Papua.*—Finance and Trade.—(1949–50) Total revenue fund £A3,071,145 (Australian government grant £A1,903,313); expenditure £A2,325,203. Total imports (1949–50) £A4,684,028; exports £A1,202,694. Principal exports (1949–50 values): rubber £A361,339; copra £A574,511; coconut, desiccated £A58,321; gold bullion and Nahwe gold £A10,875. Principal imports: metals and machinery £A1,605,347; agricultural products and groceries £A1,134,129; oils, paints and varnishes £A338,247; tobacco and tobacco manufactures £A214,427. Agriculture.—(production in tons, 1949–50): rubber 1,634; copra 10,191; coconut 318; coffee beans 6. *New Guinea.*—Finance and Trade.—(1950–51) Internal revenue £A1,219,411 (Australian government grant £A2,356,311); expenditure £A3,575,721. Total imports (1950–51): £A6,186,669; exports (incl. exports not of local origin): £A5,436,617. Principal exports of local origin (1950–51): cocoa beans £A60,934; coconut, desiccated £A95,024; copra £A936,601; gold £A145,393; trochus shell £A95,709. Principal imports: metals, machinery and metal manufactures £A1,350,608; food and drink £A1,779,791; oils, fats and waxes £A514,890. Agriculture and Mining.—(1950–51) desiccated coconut 939 tons; copra 641,301 tons; cocoa beans 317 tons; coffee beans 32 tons. Timber (cu.ft.): logs 1,894,459; sawn 1,670. Gold: 87,593 fine ounces.

Currency.—Australian pound used throughout Papua-New Guinea (£A1.25 = £1 sterling. £A1 = U.S. \$2.24).

Paraguay. A landlocked republic in central South America, Paraguay is bounded north and east by Brazil, south by Argentina and west by Bolivia. Area: 157,047 sq.mi., of which 95,338 sq.mi. constitute the sparsely populated Chaco, while the 61,709 sq.mi. lying east of the Paraguay river contain 95% of the population and activity. Pop. (1950 census): 1,406,000; (1951 est.): 1,425,000. The people are a homogeneous mixture of Spanish and Guaraní stock (with some Portuguese and Italian) which has developed into a racial type. Official language, Spanish. The Guaraní tongue has survived

more than the blood, but is secondary and recessive. Capital and chief centre: Asunción, pop. (1950) 205,605 including suburbs. Other cities: Villarica (31,081) Concepción (16,487), Encarnación (16,078). Official religion: Roman Catholic. In 1952 the president was Federico Chaves.

History.—In 1952 the executive power and the house of deputies continued in the hands of the recently purged Colorado party, which held its convention in June and proclaimed Federico Chaves its candidate for the period 1953–58. No significant disorders of political or military origin had occurred since Chaves took control late in 1949. The Paraguayan Confederation of Workers, established in July 1951 with 80,000 members, had been supported by the government in connection with sporadic labour strikes, and had avoided affiliation with the labour movement organized by the Perón regime in Argentina. The vigorous governmental program of economic improvement made substantial progress in fostering new industries and rehabilitating old ones. The International Bank for Reconstruction and Development late in 1951 granted Paraguay a loan of \$5,000,000 for agricultural development, elaborately planned and in part under way. The International Monetary fund, at the invitation of the Paraguayan government, sent a special mission to co-operate with the Bank of Paraguay on matters related to the monetary and foreign exchange system, and the implementation of its proposals appeared imminent.

Education.—In 1949, 1,262 primary schools were recorded, with 5,479 teachers and 186,101 pupils. There were 41 secondary schools, including 12 normal schools. There were in 1951 four regional agricultural schools; and at San Lorenzo, near Asunción, the Estigarribia National School of Agronomy. A national junior college at the capital had several hundred students, and the national university at Asunción had in 1950 approximately 1,800 students and 100 professors.

Finance.—The currency unit is the guaraní, devalued March 5, 1951, from 3.09 to 6 per U.S. dollar. The government-affiliated bank, which controls all exchange, used the latter rate for the most essential imports and the principal exports, but used the rate of 9 guaraníes per U.S. dollar for less essential imports, minor exports and movements of registered capital. Black market rates ranged around 32 guaraníes per U.S. dollar as 1952 opened. The 1951–52 budget was \$28,300,000 (converting guaraníes at the official rate); of this, \$7,500,000 was for national defense, \$5,000,000 for public debt, \$4,500,000 for internal order and \$3,750,000 for education. Estimated revenues were \$23,700,000. Early in 1951 the total public debt was \$27,000,000, of which \$7,000,000 was external and \$20,000,000 internal. At the opening of 1952 Paraguay was current on all its foreign obligations, except a loan from Brazil on which a settlement was impending. At the same time the monetary issues in Paraguay were \$56,000,000, against reserves of \$13,600,000 of which about \$2,000,000 were in gold. Aggregate assets of the four commercial banks at the beginning of 1952 were \$89,000,000, with capital funds standing at \$5,500,000 and deposits at \$42,650,000.

Trade.—Paraguay's exports in 1951 were valued at \$35,100,000 and imports at \$33,300,000. In 1950 the chief exports were lumber \$7,450,000, cotton \$5,400,000, quebracho (tanning extract) \$4,650,000 and canned beef \$3,250,000; while lesser but substantial exports were hides, vegetable oils, tobacco and essential oils. The principal imports were nontropical foodstuffs, textiles, machinery and metal manufactures, petroleum products, chemicals and drugs and paper. Argentina held first place among the destinations of exports, followed by the United States, Great Britain, Germany and Uruguay; but the Netherlands, Belgium, France and Spain also figured. The principal suppliers of imports were Argentina, Great Britain, the United States, Germany and Sweden; while of less importance were the Netherlands, Italy, France, Belgium and Brazil. Both Great Britain and Germany gained strongly in sales during 1951, while the United States declined slightly.

Communications.—The Paraguay Central railway runs 278 mi. S.E. from Asunción through the best farm and forest areas to Encarnación on the upper Paraná, where it connects by car ferries with the Argentine railways at Posadas. Traffic in late years averaged about 2,000,000 passengers and 260,000 tons of freight. Passenger fares were raised 30% in 1951 and freight rates 50%. There were more than 550 mi. of modern gravel-crowned highways, plus 80 mi. of asphalt, with about 4,000 mi. of primitive roads. The number of automotive vehicles at the beginning of 1950 was 3,150, of which 1,800 were passenger cars, 1,000 were trucks and 300 were buses. The importation of automotive vehicles was prohibited in 1951, and tires and gasoline were rationed so that many vehicles went out of commission. While river transport is active everywhere in Paraguay, the Argentine Doderro line carries by far the greatest volume, the last published estimate (1948) being 490,000 tons. The Paraguayan state merchant fleet, consisting of one tanker and three cargo boats, carried in 1950 southbound to Argentina 10,400,000 cu.ft. and northbound 14,600,000 cu.ft. There were 5,111 telephones in Paraguay at the opening of 1951, and the national telegraph system had 3,700 mi. of wire and joined 118 population centres. There were several broadcasting stations at Asunción, and between 25,000 and 30,000 radio receiving sets. Aeroplane connections with Argentina and Brazil were increased in 1951 and a service to Santiago, Chile, by a Brazilian line was newly established.

Agriculture.—Agriculture is the principal basis of Paraguay's economic life, and in 1951 there were about 900,000 ac. in crops. The production in tons was: mandioca 970,000, sugar 561,000, maize 119,000, sweet potatoes 81,400, cotton 36,400, rice 19,800, cowpeas 18,000, peanuts 13,600, vegetable oils 11,000 and tobacco 8,800. The citrus fruit crop was more than 13,000,000 boxes, of which oranges formed the greatest part. Cattle declined to 3,400,000 head in 1950, compared with 5,000,000 head in 1947, and this decline continued in 1951. The number of horses in 1951 was 250,000 and the number of sheep 200,000.

Manufactures.—The chief manufactured products were canned meat and textiles. The meat plants were closed in 1951 because of a shortage of cattle. The textile mills showed considerable expansion over 1950, when the three largest mills produced 2,500,000 m. of cotton cloth and 1,600 tons of cotton yarn as well as good quantities of woollens and silks. Six new plants for the crushing of oilseeds and palm kernels were installed in 1951. Other products were flour, beer, shoes, furniture, soap, glass and ceramics, matches, cigarettes and processed foods. A new spaghetti plant was opened in 1951, as well as a pharmaceutical plant under Swiss auspices principally to make antibiotics.

Mines and Forests.—Paraguay's principal mineral resources are limestone, kaolin and mica (the latter not yet in production). The production of cobblestones and crushed stone in 1951 was more than 50,000 cu.yd. Construction was well advanced on a cement plant at Valle Mi, which was expected soon to make Paraguay self-sufficient as to cement with an output of 100 tons daily. The output and export of hardwood lumber was somewhat lower in 1951 than 1950 when exports (nine months) were 200,000 tons; but value increased strongly over the 1950 (nine months) figure of \$7,000,000. The production of quebracho tanning extract rose to 44,000 tons in 1951, valued at nearly \$7,000,000. (W. Fr.)

Parents and Teachers, National Congress of: see SOCIETIES AND ASSOCIATIONS, U.S.

Paris. Capital and largest city of France, Paris had by the 1946 census a population of 2,725,374, estimated to have increased by about 100,000 by 1952. President of the municipal council (1952): Paul Coirre.

Anniversaries celebrated in Paris during 1952 included: the 20th of Aristide Briand's death (March); the 100th of the gynaecologist Joseph Récamier's birth (June); and the 100th of the birth of Pierre Marie, collaborator with, and successor to, the great physician Jean Martin Charcot (July). Louis Braille's ashes were moved to the Panthéon (June 22).

The housing problem remained acute, and the number of people obliged to live in hotels or in furnished rooms let at excessive rents was only gradually diminishing. The municipal council's plan had envisaged building 5,000 flats a year from 1951. The council asked the state to authorize its floating a loan of 10,000,000,000 fr. to enable it to go forward with the undertaking.

The number of pupils attending kindergarten and primary schools and complementary courses rose to about 450,000. Some primary classes had 50, 60 or even 70 children. To meet the growing need the council would have to build new educational centres, for which 2,500,000,000 fr. would be required; as in the case of housing, it was waiting for the state's permission to raise a loan. The council's budget for 1952 was estimated at 63,000,000,000 fr. Excess expenditure was covered by raising the taxes on real estate and on business houses and instituting new *centimes additionnels* (rate charges).

The cost of living index varied little in 1952, though the price of dairy produce went up. The butchers keenly resented the prices fixed for meat by the prefecture of police: in September and October a dozen butchers' shops were shut for periods of one or two weeks. Teachers, hospital staff and employees of the *métro* and road services were trying to get their wages increased. (A. Pr.)

Parks and Monuments: see NATIONAL PARKS AND MONUMENTS.

Parliament, British. On the morning of Feb. 6, 1952, King George VI died, and immediately the sittings of both houses of parliament were cancelled. On the same day members began to take the oath of allegiance to Queen Elizabeth II. Messages of condolence to the



TORCHLIT PARADE in Paris accompanying a cortege for Gen. Jean de Latre de Tassigny as it left the Arc de Triomphe early in 1952. The streaks of light (a time exposure) indicate the path of mounted torchbearers

queen and to the queen mother were passed and both houses resumed normal business on Feb. 19. The session ended on Oct. 31 after a summer recess from Aug. 2 to Oct. 14. Queen Elizabeth delivered her first speech from the throne on Nov. 4 when she opened the new session. The duke of Edinburgh sat on a chair of state near the throne, thus reviving the practice of the prince consort a century before.

H. F. C. Crookshank, minister of health and leader of the house of commons, vacated his portfolio and became lord privy seal. On March 1 Earl Alexander of Tunis (who was raised from a viscount) became minister of defense. A. T. Lennox Boyd succeeded J. Maclay as minister of transport and civil aviation; I. Macleod became minister of health, and the marquess of Salisbury succeeded Lord Ismay (*q.v.*) as secretary of state for commonwealth relations.

During an all-night sitting (March 26-27) Mrs. E. Braddock (Liverpool, Exchange) was suspended after she had refused to obey the order to withdraw from the chamber. In the period of three or four weeks before Easter the house of commons sat after 10:30 P.M. (its normal hour of adjournment) for a total of 58 hr. 11 min. The guillotine was imposed on the National Health Service bill and the Licensed Premises in the New Towns bill.

The house of commons approved a new civil list for the reign of Queen Elizabeth. A Labour party amendment that sought to have a review every ten years was defeated by 239 votes to 211.

Four viscounts were created in the new year honours: Viscount Waverley (Sir John Anderson), Viscount Bracken (Brendan Bracken), Viscount Hudson (R. S. Hudson) and Viscount Thurso (Sir Archibald Sinclair). Earl Winterton was created a baron of the United Kingdom. In the birthday honours (June 5), two viscounts and two barons were created: Viscount Brookeborough

(Sir Basil Brooke, prime minister of Northern Ireland), Viscount Norwich (Sir Alfred Duff Cooper), Lord Jeffreys (Gen. Sir George Jeffreys) and Lord Simonds, the lord chancellor.

Commonwealth.—The new Nigerian house of representatives was formally opened on March 11. In the New Zealand house of representatives a member was suspended for a day for refusing to withdraw a statement; this was the first parliamentary suspension since 1932.

(See also CABINET MEMBERS; GREAT BRITAIN AND NORTHERN IRELAND, UNITED KINGDOM OF; LAW.)

Pashtunistan: see AFGHANISTAN.

Patents. During the fiscal year ending June 30, 1952, the United States patent office granted 46,531 patents, including 3,344 for designs, 91 for plants and 133 reissues. This number was 3,719 less than the number issued in 1951.

Applications for patents filed in the patent office for the fiscal year totalled 64,992, compared with 68,108 received in the preceding year. The total number of patent applications pending on June 30, 1952, was approximately 190,000, of which about half were awaiting action by the office, the remainder being under rejection awaiting response by applicants, or in interference or appeal proceedings.

Trade marks registered (16,400) and renewed (3,314) during 1952 totalled 19,714, compared with 21,356 during the preceding year. In addition 1,304 registrations were published. Applications for registration and renewal totalled 19,509 compared with 19,272 for the preceding year. On June 30, 1952, approximately 30,000 applications for registration, renewal and republication were pending in the office, of which about half were pending before the examiners.

By June 30, 1952, the patent office had granted more than 2,600,000 patents since the consecutive numbering system began in 1836. Patent no. 2,000,000 expired in April 1952; and the inventions disclosed in these more than 2,000,000 expired patents represent a reservoir of knowledge available for the free use of anyone, as well as a historical chronology of a phase of the industrial development of the United States. Complete classified and numerical sets of United States patents are available for the use of the public in the patent office search room. Printed copies of patents are sold for 25 cents each.

More than 63,000 patents had been listed on the register of patents available for licensing or sale—the new listings being published in the weekly issues of the *Official Gazette*.

Major administrative accomplishments and public service improvements during the year included a revised method of presentation of patent briefs in the *Official Gazette*, grouping the patents issued weekly into major classifications dealing with general and mechanical, chemical, and electrical subjects, rather than the random system of numbering patents as heretofore. The *Roster of Attorneys and Agents Registered to Practice before the U.S. Patent Office* was revised under date of May 1, 1952. The *Rules of Practice in Trade-Mark Cases with Forms and Statutes* was revised as a third edition dated May 1952, and a second revision of the loose-leaf *Manual of Patent Examining Procedure* was issued in Dec. 1951.

Final disposition, except for cases on appeal in court, was made of all applications by veterans for extension of the terms of patents under the Veterans Patent Extension Act of June 30, 1950. Of 151 complete applications for extension, 107 were granted, 37 refused (some of which were appealed) and 7 abandoned.

Legislation enacted by congress during the 2nd session of the 82nd congress of interest in connection with patents included the revision, codification and enactment into law of Title 35,

entitled "Patents," of the United States code, public law 593, approved July 19, 1952.

Abstracts of abandoned patent applications published in the *Official Gazette* during the year ending June 30, 1952, pursuant to a commissioner's notice dated Jan. 25, 1949, totalled 261.

Net receipts for the fiscal year ended June 30, 1952, were \$5,360,818.13. Obligations incurred under all patent office appropriations amounted to \$12,219,338.01 compared with \$11,248,338.58 for the preceding year. (J. A. ML.)

Paz Estenssoro, Víctor (1907—), Bolivian president, was born on Oct. 2 at Tarija, Bolivia, and received his law degree from the University of San Andrés at La Paz in 1927. He was an attorney with the Bolivian permanent fiscal commission in 1932, and in that same year became senior official of the ministry of finance. In 1939 he was appointed professor of economics at the University of San Andrés. He served as representative for Tarija in the national chamber of deputies from 1940 to 1943 and was vice-president of the chamber in 1940–41.

Paz Estenssoro was leader of the Nationalist Revolutionary Movement (M.N.R.) when this organization overthrew the Bolivian government on Dec. 20, 1943, and installed Gualberto Villarroel as president. Paz himself became minister of finance. The M.N.R., a leftist-nationalist group, was overthrown by a revolt in July 1946; Villarroel was assassinated and Paz went into exile. During the next five years he led the M.N.R. from outside the country, and in 1951 he became a legal candidate for president of Bolivia, conducting his campaign from Argentina. In elections held May 6, 1951, he received more votes than any other candidate but fell short of the majority required by the Bolivian constitution. A military junta thereupon took control, under the leadership of Gen. Hugo Ballivián.

Paz led another revolt which succeeded in ousting the junta April 9–11, 1952; he returned to La Paz on April 15 and was sworn in as president the next day. In his first public pronouncement he promised nationalization of Bolivia's important tin industry, which was later carried out.

Peaches: see FRUIT.

Peanuts. The 1952 U.S. crop of picked and threshed peanuts was 1,225,145,000 lb., 27% less than the 1,676,000,000 lb. of 1951 and 40% less than the ten-year average. Area devoted to the crop was 1,665,000 ac., 83% of the 1951 acreage and much lower compared with the 2,940,000 ac. average for 1941–50. Yields also declined, to 736 lb. per acre, compared with 831 lb. in 1951, but the average for the previous decade was only 708 lb. Georgia was the leading producer (402,000,000 lb.) as in former years, with North Carolina second (248,750,000 lb.). In general, the crop was a very good one in the Virginia-Carolina area with an indicated yield of 1,345 lb. per acre, compared with 1,426 lb. in 1951 and a 1,144-lb. average for 1941–50.

The price at harvest time averaged about 11 cents per pound to farmers. Prices to farmers were supported at 12 cents per pound (\$239.40 per ton) for production on allotted acres, one-half cent higher than for the 1951 crop. It was indicated that

U.S. Peanut Production by Leading States

State	(In thousands of pounds)		
	Indicated 1952	1951	Average 1941–50
Georgia	402,000	595,800	698,300
North Carolina	248,750	315,210	299,494
Virginia	179,950	236,800	188,724
Alabama	179,200	205,620	319,829
Texas	90,500	118,300	317,066
Florida	51,150	62,640	64,016
Oklahoma	50,000	114,400	106,496

the small crop would bring the producers about \$160,000,000 compared with \$250,000,000 for the peak 1946 crop. The peanut support program, which cost an estimated \$40,000,000 in 1950 and \$14,000,000 in 1951, was changed by tightening legislation in March, limiting price support benefits to farmers holding plantings to acreage allotments under the program. Previously the crop from excess planting had been sold for crushing or oil without penalty.

Reports from other major producing areas indicated that the 1952 peanut harvest, though not a small one, might fall below the large crops of 1950 and 1951. Prices declined and peanut imports into western Europe declined, but peanut oil imports increased. India continued to control exports of the oil. Exports of peanut oil from the United States in 1951-52 were 54,577,000 lb., valued at \$10,184,000, compared with 31,546,000 lb. and \$7,301,000 in 1950-51. Peanut exports, however, were only 10,901,000 lb., valued at \$1,829,000 in 1951-52, compared with 14,049,000 lb. and \$6,097,000 in 1950-51. (J. K. R.)

Pears: see FRUIT.

Pearson, Lester Bowles (1897-), Canadian government official, was born April 23 at Toronto, Ont. After serving in World War I, he graduated from the University of Toronto, attended Oxford university, and returned to Toronto as history lecturer. In 1928 he left the academic world and joined the Canadian diplomatic service as a first secretary in the department of external affairs. By 1941 he had become assistant undersecretary of state for external affairs; by 1942 minister-counsellor at the Canadian legation in Washington, D.C.; by 1946 undersecretary of state for external affairs. In 1948 he joined the cabinet as secretary of state for external affairs and won the seat of Algoma East (Ont.) in the house of commons.

Pearson led the Canadian delegation to the United Nations general assembly in 1949, and was elected chairman of the U.N. political and security committee. In 1951 he explained Canada's position regarding Korea to the U.N. general assembly, and outlined Canada's reaction to the disarmament proposals; he attended meetings of the North Atlantic treaty council, being chairman at the meeting in Rome. In 1952 he attended the North Atlantic treaty council meeting in Lisbon and later turned over the chairmanship to O. B. Kraft of Denmark. On Oct. 14 he was elected president of the U.N. general assembly. (C. Cy.)

Pecans: see NUTS.

Penicillin: see CHEMISTRY; CHEMOTHERAPY; MEDICINE.

GREATER PITTSBURGH AIRPORT, second largest commercial airport in the world at the time of its dedication in May 1952; it is about 14 mi. from downtown Pittsburgh

Pennsylvania. A middle Atlantic state and one of the 13 original states of the union, Pennsylvania is popularly known as the "Keystone state." Area: 45,333 sq.mi., including 288 sq.mi of inland waters. Pop. (U.S. census, 1950): 10,498,012. Capital: Harrisburg (89,554). Cities with a population greater than 75,000 in 1950: Philadelphia (2,071,605); Pittsburgh (676,806); Erie (130,803); Scranton (125,536); Reading (109,320); Allentown (106,756); Altoona (77,177); Wilkes-Barre (76,826). The urban population in 1950 numbered 7,403,036, and the rural 3,094,976.

History.—The year 1952 was a period of intense industrial activity in the commonwealth and was particularly marked by the expansion of manufacturing facilities, an extensive program of public construction of highways and hospitals and the improvement of the state's water resources. The large agricultural area north of Philadelphia along the Delaware river, adjacent to the new 3,800-ac. steel plant, was being transformed into an urban community with a rapidly expanding population.

Between Oct. 30, 1950, and July 1, 1952, the Defense Production administration listed \$1,764,474,000 in approved defense plant construction by companies in Pennsylvania. Programs of municipal redevelopment were carried forward in a number of Pennsylvania cities during the year. An extension of the Pennsylvania turnpike of more than 30 mi. eastward to the Delaware river was being undertaken to provide a connection with the New Jersey turnpike.

Citizen committees appointed by Gov. John S. Fine were active in studying the state tax structure and the possibility for improvement in the organization of the state government in the interest of increased efficiency and economy of operation.

The state's chief officers in 1952 were: John S. Fine, governor; C. Lloyd Wood, lieutenant governor; William S. Livenood, secretary of internal affairs; Weldon B. Heyburn, auditor general; Charles R. Barber, treasurer; Robert E. Woodside, attorney general; Francis B. Haas, superintendent of public instruction; and James B. Drew, chief justice.

Education.—Statistics for 1950-51, the latest year for which complete figures were available, showed a net enrolment of 1,577,888 pupils in the public schools of Pennsylvania, including 61,005 in the kindergarten, 948,789 in the elementary division and 568,094 in the secondary schools. There were 1,023 kindergarten teachers, 30,748 elementary teachers, 24,767 giving instruction in the high schools, 1,344 elementary principals, 900 secondary principals, 1,908 supervising officials and 1,588 other professional employees. The total expenditure, including current expenses, capital outlay and debt service was \$392,658,271, of which \$320,902,830 was for current expenses. School districts supplied 60.8% of their receipts from local taxation, while the state government contributed 37.8%, and the federal government an estimated 1.4% for current operating expenses.

Social Insurance and Assistance, Public Welfare and Related Programs.—During the first eight months of 1952, expenditures by the department of public assistance totalled \$76,500,000, including \$43,400,000 of state funds and \$33,100,000 of federal funds. The assistance rolls contained an average of 72,500 old-age assistance cases, 30,300 cases receiving aid to dependent children, 19,400 general assistance cases, 15,500 blind pensioners, and 9,400 cases receiving aid to the permanently and totally disabled.

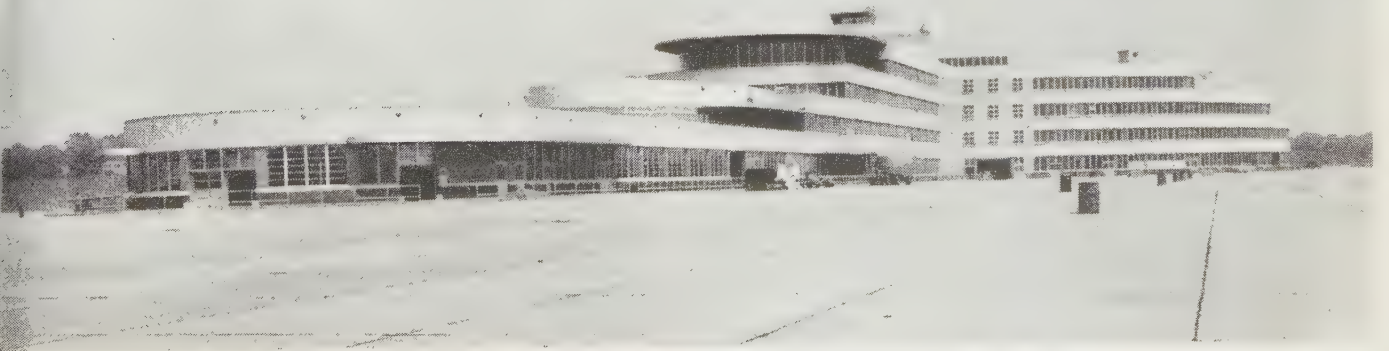


Table I.—Principal Crops of Pennsylvania

Crop	Indicated 1952	1951	Average 1941-50
Corn, bu.	63,967,000	60,766,000	56,703,000
All wheat, bu.	19,012,000	18,832,000	18,548,000
Oats, bu.	21,980,000	32,340,000	24,681,000
Barley, bu.	5,328,000	5,416,000	4,332,000
Rye, bu.	176,000	186,000	478,000
Buckwheat, bu.	903,000	944,000	1,996,000
Potatoes, bu.	13,650,000	16,215,000	19,990,000
Tobacco, lb.	38,814,000	56,186,000	50,451,000
All hay, tons	3,188,000	3,530,000	3,470,000
Apples, bu.	5,460,000	7,626,000	6,684,000
Peaches, bu.	2,280,000	2,352,000	2,051,000
Pears, bu.	200,000	200,000	277,000
Cherries, tons	10,500	13,600	7,310
Grapes, tons	15,800	17,400	16,940

Source: U.S. Department of Agriculture.

Table II.—Principal Industries of Pennsylvania

Industry	Value of Products	
	1951	1940
Metals	\$11,137,321,500	\$2,944,848,400
Textiles	2,375,726,200	795,457,200
Food	2,351,433,900	740,801,600
Chemicals	1,992,398,400	518,062,300
Paper and printing	1,233,183,700	372,074,400
Clay, glass and stone products	644,891,100	500,244,200
Leather and rubber	587,816,900	174,963,900
Tobacco products	147,280,100	92,272,300
Lumber and its manufacture	292,184,300	79,733,100
Mine and quarry	1,093,557,400	452,753,600
Miscellaneous	907,826,000	299,682,400
Railroad repair shops	334,043,700	124,708,500

Source: Department of Internal Affairs, Bureau of Statistics.

Eight institutions comprised the state penal and correctional system, for the support of which a biennial appropriation of \$16,163,000 was made for 1951-53. For the operation of the state mental hospital system comprising 21 institutions, an appropriation of \$83,385,000 was made. An appropriation of \$10,045,000 was made for the biennium for the operation of the ten general hospitals comprising the state general hospital system.

Communications.—Of the approximately 100,000 mi. of highways in Pennsylvania in 1952, 41,000 mi. were on the state highway system under the supervision of the department of highways. Included in this state highway total were 655 mi. in the cities of Pennsylvania and 2,204 mi. in the boroughs. As of Dec. 31, 1952, more than 40,000 mi. were of improved type, leaving less than 1,000 mi. unimproved. In addition, there were 327 mi. of superhighway operated by the Pennsylvania turnpike commission. During the fiscal year ending May 31, 1952, 2,365 mi. of new construction and improvement had taken place in the state highway system.

Banking and Finance.—As of June 30, 1952, there were 344 state banks, including 8 savings banks, with assets of \$5,915,500,759.65. These state banks had total deposits of \$5,318,526,833.09. In addition, there were as of Dec. 31, 1951, 772 building and loan associations with assets of \$645,477,790.25. As of June 30, 1952, there were 613 national banks located in Pennsylvania, with assets of \$7,835,982,000. The deposits of these national banks totalled \$7,019,389,000.

The total of appropriations made by the general assembly from the general fund and approved by the governor was \$890,761,785.06. Appropriations and allocations from the motor licence fund for the biennium ending May 31, 1953, totalled \$363,867,314. The estimated receipts from the motor licence fund were \$316,643,400. The gross debt Aug. 1, 1952, was \$483,500,000, which cash and securities in the sinking fund reduced to a net of \$470,590,320.

Agriculture.—The total gross farm income for 1951 was \$842,691,000, including \$836,265,000 in cash receipts from farm marketings and \$6,426,000 in federal payments. The receipts from farm marketings were divided as follows: livestock and livestock products \$643,580,000, and crops \$192,685,000.

Manufacturing and Mining.—In 1951 there were 21,099 manufacturing establishments in the state, employing 1,808,050 persons to whom \$6,041,990,000 was paid in wages and salaries. The capital invested was

Table III.—Mineral Production of Pennsylvania

(In short tons, except as noted)

Mineral	1950		1949	
	Quantity	Value	Quantity	Value
Cement (bbl.)	39,451,000	\$94,604,000	36,905,000	\$84,839,000
Clays	3,301,000	8,479,000	3,155,000	7,527,000
Coal, anthracite	44,077,000	392,398,000	42,702,000	358,008,000
Coal, bituminous	105,870,000	529,462,000	89,215,000	446,774,000
Cobalt (lb.)	660,000	†	674,000	†
Coke*	21,526,000	269,222,000	17,667,000	216,206,000
Petroleums*	587,000	128,259,000	465,000	84,953,000
Iron ore	1,250,000	11,626,000	1,067,000	9,324,000
Iron, pig*	18,300,000	788,497,000	14,894,000	641,033,000
Lime	1,086,000	12,663,000	911,000	10,191,000
Natural gas (thousand cu. ft.)	91,137,000	23,058,000	84,739,000	21,727,000
Natural gasoline (bbl.)	232,000	702,000	228,000	683,000
Petroleum (bbl.)	11,859,000	45,300,000	11,374,000	40,600,000
Sand and gravel	13,858,000	17,172,000	11,699,000	14,398,000
Slate	285,000	5,546,000	228,000	4,579,000
Stone	25,493,000	42,206,000	21,226,000	34,856,000
Sulphuric acid*	309,000	4,472,000	229,000	3,506,000
Other minerals . . . . .	...	2,996,000	...	2,464,000
Total		\$1,186,212,000		\$1,035,970

*Values for processed materials are not included in the totals.

†Value included with other minerals.

\$6,572,597,800 and the value of the goods produced was \$23,097,663,200. Included as part of the latter amount, value added by manufacture was \$9,491,648,200. The value of the products of the principal industries for 1940 and 1951 is shown in Table II.

(J. S. Fe.)

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in Pennsylvania in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Pennsylvania ranks first among the states in the production of cement, stone and slate, and second in clays, coal and lime, and stands second in the value of mineral output, with 10.01% of the U.S. total.

Pension, Old-Age: see SOCIAL SECURITY. See also under various states.

Pensions, Army and Navy: see VETERANS ADMINISTRATION (U.S.).

Performing Right Societies: see SOCIETIES AND ASSOCIATIONS, U.S.: *American Society of Composers, Authors and Publishers.*

Perón, Juan Domingo (1895—), president of Argentina, was born on Oct. 8 near Lobos, south of Buenos Aires, and was educated in military schools. He became one of the leaders of the G.O.U. (Grupo de Oficiales Unidos), a nationalist clique of young army officers who in 1943 helped overthrow the regime of Pres. Ramón S. Castillo. Perón became war minister and later vice-president under Pres. Edelmiro Farrell, and in 1946 was himself elected president on the Labour party ticket. In 1949 a constitutional change was accomplished which would permit Perón to succeed himself, and in July of that year he was renominated.

A feature of his regime in 1951 was the stifling of the independent newspaper *La Prensa*, and the seizure of its plant by the government. U.S. Asst. Secy. of State Edward G. Miller, Jr., told Perón on March 4 that his policies had so antagonized the U.S. public that it was difficult for the U.S. to co-operate with Argentina. On Aug. 22 Perón "agreed" to run for re-election as president, and on Nov. 13, 1951, he was re-elected by a 2-to-1 majority.

Perón was inaugurated on June 4, 1952, for his second term as president (1952-58). Overshadowing all other events of the year, however, was the death of his wife, Eva. There was much speculation about the effect her death might have on his political career, and about the amount of influence she had exerted on him as president. Perón announced that he would personally take over many of her activities, including leadership of the women's division of the Peronista party.

Persia: see IRAN.

Peru. A republic situated on the west coast of South America and bounded on the north by Ecuador and Colombia, on the east by Brazil and Bolivia, on the south by Chile and on the west by the Pacific ocean, Peru has an area of 482,258 sq.mi. The population, 8,405,000 according to preliminary figures of the 1950 census of the Americas, is composed approximately of 52% "white" and mestizo and 46% Indian; there are also some Negro and Asiatic elements to the extent of about 2%. Lima, the capital, has a population of about 1,000,000, including its suburbs. The population estimates for other major cities are: Callao, 100,000; Arequipa, 85,000; Cuzco, 45,000; Trujillo, 40,000; Iquitos, 38,000; Chiclayo, 35,000; Huancayo, 35,000; Ica, 25,000; and Piura, 22,000. Language: Spanish, although Quechua is still spoken by some of the highland Indians; religion: predominantly Roman Catholic. President in 1952: Gen. Manuel Odría.

History.—As the Odría administration continued to stress economic and fiscal reforms, the emphasis was placed during 1952 on public works projects. Major construction programs were already under way by the middle of the year, when a new

127,000,000 enterprise was announced. This undertaking involved the building and maintenance of new highways, and the expenditures were projected over a six-year period. Meanwhile, plans went forward for the modernization of the Peruvian navy within the over-all structure of the defense system of the western hemisphere. Three U.S.-built destroyers were commissioned on May 24, which doubled the effective surface strength of the Peruvian fleet. (See also INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT.) (G. I. B.)

Education.—In 1951 there were 9,705 public primary schools with 20,429 teachers and 872,669 pupils and 628 private schools with 2,650 teachers and 85,429 pupils. The 98 public secondary schools had 2,056 teachers and 41,209 students. There were also 148 private secondary schools, some of which were conducted by religious orders, with 1,736 teachers and 1,023 students. University education was available at four public universities—Lima, Arequipa, Trujillo and Cuzco—and the Catholic university of Lima. Appropriations for education in 1952 comprised 13% of estimated governmental expenditures.

Finance.—The monetary unit is the sol, valued at 6.45 cents U.S. currency, free rate, on Aug. 16, 1952. The 1952 budget estimated ordinary expenditure at 2,025,640,000 soles and extraordinary expenditure at 538,272,250 soles. Actual revenue in 1951 was 2,151,264,882 soles; expenditure, 1,979,936,932 soles. The direct public debt on Dec. 31, 1951, totalled 1,605,483,221 soles, made up as follows: external dollar and sterling debt (including accrued interest) 375,044,578 soles; internal consolidated debt 545,327,004 soles; internal floating and short-term debt 685,111,399 soles. On July 31, 1952, currency in circulation totalled 1,214,000,000 soles; demand deposits 2,038,000,000 soles; gold reserves \$45,700,000; foreign exchange reserves \$14,600,000.

Trade and Communications.—Exports in 1951 totalled 3,740,619,000 soles; imports, 4,238,597,000 soles. Leading exports in 1951 were cotton (33%), sugar and derivatives (13%), petroleum and products (8%), lead and zinc; leading imports, machinery and vehicles (33%), metals and manufactures (12%), chemicals and products (8%), cereals (7%) and textiles (7%).

Railways (1947) totalled 2,612 mi., of which 511 mi. were state-owned. Roads used by motor traffic on Dec. 31, 1949, totalled 19,468 mi., of which 7,903 mi. were hard-surfaced. Motor vehicles (1950) included 1,945 automobiles, 23,978 trucks and 3,459 buses. According to *Lloyd's Register of Shipping*, the merchant marine had 44 steamers and motorships (100 tons and over) aggregating 91,167 gross tons on June 30, 1951.

Agriculture.—Production figures in 1951 included cotton (ginned) 80,445 metric tons; centrifugal sugar 467,000 tons; and rice (paddy) 215,000 tons. In 1951 (Jan.-Nov.) 58,387 metric tons of cotton and 236,965 tons of sugar and derivatives were exported. Livestock estimates (1950-51) showed 19,000,000 sheep, 1,100,000 pigs, (1949-50) 1,092,000 goats, 2,500,000 cattle and (1948) 2,449,746 alpacas and llamas.

Mineral Production.—Production of the principal minerals in 1951 was as follows: copper (smelter) 25,170 short tons; lead 90,774 tons; zinc (ore) 111,663 tons; gold 144,367 fine oz.; silver 14,856,194 oz.; antimony 1,115 metric tons. Crude petroleum production totalled 16,109,896 bbl.; natural gasoline 1,089,853 bbl. (J. W. Mw.)

Petroleum. The Iranian oil impasse and the filing of suits against United States oil companies engaged in foreign operations for allegedly overcharging the Economic Cooperation administration and the Mutual Security agency for middle east oil delivered to Marshall plan countries in Europe, highlighted the developments of 1952. The federal government entered three suits in August to recover \$67,000,000 from Standard Oil company (New Jersey), Standard Oil Company of California, the Texas company and Socony-Vacuum Oil Company, Inc. The government termed these suits part of a broad

Table I.—World Production of Crude Oil

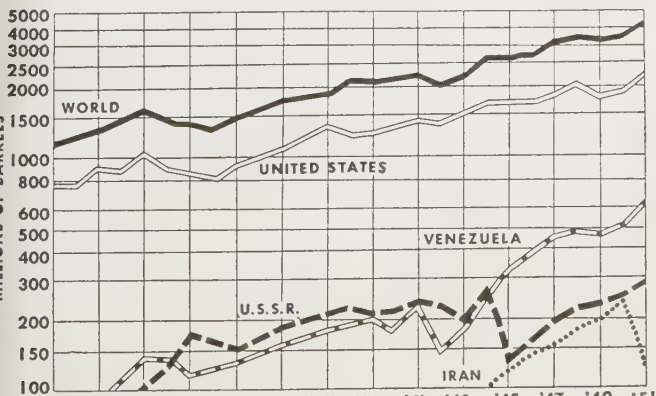
(In thousands of barrels)					
Year	United States	Per cent	Rest of world	Per cent	Total world
1939	1,264,962	61	821,198	39	2,086,160
1940	1,353,214	63	796,607	37	2,149,821
1941	1,402,228	63	818,429	37	2,220,657
1942	1,386,645	66	706,455	34	2,093,100
1943	1,505,613	67	751,012	33	2,256,625
1944	1,677,904	65	914,610	35	2,592,514
1945	1,713,655	66	881,304	34	2,594,959
1946	1,733,939	63	1,011,728	37	2,745,667
1947	1,856,987	61	1,164,681	39	3,021,668
1948	2,020,185	59	1,409,001	41	3,429,186
1949	1,841,940	54	1,562,159	46	3,404,099
1950	1,973,574	52	1,823,084	48	3,796,658
1951	2,244,529	52	2,038,448	48	4,282,977
1st half of 1951	1,095,741	52	1,013,238	48	2,108,979
1st half of 1952	1,112,300	51	1,079,842	49	2,192,142

Source: Bureau of Mines; Oil and Gas Journal.

effort to break up "international oil cartels." At the same time a federal grand jury in Washington was investigating allegations of world-wide monopolies in oil, and a Federal Trade commission report, long held from the public for "security reasons," was released to the effect that these same companies, as well as the American Gulf Oil corporation, the British Anglo-Iranian Oil company and the British-Dutch Royal Dutch-Shell company, were combined in a monopoly to divide up world markets.

Categorical denials of the overcharging, cartel and world monopoly allegations were made by the accused companies. It was brought out that the price controversy was a technical matter that had long been under discussion and negotiation between the government and the companies. The Marshall aid plan was calculated, so far as oil was concerned, to provide money for building refineries abroad and for buying oil and petroleum products abroad—preferably in the middle east—so as to relieve the United States and South America of drain as much as possible and conserve western hemisphere oil reserves—a project into which the United States oil companies entered wholeheartedly. When in 1951 the shutdown of oil production in

OIL TANKER PIER of the Kuwait Oil Co., Ltd., at Mena al Ahmadi, Kuwait, on the Persian gulf. The world's largest oil jetty in 1952, it was capable of loading eight tankers simultaneously



TOTAL WORLD PRODUCTION OF PETROLEUM and output of the four principal producing countries, as compiled by *The Mineral Industry*



Table II.—U.S. Petroleum Production

Year	Crude oil (000 bbl.)	Natural gas liquids* (000 bbl.)	Total liquid petroleum (000 bbl.)	Natural gas (000,000 cu.ft. gross)
1939	1,264,952	54,148	1,319,110	3,333,500
1940	1,353,214	58,867	1,412,081	3,694,100
1941	1,402,228	84,290	1,486,518	4,103,500
1942	1,386,645	85,719	1,472,364	4,453,900
1943	1,505,613	90,116	1,595,729	5,160,560
1944	1,677,904	102,446	1,780,350	5,614,220
1945	1,713,655	114,884	1,828,539	5,902,180
1946	1,733,939	117,809	1,851,748	6,190,200
1947	1,856,987	132,863	1,989,850	6,733,230
1948	2,020,185	147,079	2,167,264	7,178,777
1949	1,841,940	157,275	1,999,215	7,546,825
1950	1,973,574	182,119	2,155,693	
1951*	2,244,529	205,723	2,450,252	
Jan.-Sept. 1951	1,667,120	150,424	1,817,544	†
1952	1,689,316	160,042	1,849,358	†

*Preliminary. †Not available.

Source: Bureau of Mines and API Weekly Summaries.

Table III.—U.S. Production of Motor Fuel

(In thousands of barrels of 42 gal.)

Year	Quantity	Year	Quantity
1939	611,043	1945	798,194
1940	616,695	1946	776,583
1941	701,294	1947	839,998
1942	608,900	1948	921,923
1943	608,180	1949	962,417
1944	739,340	1950	1,024,462
		1951*	1,139,511
Jan.-Sept. 1951	845,103	Daily average	3,096
1952	868,764	Daily average	3,171

*Preliminary.

Source: Bureau of Mines and API Weekly Summaries.

Table IV.—Gas Oil and Fuel Oil Produced in U.S. Refineries

(In thousands of barrels of 42 gal.)

Year	Gas oil and distillates	Residual fuel oil	Total fuel oil
1939	161,746	305,944	467,690
1940	183,304	316,221	499,525
1941	189,177	342,367	531,544
1942	196,714	358,901	555,615
1943	211,516	417,306	628,822
1944	239,152	461,455	700,607
1945	249,234	469,492	718,716
1946	287,896	431,364	719,260
1947	312,173	447,795	759,968
1948	380,700	466,317	847,017
1949	340,825	424,909	765,734
1950	398,912	425,217	824,129
1951*	475,801	469,377	945,178
Jan.-Sept. 1951	350,223	351,629	701,852
1952	381,917	339,227	721,144

*Preliminary.

Source: Bureau of Mines and API Weekly Summaries.

Iran suddenly cut middle east production by more than half at a critical time in the NATO (North Atlantic Treaty organization) and U.S. defense programs, these companies by having built up large crude oil production and reserves and refinery capacity in the middle east and elsewhere abroad were able almost single-handed to make up the deficit of 1,950,000 bbl. daily that menaced the west's defense plans and threatened to place a heavy burden on western hemisphere supply and reserves.

The year 1952 saw, despite a strike in the United States that paralyzed the industry for several weeks, a continued increase in domestic demand—a daily average gain of 74,000 bbl. for the first nine months compared with the corresponding period of 1951, and even a slight increase in domestic production for the period.

(L. M. F.)

Philadelphia. In 1952 the population of Philadelphia was approximately 2,100,000, calculated on the basis of a net surplus of 39,639 births over deaths during the previous two years and, possibly, a slight out-migration to the suburbs since the national census enumeration of 2,071,605 for April 1, 1950. The population of the entire eight-county Philadelphia metropolitan area was 3,671,048 in 1950, and was believed to have increased by at least 100,000 since that date.

Building construction remained active, with single-family

structures predominating in the residential field. However, several very large apartment developments indicated a continuing trend toward more multiple-dwelling units. In the commercial field, adjustment of shopping facilities to the needs of automotive travel was evidenced by new shopping centres with adequate parking space, addition of parking space adjacent to older commercial areas and at points convenient to rapid transit lines and further establishment of branch stores by centrally located business houses. While industrial expansion continued within the city, this was overshadowed by near completion of a large steel mill to the northeast of the city. According to figures compiled by the Chamber of Commerce of Greater Philadelphia, more than \$1,000,000,000 would have been spent on industrial construction in this area during the decade 1945-55.

The administration of Philadelphia during 1952 was Democratic; the mayor, Joseph S. Clark, Jr.

Reorganization of the city government in accordance with the new home rule charter, which became effective on Jan. 7, 1952, constituted a major undertaking of the new administration. Under the new charter, the mayor continued as the chief administrative officer but was assisted in the field of ceremonial and public relations activities by a city representative, in the administrative field by a managing director under whom nine departments were grouped, and in the field of municipal finance by a director of finance. The council, the legislative branch, was reduced from 22 members to 17, of whom 10 were district councilmen and 7 were councilmen at large.

Substantial progress was made on the construction of public improvements. The Charles K. Mills neurology building, a \$7,600,000 structure, was placed in operation; three new district health centres were completed and a fourth opened for service. Five new fire stations, three police stations, a combined police and fire station and a station for fireboats were added to the facilities of the police and fire services at a cost of \$1,900,000.

A youth study centre was constructed at a cost of \$2,700,000 for the detention and study of juvenile delinquents. Construction proceeded on two additional sewage treatment plants to cost \$13,000,000 and on the extensive system of intercepting sewers. In south Philadelphia a new incinerator was built at a cost of \$1,300,000.

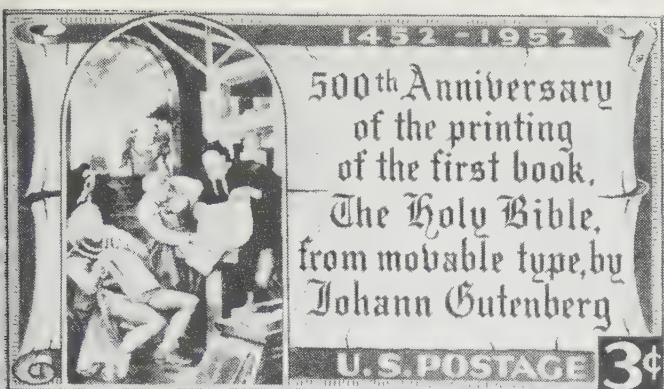
A major undertaking of the new administration was a review of the improvement programs of the various services to increase effectiveness without overburdening the city's financial resources.

(J. S. Ck.)

Philanthropy: see DONATIONS AND BEQUESTS.

Philately. During 1952 the United States issued ten commemorative stamps up to Sept. 15; three others were scheduled for the rest of the year, plus an air-mail issue. The number of new stamps issued by other American republics during the first eight months of the year was as follows:

	Regular	Air Mail
Argentina	0	0
Bolivia	6	6
Brazil	2	0
Chile	1	1
Colombia	0	10
Costa Rica	0	8
Cuba	4	1
Dominican Republic	0	0
Ecuador	5	6
Guatemala	0	0
Haiti	0	0
Honduras	0	0
Mexico	4	2
Nicaragua	0	0
Panamá	0	0
Paraguay	7	8
Peru	0	0
Salvador	6	8
Uruguay	12	4
Venezuela	0	3



COMMEMORATIVE three-cent stamp issued by the U.S. post office department in 1952 on the 500th anniversary of the printing of the Gutenberg Bible, the first book printed from movable type

New Issues.—The United States stamps were the Betsy Ross (carmine rose; Jan. 2); the 4-H clubs (blue green); the 125th anniversary of the Baltimore and Ohio charter (blue); the 50th anniversary of the founding of the American Automobile association (deep blue); the marquis de La Fayette (blue); the 5th anniversary of the North Atlantic Treaty organization (deep violet); the Grand Coulee dam (green); the Mt. Rushmore, Dakota (green); the 100th anniversary of the American Society of Civil Engineers; and the Women in the Armed Forces. All these were three-cent values. The three others scheduled for issue, also of three-cent value, were to honour the Gutenberg Bible, the newsboys and the International Red Cross. The air mail was an 80-cent value, for big packages. It had a view of Diamond Head, Hawaii.

The death of George VI meant that the entire British Commonwealth would have new stamps, with Queen Elizabeth II portrayed. The first were announced in August, and by the time of the coronation in June 1953 it was expected that all would be ready.

Exhibitions.—The 1952 exhibitions of the American Philatelic society and the Society of Philatelic Americans were held, respectively, in Philadelphia, Pa., and New York, N.Y. (See also POST OFFICE.)

BIBLIOGRAPHY.—The various catalogues—Scott in the U.S., Gibbons in Great Britain, Yvert & Tellier in France—appeared in the fall of 1952, bearing the 1953 imprint. Following the example of Gibbons, which publishes a "simplified" edition listing only types, not varieties, Scott published a "popular" edition. (M. H.A.)

Philippines, Republic of the. This republic, situated in the western Pacific ocean east of Indochina, comprises an archipelago composed of 7,083 islands, totalling 115,600 sq.mi. The 1948 population census totalled 19,234,182, and the 1952 population was estimated at 21,400,000. The chief city is Manila, whose metropolitan area held about 1,350,000 persons in 1952. The capital is officially designated as Quezon City, a suburb of metropolitan Manila, though the president's executive mansion and many national government offices remain in Manila proper. Other large cities in 1948 were Cebu (167,000) and Iloilo (110,000). In April 1952, the official record indicated 145,720 Chinese resident in the Philippines. On the same date there were 11,754 U.S. citizens and about 8,200 other aliens living in the islands. Most Filipinos are Catholic in religion (Roman Catholic or native Aglipayan Catholic). In the southern islands live about 800,000 Mohammedans, termed Moros, while approximately 425,000 Protestants and almost 700,000 pagans are widely scattered. President in 1952: Elpidio Quirino.

History.—During 1952 the political and economic situation of the Philippines continued to improve. The election of Nov. 1951 placed control of the Philippine senate in the hands of

the opposition, Nacionalista party, headed by Sen. José P. Laurel, and 1952 was marked by much political jockeying of the two major parties, Liberal (conservative) and Nacionalista, for control of congress, but no major splits or problems endangered the operation of government. President Quirino's emergency powers were cancelled by congress in February.

The vigorous military campaign against the Communist Hukbalahap begun in 1951, combined with issues of land to surrendering dissidents, led to claims that the serious Communist threat to the islands was ended. Small groups of Hukbalahap remained scattered throughout the main island of Luzon, but the double-barrelled program reduced the number and strength of the Communist forces, and raised the confidence of the population in its government.

The small trickle of migrants in past years, moving from the overcrowded central and northern islands into the relatively empty southern frontier island of Mindanao, increased during the year to the point where more than 20,000 people per month were entering Mindanao, settling chiefly in the two southern provinces of Davao and Cotabato.

Education.—During 1952 government appropriations for education ranked second to those for national defense. There were about 19,200 government-supported schools and colleges, with almost 5,000,000 students enrolled. A number of new agricultural high schools were opened during the year. In addition there were about 2,200 private schools and colleges, with about 500,000 students enrolled.

Finance.—Tax revenues increased during 1952 and permitted the formulation of a balanced budget for the fiscal year 1952-53. This budget estimated government income at U.S. \$298,888,000, with expenditures planned for a slightly lower figure. Significant expenditure allocations were: national defense 32%; education, which is nationally administered, 25%; agricultural and economic development 10%, which was a marked increase over previous budgetary allocations in this field. This budget allowed partial liquidation of deficits of previous years.

Agriculture, Trade and Industry.—The rehabilitation of Philippine economy, after the serious impact of World War II, was almost completed during 1952. Physical productivity exceeded prewar levels in most lines, and per-capita production about reached prewar levels, compensating for the increased population. Total land in crops for 1952 approximated 13,300,000 ac., compared with 12,530,000 in 1940. Acreage and production of food crops both stood higher than in 1940. Rice, the chief crop, was grown on about 5,540,000 ac. in 1952, compared with 5,137,000 in 1940, but production still fell short of consumption needs by roughly the same figure as in 1940. Acreage and production of export crops fell below 1940; sugar, tobacco and manila hemp being below and coconut above the 1940 figures. The animal and fowl population had increased to the point that meat and poultry foods approximated the prewar volume. The fisheries yield was greatly enlarged in 1952 and almost supplied domestic requirements.

The 1952 production of gold and copper lagged behind prewar production, but base metal production of chromite, manganese and iron was well above prewar averages. Production of domestic industrial products such as cement, textiles, toilet goods, tobacco products and lumber were well above prewar levels.

United States aid, through the Mutual Security administration, helped provide both technical assistance and money to import and distribute fertilizers, improve irrigation, stimulate rural industry and develop power sources to augment all productive aspects of the economy.

The road rehabilitation program of the U.S. bureau of public roads was completed in June, at which time the road system totalled 17,900 mi., of which about 85% were all weather roads.

The average agricultural wage, with regional variations, barely exceeded the new minimum wage law level of 87 cents per day, though industrial wages considerably exceeded the minimum level of \$2 per day. Both wage rates were trending upward slowly, but there was much difficulty over enforcement. Agricultural wages averaged about three times prewar wages, and industrial wages were slightly more than three times prewar levels. The cost-of-living index for Manila ranged from 355.1 in January to a low of 342.2 in May, compared with a 1941 base of 100, and then slowly rose during the latter part of the year.

The foreign trade balance was unfavourable during early 1952, with imports rising and exports not keeping pace, continuing the trend of late 1951. Import controls were tightened for the last half of the year. Exports by rank during the first half of 1952 were: coconut products, sugar, manila hemp, logs and lumber, iron ore, tobacco products, embroideries, pineapple and chromite. Ranking imports were: cotton products, petroleum, automotive equipment, machinery, grain foods, synthetic textiles, paper products, iron and steel, tobacco products and dairy products. The total value of exports for the first half of the year was \$188,300,000, whereas the value of imports was \$218,442,000. This unfavourable balance was offset by U.S. government expenditures so that total receipts were larger than disbursements. The international currency reserve remained fairly stable and on July 29 stood at U.S. \$304,100,000. The money supply at the end of June totalled U.S. \$566,250,000. The outstanding public debt on March 31 totalled U.S. \$400,155,000, a significant reduction from the figure of a year earlier. (J. E. Sp.)

Philosophy. There were no significant changes in the direction of philosophic activity during 1952 ex-

cept for an increase in philosophical scholarship that was reflected in a more widespread concern for the classics and a more intensified research in the history of ideas. There were numerous translations and reissues of earlier scholarly works. A complete French edition of the works of Étienne Bonnot de Condillac, edited by G. LeRoy, appeared as the first volumes of a *Corpus General Des Philosophes Français*, sponsored by the United Nations Educational, Scientific and Cultural organization (U.N.E.S.C.O.). The sixth edition of the monumental *Die Fragmente der Vorsokratiker* of Hermann Diels was a welcome addition to the instruments for classical research. "The Great Ideas," edited by Mortimer J. Adler, was published as a synoptic of "Great Books of the Western World."

The concern for human values, moral, spiritual and intellectual as well as economic and civic, continued during 1952 to command a large share of attention and effort. The continuation of wide-scale political unrest and economic uncertainty contributed to the fear of cultural dissolution that had in recent years prompted philosophy's growing appreciation of its responsibility to the life of the individual and of society. Value philosophy was equally constructive and analytic, with a marked emphasis upon religion and the wisdom of the past, but without neglecting current affairs and the sciences, particularly psychology and the social disciplines.

The ever-present interest in freedom was evidenced by the report of the International Federation of Philosophical Societies on the investigation concerning freedom inaugurated in 1950 by U.N.E.S.C.O. The project, which had world-wide participation, was devoted to the meanings of the concept of freedom, its present effect and its importance in current ideological conflict. Richard McKeon's *Freedom and History* dealt with "the semantics of philosophical controversies and ideological conflicts."

An abundance of literature appeared in 1952 on the problems of theoretical ethics and the good life. A. MacBeath's *Experiments in Living*, the Gifford lectures for 1948-49, was an analysis of ethical foundations in terms of social anthropology. Baker Brownell's *The College and the Community* was a critical and constructive analysis of the current practice of centralization and specialization in higher education. *The Community of Man* by Hugh Miller was a biologically oriented study of social development and present institutions.

The philosophy of religion continued the familiar three-cornered argument of the naturalistic humanists, who were revolting against the charge of sponsoring a demoralizing secularism, the liberal theists, who were striving to maintain a fine balance between science and traditional religious values, and the neo-orthodox, who had reverted to the pessimistic conception of man that had long characterized fundamentalism. Among the publications in religious philosophy were *God and Nature*, the second volume of G. F. Stout's Gifford lectures of 1919 and 1921; *Time and Eternity*, an essay by W. T. Stace; Wilbur Urban's *Humanity and Deity*; and John Baillie's *Natural Science and the Spiritual Life*. Announcement was made of the intended publication in England of *The Library of Christian Classics*, a 26-volume series of Christian texts from the earliest Fathers to the English reformers.

The insurgency of naturalistic humanism was expressed in the first International Congress on Humanism and Ethical Culture, which was convened in August at Amsterdam, Neth., under the presidency of Julian Huxley. The congress was sponsored by Dutch, Austrian, British and American humanist and ethical societies in the interest of a "universal democratic and rational civilization dedicated to the dignity and worth of man."

The problem of personality in its ontological, psychological, sociological and moral aspects received much attention in 1952. Plans were advanced in the United States for a World Confer-

ence on the Person to be held in Europe in the summer of 1953. Additions to the literature of personalistic philosophy included an English translation of a posthumous work, *Personalism*, by the French philosopher Emmanuel Mounier, and *The Person*, by the American Ralph Tyler Flewelling.

In scientific philosophy subjects relating to the physical sciences continued to be the centre of interest during 1952. Methodology, theory of causation, the concept of force, the philosophical postulates of physics and the nature of scientific law represented the problems receiving prominent attention. A volume of essays by the German physicist Werner Heisenberg, *Philosophic Problems of Nuclear Science*, was a provocative analysis of methodological and speculative issues. Erwin Schroedinger's *Science and Humanism*; *Physics in Our Time*, argued that the aim of science is philosophical rather than technological. In his Bampton lectures on the subject "Modern Science and Modern Man," James B. Conant examined the cultural significance of recent science.

In logic and the philosophy of mathematics numerous technical monographs and several English translations of standard works made their appearance. Rudolf Carnap's *The Continuum of Inductive Methods* concerned one of the most persistent problems of logic, while treatises on language and the problem of meaning continued the effort to achieve a theoretical foundation for the unity of knowledge. Among translations were Georg Cantor's *Contributions to the Founding of the Theory of Transfinite Numbers*, by Philip E. B. Jourdain, and *Translations from the Philosophical Writings of Gottlob Frege*, by Peter Geach and Max Black.

The year 1952 gave evidence of an increase in the interchange of ideas on both a regional and world-wide scale. Latin America showed considerable interest in European and North American philosophy, and Italian and Latin American philosophy received more than usual attention in English-speaking countries. Buenos Aires was host to a Conference on Important Aspects of North American Philosophy, and plans were made for the fourth Inter-American Congress of Philosophy to convene in Havana, Cuba, in Jan. 1953. The usual effort to contribute to world understanding through the exchange of ideas between orient and occident continued undiminished. Foreign fellowships, teaching exchanges, conferences, translations and joint publications were much in evidence. At the close of 1951 the U.N.E.S.C.O.-sponsored Conference on the Concept of Man and the Philosophy of Education in East and West was held in India under the presidency of S. Radhakrishnan. Plans were materialized also for the tenth International Congress of Philosophy to be held in Brussels, Belg., during Aug. 1953. The 11th symposium of the Conference on Science, Philosophy and Religion was published under the title, *Foundations of World Organization*.

(S. M. Mc.)

Phosphates: see MINERAL AND METAL PRODUCTION AND PRICES.

Photography. There were few basic changes in photography during 1952. However, the applications were extended through all fields of industry and in military and civilian use. The total production of equipment and sensitized goods was about 10% more than in 1951. The United States foreign trade in still picture photographic materials increased by 25% during the first quarter over the similar period for 1951. Imports amounted to \$3,557,704 during the first 1952 quarter, with about 53% coming from Germany. Exports during this period amounted to \$7,471,746, an increase of 7% over the previous year. Exports of X-ray film showed an increase of 40% over 1951. Production of photographic goods for civilian use was maintained without shortages in spite of heavy military

demands.

New Cameras.—Graflex, Inc., made a special combat camera for the army using 70-mm. roll film in 15-ft. lengths for making $2\frac{1}{4} \times 3\frac{1}{4}$ -in. negatives. This camera had all the important features of the better 35-mm. cameras, such as interchangeable lenses, automatic film advance with shutter setting, automatic exposure counter, built-in flash contacts, focal plane shutter and a combined view finder-range finder which adjusts automatically for the different lenses. The camera makes 50 individual $2\frac{1}{4} \times 3\frac{1}{4}$ exposures on each roll, and takes as many as 10 consecutive single exposures within five seconds. Built to withstand dust, light, fungus, moisture or driving rain and rough handling, it has a magnesium body and aluminum lens mount and weighs $5\frac{1}{2}$ lb. The larger picture produced has important advantages in rapid processing and reducing the time interval between taking and delivery of the prints.

The Bolsey Camera Corporation of America produced the N-9 Combat Recording camera using 16-mm. film in 50-ft. lengths. The camera is synchronized to the firing mechanism of jet fighter planes and operates automatically when the gun starts to shoot. The resulting film records the firing pattern upon the target.

Cologne, Ger., was the scene of the Third Photokina fair from April 26 to May 4. In addition to the exhibits by leading German firms there were displays from other nations, including England, Italy and the United States, making a total of 338 exhibitors. More than 100,000 visitors from all over the world attended the nine-day exhibition.

No radically different products were shown. More new 35-mm. cameras were on display than any other camera type. Most of these were in the medium-price range without range finders, and were made by a number of new firms in the photographic field. Some of these 35-mm. cameras included the Condor II, Futura S, Akarex, Paxette, Finetta 99, Diax 1a, Ucaflex, Contina and Photovit, in addition to the old-timers such as the Leica and Contax cameras.

Zeiss Ikon AG, Stuttgart, Ger., exhibited the new Ikonflex IIa, and Ihagee Kamerawerk Aktiengesellschaft, Dresden, showed its new single-lens reflex, the 6 x 6-cm. Exacta. The only new press-type camera was the Bertram, made by E. U. W. Bertram of Munich-Pasing. This camera makes $2\frac{1}{4} \times 3\frac{1}{4}$ -in. negatives on roll film, sheet film or film packs. The built-in range finder automatically couples with a number of interchangeable lenses. Parallax compensation is automatic and the view-finder field automatically changes as different focal-length lenses are attached. The shutter is synchronized Compur-Rapid, which is cocked and released with a single button. Zeiss Ikon introduced the Movikon 8, an 8-mm. roll-type motion-picture camera which is oblong and held in the horizontal position. It operates at 16 frames per second and the lens has a maximum aperture of f/1.9.

Fotorex, St. Étienne, Fr., brought out the first $2\frac{1}{4} \times 2\frac{1}{4}$ twin-lens reflex camera with interchangeable lenses. Each lens pair, including shutter, is mounted on a metal lens board which is locked into position on the camera when in use.

During the year, Eastman Kodak company introduced the 35-mm. Kodak Retinette for the lower-priced 35-mm. camera field. Its shutter speeds range from 1 sec. to $\frac{1}{300}$ sec., delayed-action setting and built-in flash synchronization. The Fairchild Camera and Instrument company developed the CAX-12 aerial camera for use in the new high-speed jet photo planes. This new camera uses removable magazines holding up to 100 ft. of 70-mm. roll film, producing $2\frac{1}{4}$ -in. square pictures. It is designed with high-speed film movements so that the photo pilot can speed over the ground objectives, get the pictures and then rush out of anti-aircraft range much faster than with the slower cameras.



70-MM. COMBAT CAMERA developed by the U.S. signal corps, as announced in May 1952. The camera could take ten pictures in five seconds, and was impervious to dust, light, fungus, moisture or driving rain

A notable camera improvement was the introduction by the Polaroid corporation of the new Polaroid Pathfinder Land Camera Model 110, which produces a finished picture within 60 sec. The Pathfinder was designed to fit the requirements of press and commercial photographers, industrial users and advanced amateurs. This camera has a Wollensak Raptar f/4.5 5-in. lens, coupled Kalart synchronized range finder, shutter speeds from 1 sec. up to $\frac{1}{400}$ sec. and built-in synchronization for all flash lamps. The Pathfinder camera uses the standard Polaroid Type 41 picture roll with an ASA rating of 100 for producing finished prints within one minute.

Bell & Howell company had new Model 200 and 200-T 16-mm. magazine-load motion-picture cameras in production. Important features included improved view finders, a new ratchet key for quick winding of film, five speeds ranging from 16 to 64 frames per second, and the two-lens turret for the 200-T model. These cameras won the Society of Motion Picture Art Directors' award for 1952.

A new Bell & Howell magnetic recording projector, Filmosound 202, provided for a simplified sound-on-film process for the 16-mm. motion-picture photographer. This projector records and plays back magnetic sound by means of a stripe of magnetic material on the film edge. As the film is projected for the first time, sound is recorded and stored on the magnetic stripe, ready for instant playback or for future projection. To record a magnetic sound track, it is necessary to merely plug in the microphone, start the projector and describe what is seen on the screen. A service was also available for converting existing silent films into sound motion pictures.

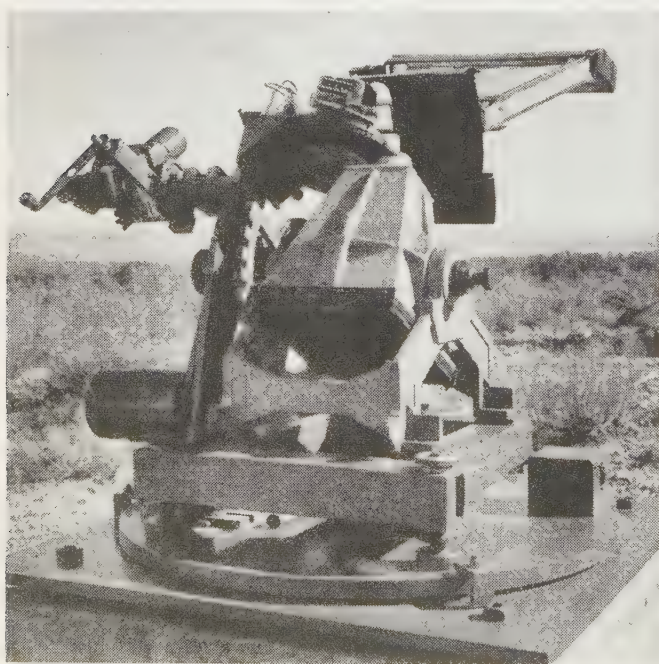
A magnetic sound track striping service for single-perforated processed Kodak 16-mm. film was available from the Eastman Kodak company, known as Kodak Sonotrack Coating.

Stereoscopic Photography.—Stereoscopic photography was gaining new interest in the European countries, and in the United States it was increasing rapidly, with the Stereo-Realist camera outselling all others. The German 35-mm. Iloca Stereo camera was in production, and other camera manufacturers were making stereoscopic attachments for their regular 35-mm. cam-

eras. Paillard-Bolex of Switzerland showed a stereoscopic attachment for the 16-mm. motion-picture Bolex camera; projection was possible by using polaroid spectacles when viewing the screened image. The Nord company of Minneapolis, Minn., developed camera and projector converters working on the beam-splitting principle for transforming 16-mm. cameras or projectors into a three-dimensional motion-picture system. The View-Master Personal Stereo camera was another new development in the 35-mm. stereoscopic camera field.

Flash Photography.—The main developments in flash photography were in the small portable electronic flash outfits, using wet- and dry-cell batteries. Some of the new German units were the Multiblitz made by Mannesmann, the Ionenblitz by Schaufele and the Ikotron by Zeiss Ikon. In the United States, Strobo Research introduced the SR Strobflash II operated by two 225-v. dry batteries in series. The capacitors are charged directly from the dry battery, making it possible to flash the unit every three or four seconds for rapid synchronization with the camera shutter. Approximately 2,000 flashes can be obtained from one set of batteries. The guide number for fast Panchromatic film is 220 and 35 to 45 for colour film. Other new portable electronic flash units made in the United States were the Rocket 100-w.-sec. and 200-w.-sec. models made by Johnson Ventlite. The Photogenic Machine company introduced the 100-w.-sec. Little Giant. In England Clive Courtenay & Co., Ltd., made the new Master III electronic flash rated at 100-w.-sec. and powered from a wet battery which can be charged directly from a 110-v. alternating current line.

Many changes and some new units were produced for flashing the single bulb which is discarded after each flash. Sylvania produced the new Superflash FP 26 blue focal plane lamp and General Electric the No. 11B blue lamp and the No. 6B blue focal plane lamp. The Kalart company extended the applications of their improved B-C Flash Unit for use with almost every type of camera. These B-C units are powered by a small 22½-v. battery which charges a capacitor and provides a powerful surge of electrical energy to overcome circuit resistances and assure consistent synchronization. Two of the new Kalart B-C Flash Units were available for the Argus and Bolsey 35-mm. cameras.



BALLISTIC CAMERA for obtaining highly accurate trajectory data on rockets and missiles. It was used at the ballistic research laboratories, Aberdeen proving grounds, Md., in 1952, where numerous problems in rocket research were being solved by photography

Anso showed the new Anso Flash Unit at the Photographic convention in St. Louis, Mo. This unit can be attached to the European-type cameras as well as to others which have different tripod sockets.

Film.—Two new panchromatic reversal 16-mm. motion-picture films were introduced during the year by the Photo Products department of the E. I. du Pont de Nemours and Company. These films were designed to give the best pictorial and single system sound results for professional television and motion-picture use. Type 930 was an improved fine-grain film for rapid reversal processing, and type 931 was a new high-speed reversal film combining greatest picture speed with fast processing characteristics. Drastically reduced processing times were made possible through use of elevated processing temperatures which these superhardened emulsions had been designed to withstand. The two films were especially suited to reversal processing for immediate use when only one positive is required, as in coverage of local events for television and records of sporting events.

The du Pont company also announced that it had developed an entirely new type of film base, identified chemically as a polyester, being a condensation polymer obtained from ethylene glycol and terephthalic acid. The new safety-type material was extremely tough and durable and had remarkable dimensional stability. These qualities appeared to make it particularly promising for motion-picture and graphic arts film. Du Pont stated that commercial production would have to await the results of extensive field evaluation tests.

A new special loading of 35-mm. Kodachrome Film, Daylight Type, for use in stereo cameras, and a new stereo mounting service for stereo pictures was put into operation. When this special packaged film is sent to the Kodak laboratory for processing it is returned in stereo mounts ready for use in the small hand stereo viewers.

A new Kodak Ektachrome Roll Film, Type B, was available for picture taking indoors with artificial illumination including flash. It was available in eight-exposure rolls in sizes 620 and 120, and the speed rating was ASA 10 for tungsten illumination.

There was nothing basically new in colour photography for the year.

Eastman Kodak company introduced a new infra-red-sensitive 16-mm. and 35-mm. motion-picture film known as Kodak Spectroscopic I-N Film. This film, originally intended for use by spectrographic laboratories, had a total red speed greater than any other material on the market. In early tests successful motion pictures were made of audience reactions when house lights in a theatre were dimmed to one-seventieth of normal room illumination. It is also of special value in high-speed photography such as showing the flow and action of molten or hot metals.

Anso announced a new type of ultra fine-grain developer and replenisher called Finex-L. This developer gives desired film negative results without loss in film speed, which is often the case with some of the fine-grain developers.

The Polaroid company announced its new type of X-ray film for producing finished 10-in. square positive X-ray pictures within one minute after exposure. The exposure is made in the usual way, but the special Polaroid X-ray film is used instead of the conventional film. The film packet is then run through special steel rolls, the developing solution is squeezed over the surface automatically and the final print is ready. It was expected that this new-type X-ray film would revolutionize the battlefield diagnosis and treatment of wounds. Since no dark-room or special lighting is necessary, and specially trained personnel are not required to process the film, doctors would

be able to locate shell fragments and perform other types of diagnoses close behind the front lines. Other applications in hospitals include the picture-in-a-minute photography of bone operations, fractured hips and foreign bodies.

Microphotography.—New equipment in the microphotography field included improvements in the standard 16-mm. and 35-mm. flat bed and rotary cameras. New reading equipment emphasizing portability and versatility appeared on the market. These included the Griscombe Newspaper and the Griscombe Portable reading machines, the Recordak, model MPE, reader and the Lovins reading machine, all featuring opaque screens. The Diebold translucent screen reader, equipped to project sheet microfilm, was the first to appear on the U.S. market. There was also the Readex Microprint Reader and the Microcard Reader, Model 3.

Other Events.—The World Exhibition of Photography at Lucerne, Switz., was held to demonstrate the high commercial, scientific and cultural importance of the photographic picture and to accentuate its specific technical and artistic development. This exhibition contained photographs from many nations of the world, including Finland, France, Great Britain, Guatemala, Japan, Italy, Israel, Austria, Spain, the Netherlands, the Union of South Africa, Germany and the United States.

Attendance at and membership in camera clubs throughout the United States dropped during 1952, a situation blamed to some extent upon the popularity of television. The International exhibition of the Photographic Society of America was held at New York city, Aug. 12-16, with sections devoted to colour slides and prints, motion pictures, nature, photo-journalism, pictorialism, stereo and technical. At the society's 1952 convention, held at the same time, 86 photographers and photographic technicians were honoured with fellowships and associateships. During nine sessions of the technical division, 45 papers were presented. (See also MOTION PICTURES; MUNITIONS OF WAR; NEWSPAPERS AND MAGAZINES; X-RAY AND RADIOLOGY.)

(W. D. MN.)

Physics. Nuclear Physics.—In May 1952 the builders of the new giant cyclotron (or "cosmotron" as it had come to be called) at the Brookhaven National laboratory, Upton, N.Y., accelerated protons to an energy of 2,000,000,000 e.v., thereby achieving a severalfold increase over the peak energy of the previous record holder, the giant University of Chicago accelerator. Thus, in the space of about 20 years, since E. O. Lawrence accelerated particles to energies of about 1,000,000 ev with his first cyclotron, a thousandfold increase had been reached in elementary particle acceleration. But there was hardly a pause for rest in the climb toward higher energies. In September E. D. Courant, M. S. Livingston and H. S. Snyder, all working at Brookhaven, announced the discovery of a new arrangement of the magnets which keep particles in a path as they are being accelerated. The discovery gave promise that the focusing of the particles could be much more efficiently achieved than in the cosmotron and other accelerators, with the result that with approximately the same amount of material as was used in the cosmotron, an accelerator that would accelerate particles to 50,000,000,000 ev could be constructed. Accordingly, plans were begun for such an instrument. With the prospect of energies in the multibillion-ev range, physicists looked forward to reactions in which protons and neutrons are formed, just as electron-positron pairs and mesons were formed with energies from the accelerators actually operating in 1952.

In April, by agreement among the governments of the United States, the United Kingdom and Canada, important data necessary for the understanding and development of low-energy nuclear reactors were released. Such values as the constants that



PHOTOGRAPH of the screen of an oscilloscope at Brookhaven National laboratory, Upton, N.Y., showing atomic particles accelerated to 1,300,000,000 v. by the laboratory's cosmotron, May 20, 1952. The trace indicates the beam intensity as it was being accelerated in the magnet gap

indicate the fission and neutron capture properties of uranium isotopes were included. One remarkable measured value that was made public was the one that indicated the tendency of the isotope xenon 136 to capture slow neutrons. The ability of a nucleus to take up neutrons is expressed in terms of the "capture cross-section," and is of the order of tens, in appropriate units, for most nucleuses, but for xenon 136 the number is the astonishingly large one of 3,500,000.

The Atomic Energy commission made public the details of a relatively simple low-power (ten kilowatts) nuclear pile, known as the "swimming pool reactor." Instead of being surrounded by massive concrete walls, which shield operators from the penetrating radiations formed in a pile, the unit is submerged in a tank of water of about the same dimensions as an ordinary indoor swimming pool. The water acts as an effective shield and test samples may be given radiation of varying intensities by being placed in the water at various distances from the pile. The cost of the entire installation was less than \$250,000; the feasibility of a comparatively inexpensive nuclear pile for research purposes was thereby indicated.

D. A. Glaser of the University of Michigan, Ann Arbor, reported his work on the development of a liquid detector for the paths of elementary particles, analogous to the Wilson cloud chamber that had been since the early years of the century perhaps the primary tool of the atomic and nuclear physicist. In the cloud chamber the path of a charged particle, as an electron or proton, is made visible because of the condensation of liquid droplets on the ions produced by the particle along its path. Glaser used superheated liquids and proposed that the path of the particle would become visible because of the vapour droplets that would form on the path ions, somewhat as droplets form in a freshly poured glass of a carbonated beverage. A liquid detector would be desirable for very high energy particles compared with a cloud chamber, because the paths of the particles would be much shorter in liquids, with their dense packing of molecules, than in gases.

The Neutrino.—Among nature's most elusive entities is the one named "neutrino." The principle of the conservation of energy is a keystone of physics; but some radioactive decay processes do not give masses and energies that add up to a final energy equal to the original energy, unless a hypothetical particle, the neutrino, is assumed to carry off energy in the decay process. Although the neutrino had been called into existence about 20 years previously on the basis of nothing more than a faith in the energy conservation principle, various evi-

dences for its existence had been accumulating, and two important new observations relating to the neutrino were reported during the year, by J. S. Allen and collaborators of the University of Illinois, Urbana, and Raymond Davis, Jr., of the Brookhaven National laboratory.

No one expected to see a neutrino, or even a path showing its passage through matter, as with an electron or proton. But a direct measurement of its recoil effect, on an atom which emitted it, had been sought for several years and was successfully achieved by both Allen and Davis. Allen studied a reaction in which radioactive argon nucleuses became chlorine nucleuses by capture of orbital electrons from the atomic electrons surrounding them. Theory based on energy conservation predicted that a neutrino, carrying away a definite amount of energy, should be emitted during the reaction. Allen constructed an ingenious apparatus for measuring the recoil velocity of chlorine atoms just after their formation from argon atoms; his results definitely indicated that energy was carried off from each nucleus in a single direction, giving the nucleus the theoretically expected recoil energy. Davis also studied an "electron capture" radioactive transition: the one in which radioactive beryllium nucleuses become lithium nucleuses. In his apparatus the beryllium, a solid, was deposited as an ultrathin metallic layer, and the recoil velocities of the lithium ions formed from the beryllium were measured by use of the effects of an electrical field on the ions. He, too, found evidence that the emitted energy went off in a definite direction. Davis' results also confirmed, in agreement with results of other experimenters, that although neutrinos can carry off varying amounts of energy in various processes, their mass at rest must be zero or very small: at most, much less than the mass of an electron.

Cosmic Rays.—Many further observations of V-particles—the new particles whose existence had been definitely established in the previous year—were made in connection with studies of cosmic radiations. The accumulation of data on other aspects of cosmic rays was continued by many workers. J. R. Winckler of the University of Minnesota, Minneapolis, introduced what promised to be a valuable new technique in cosmic ray research. The velocity of light in a vacuum is the maximum attainable velocity in nature; in matter, however, light travels somewhat slower than in a vacuum, and a high-energy particle may travel through a given substance with a velocity greater than the velocity of light in that substance. When a charged particle does move through a substance with a velocity greater than that of light in the substance, it emits a kind of light which is known after its discoverer as Čerenkov radiation. Winckler constructed a detector in which the cosmic ray particles pass through a leucite block, which has a photomultiplier tube attached on one face. Fast-moving particles which enter within a given cone of directions give rise to Čerenkov radiation which is detected by the photo tube. The apparatus thereby gives a convenient way of determining particle directions.

Crystal Growth.—There were interesting developments in a little publicized field of physical research, that of crystal structure and growth. It had been known for several years that the simple growth rate equation for crystals did not always agree with rate measurements. This equation had been derived on straightforward considerations of the concentration of crystal atoms in the liquid surrounding a growing crystal, the chances of a new crystal nucleus being formed and the energy required for the laying down of a flat crystal layer (as was assumed) of unit area on the crystal face. In 1949 F. C. Frank of the University of Bristol, Eng., had suggested and theoretically justified a growth equation based on an assumption of crystal growth in which the crystal thickens not by accretions of successive flat layers but a spiral growth: an edge grows so as to

give a broad base, a relatively small tip and a continuous setback edge that winds up in the form of a spiral. Shortly after Frank proposed his theory, the first evidence for it had come from studies on beryl by J. Griffin of the University of London.

Striking further evidence on the spiral growth formations came from a number of laboratories, chiefly in England. A. J. Forty of Bristol, for one, presented photographs of the spiral formations in cadmium iodide. Paraffin, silicon carbide, gold and mica were among other crystals for which spiral growth was reported. The individual formations were small in size but were very clearly photographed with the use of ordinary optical microscopes or by use of optical interferometric methods. The spiral growth originates in a "screw dislocation" in the crystal, which is a kind of irregularity, in the lattice of atoms in the crystal, that may provide growing edges on the crystal face. These edges serve as nucleuses for crystal growth, and the geometry of the dislocation is such that growth is in the form of the spirals that were observed.

Fundamental Theory.—Two theoretical developments—both of a tentative nature but both addressed to basic problems in contemporary physics—attracted wide attention during the year. One was the new electromagnetic theory proposed by P. A. M. Dirac of Cambridge university. The other was a reinterpretation of quantum mechanics suggested by David Bohm of Princeton university and the University of São Paulo, Braz.

The establishment of definite values for the mass and charge of the elementary particles of nature, as for example the electron, naturally led to the question, why should a given particle have the fixed and definite charge and rest mass value that it does have? Physicists want to make their science as much a deductive system as is possible, so that any given fact or relation of nature is not an isolated fact but is required by other facts or relations. Hence, a satisfactory theory which would state why the electron has its definite charge and mass would be an important achievement. Dirac's new electromagnetic theory represented a step in this direction. He cast the fundamental equations of electromagnetic theory—the theory that is usually expressed in terms of Maxwell's four equations—in a form such that the charge or mass of the electron does not enter alone, but only in the ratio of charge to mass. This ratio may be determined experimentally without explicit knowledge or measurement of the value of mass or charge. It was Dirac's hope that in a further development of the theory the values of charge and mass would appear as necessary consequences. In the stage of development so far reached the theory would not have attracted wide attention were it not that Dirac's new formalism indicated that the ether is necessary for electromagnetic phenomena. The ether as a substratum for light waves and all other electromagnetic phenomena had presumably been disposed of several decades before by the Michelson-Morley experiment and the special theory of relativity; but in Dirac's new theory the ether reappeared with properties such that it could not be dismissed on the grounds of the previous arguments against it. Dirac's proposal was of course no more than a cogent suggestion, and he himself wrote: "The existence of an ether has not been proved, of course, because my new electrodynamics has not yet justified itself."

Bohm's work was an attempt toward finding "hidden variables," as he termed them, which would remove the indeterminate, statistical nature of physics on the atomic and subatomic level. It has been a consequence of modern quantum physics that the behaviour of a particle or light wave cannot be completely and precisely described or predicted. This limitation, although generally accepted, had been philosophically unsatisfying to many physicists. Bohm suggested an ingenious reinterpretation of the fundamental equations of quantum theory which

allows us to consider physical events, even on the smallest scale, to be completely determined. Refinements beyond current physics would be required before complete, detailed descriptions could be given of such events; but on the usual quantum theory point of view, such refinements are not even in principle possible. Bohm's reinterpretation assumes that elementary particles are point particles in space, as in classical physics, rather than entities with both point and wave properties. To some physicists the suggestions of Bohm seemed to be a regression, but the interest shown in his work indicated the widespread concern over the quantum theory. In spite of its great success in giving a theory of atomic structure, quantum theory, as Bohm and many others pointed out, was not properly correlating or explaining physical phenomena where distances less than about 10^{-13} cm. are involved. The opinion that some kind of fundamental extension or change in quantum theory is necessary was commonly expressed. (See also ELECTRONICS; STANDARDS, NATIONAL BUREAU OF.) (RI. SL.)

Physiology. In an emergency the manual method of artificial respiration may be a lifesaving measure. It has the advantage that it can be instituted promptly, and no additional material or equipment is needed. In 1948 a comparative study of the common methods (Schäfer, Sylvester, Nielsen) was begun. The results were reported in 1951-52 and constitute the most significant assay of manual artificial respiration ever carried out.

Information was obtained in each of the methods studied concerning the volume of air moved, the aeration of the blood, the air flow patterns, the energy expended by the operator and the fatigue he experienced, and the "teachability" of the method.

The method recommended as a result of this study was a modification of the Danish Nielsen method, which will be referred to as the arm-lift back-pressure method (ALBP). In the conventional Schäfer method air is expelled by pressure on the back of the prone subject. Air is taken in by the recoil of the chest when the pressure is removed. There is evidence that, when performed at the standard rate of 12 times per minute, the chest does not expand to the resting level.

In the various push-pull methods including ALBP there is the additional advantage of enlarging the chest above the resting level during the inspiratory (pull) phase. Studies on normal adults, rendered unable to breathe spontaneously by anaesthesia and curare, show that the push-pull methods of artificial respiration yielded two to three times the ventilation obtained by the Schäfer method.

The studies on oxygenation of the blood also demonstrated the superiority of the push-pull methods over the Schäfer method. The former were adequate to sustain the normal anaesthetized, curarized subject throughout the 15-minute experimental period, whereas the Schäfer method had to be discontinued in three out of nine cases because of alarming cyanosis and low blood oxygen levels.

The Schäfer method was least taxing on the operator. The hip-lift back-pressure method required the greatest energy expenditure, while the recommended ALBP was intermediate. The Sylvester method gave good ventilation and required only a moderate expenditure of energy, but showed the serious disadvantage that with the subject lying on his back, the tongue tends to drop back into the pharynx, occluding the air passages.

The Arm-Lift Back-Pressure Method.—The subject is placed in the prone position with the hands on top of each other, the forehead resting on the hands with the face turned slightly to one side. The subject's elbows extend laterally. The operator kneels on one or both knees in front of the subject's head. He places his hands under the subject's arms above the elbow and

rocks backward, drawing the arms upward and toward himself. They are elevated until firm resistance is met, then replaced on the floor. The operator then moves his hands to the area just below the scapula (shoulder blade) and rocks forward, exerting pressure on the back. The position of the operator's hands is such that the thumbs lie close to the spine and the fingers are separated extending posteriorly and laterally. The complete cycle is repeated about 10 to 12 times a minute.

Observations on an Isolated Loop of Human Jejunum.—The opportunity to make observations on an isolated loop of human intestine rarely occurs. W. P. U. Jackson recorded his observations on a patient who had a loop of intestine slung deep to the anterior abdominal wall with both ends opening out through the skin. The isolated loop retained its blood supply. The continuity of the severed intestinal tract was restored. The purpose was to construct an artificial oesophagus with the loop, at a later operation, replacing an oesophagus completely closed by stricture. The patient was fed through an opening in the stomach.

Peristalsis was easily observed at the exposed ends and caused rippling of the abdominal wall with a maximum frequency of ten waves per minute. The wave might start or end at different points on the loop. Peristalsis was evoked by stroking the exposed ends or by the injection of fluid. The waves became violent when 10 to 15 ml. of fluid were injected into the upper end. Movements suggesting rhythmic segmentation were observed. In this case there was repetitive contraction and relaxation without onward propulsion of the contents. Pain felt in the umbilical region was produced by tightly tying the lower protruding end with tape.

Unlike the mucosa of the stomach, the colour of the jejunum was not affected by the patient's mood. Adrenaline and noradrenaline applied locally constricted the mucosal vessels, causing blanching for many minutes.

The secretions were collected and found to contain a trypsin-like ferment, a lipase, multase, amylase and invertase. The order of the rate of absorption of monosaccharides seems to be that found in animals, galactose > glucose >> fructose > pentoses.

Atmospheric Oxygen and the Human Cornea.—The use of contact lenses over the eyes may result in an increasing haziness of vision and the appearance of halos on looking at bright sources of light. These effects disappear on removal of the lenses.

The transparent cornea does not have blood vessels like other parts of the body. It might obtain oxygen from the atmosphere and lose water to it. George K. Smelser and V. Ozanics studied the effect of modifying the atmosphere in contact with the human cornea by fitting four subjects with diving goggles equipped with tubes through which the desired gas could be passed continuously. At intervals the subject would direct his gaze toward a bright light source to test for the appearance of halos. No halos were produced by exposing the cornea to moist air or moist air-carbon dioxide mixtures. Bright halos developed in two to three hours when dry nitrogen was used, and vision was hazy for a short time after the goggles were removed. This shows the effect of a lack of oxygen. Still brighter halos resulted when water-saturated nitrogen was used. In this case evaporation of water from the cornea was prevented and a tendency toward hydration presumably occurred.

Contact lenses with stoppered openings were fitted to the four subjects and caused definite halos in $1\frac{1}{2}$ hours. The addition of nitrogen bubbles to the contact lens fluid did not affect the halo development, but the introduction of oxygen bubbles under the lens prevented the appearance of the halos in experiments lasting seven hours. These results indicated that contact

lenses interfere with the oxygen supply to the cornea.

Sludged Blood.—Normally the circulating red blood cells are not agglutinated but tend to repel each other slightly. In a variety of clinical conditions in man and animals many blood cells may become agglutinated into masses, a condition referred to as sludged blood.

Edward H. Bloch and Allen Powell demonstrated for the first time by means of the electron microscope a coating on human red cells from sludged blood. The magnifications used ranged from 3,500 to 20,000 times, much higher than could be obtained from a microscope using light. The coating covered the entire cell surface, was irregular in outline, varied in thickness and was relatively amorphous, even with the higher magnification. The diameter of the sludged red cells was increased. Bridges connecting the individual cells were seen and photographed. The red blood cells from persons with healthy circulations have surfaces with a sharp outline. Previously it was possible to demonstrate, by dark-field microscopy of red blood cells taken from a rhesus monkey with malaria, that the cells were held together by a highly refractile substance. By microdissection this coating could be drawn into long, highly refractile, viscous elements. The origin of the coating on the red cells was unknown. It could be derived from the red cells or from the plasma.

In an earlier article M. H. Knisely *et al.* described a method for observing the clumping of red blood cells while circulating in the blood vessels of man and animals. The clumps formed may be large or small. They may break up or may combine to form larger clumps. A blood vessel may be blocked permanently or, more often, only temporarily.

The blood flow through the conjunctival vessels of hundreds of living unanaesthetized human beings had been observed, using a microscope and reflected light. H. Zilliacus and T. Arajärvi, employing this method, found evidence of sludged blood in 12 Rh-immunized newborn infants, whereas it was absent in healthy children.

Severe trauma occurring at birth or infections developing in infancy may also be accompanied by clumping of red blood cells.

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Pig Iron: see IRON AND STEEL.

Pigs: see LIVESTOCK.

Pinay, Antoine (1891-), French industrialist and statesman, was born at Saint-Symphorien-sur-Coise, Rhône, Fr., Dec. 30. He was educated at the Marist Fathers' secondary school at Saint-Chamond, Loire, and entered a tannery business in the same town. He was wounded in World War I and won the *médaille militaire* and the *croix de guerre*. His first elective office was that of mayor of Saint-Chamond (1932). In 1936 he was elected to the chamber of deputies as an Independent Radical (that is, a moderate conservative) and in 1938 as senator for the Loire *département*. He was one of the 569 parliamentarians who on July 10, 1940, voted at Vichy full executive and legislative powers to Henri Pétain as head of the *état français*. In 1941 he was appointed to the short-lived *conseil national* set up by Pétain, but subsequently took a courageous stand against the Germans, as a result of which he was freed in 1945 from the "ineligibility" restriction imposed on deputies and senators who had supported the Vichy regime. In Nov. 1946 he was elected to the national assembly as an Independent Republican (*i.e.*, conservative) and re-elected in June 1951 with the same label. He was undersecretary of state for economic affairs in the first Queuille cabinet (Sept. 1948-Oct. 1949) and became minister of transport in the first Plevin cabinet (July 1950), a post he held until his election to the premiership on March 6, 1952. He resigned on Dec. 22.

Pineapples: see FRUIT.

Pittsburgh. The most notable event in 1952 in Pittsburgh's improvement program was the opening of the \$32,000,000 greater Pittsburgh airport, covering 1,600 ac., and with a principal runway 8,000 ft. in length. Five new multi-story office buildings were occupied or neared completion, to add 1,800,000 sq.ft. of space in the Golden Triangle. The Pittsburgh Parking authority completed two garages to accommodate 1,594 motor cars and a city block was demolished to build an underground garage housing 900 more.

The Allegheny Conference on Community Development turned to the stimulation of cultural activities. The year marked Pittsburgh's first International Contemporary Music festival. William Steinberg became conductor of the Pittsburgh Symphony orchestra. The Pittsburgh Playhouse doubled its plant for theatre and school. An extensive program of playground improvements neared completion and a new aviary was opened.

The University of Pittsburgh completed a modern field house and further enlarged its medical centre. Duquesne university dedicated the first building in a \$12,000,000 program. The Pennsylvania College for Women broke ground for three new buildings. The Carnegie Institute of Technology opened a \$6,000,000 graduate school of industrial administration provided by the gift of W. L. Mellon.

Studies of the north side and lower hill areas, the latter a possible location for a new civic and recreational centre, were advanced. Long-term engineering studies of water supply, stream purification and sewage disposal progressed.

A prolonged steel strike depressed production, trade and transportation. In the first nine months of 1952 business activity stood at 169.6% of the 1935-39 average, 12.7% less than for the corresponding period of 1951, according to the Bureau of Business Research of the University of Pittsburgh. The rate of steel operations for 40 weeks was 77% of capacity, 21.9% less than in the last corresponding period. Bituminous coal production went down 17.4% for the first three quarters. Department store sales for the first 40 weeks, however, were only 5.4%

less than in the corresponding period of 1951.

Taxable real estate in Pittsburgh was \$102,813,256; in Allegheny county, \$2,330,000. Pittsburgh's population, 1950 census, was 676,806, the 12th city in the nation, and that of Allegheny county, 1,515,237. The Pittsburgh metropolitan district numbered 2,213,236. David L. Lawrence was mayor of Pittsburgh in 1952. (C. F. Ls.)

Pius XII (1876-), the 262nd successor of St. Peter in the see of Rome, was elected by the cardinals in conclave on his 63rd birthday, March 2, 1939, and was crowned as pope on March 12. (See *Encyclopædia Britannica*.)

Pope Pius sanctioned European unity during 1952 in addressing a European pilgrimage. "... if today political personalities are conscious of their responsibility, if statesmen work for the unification of Europe, for its peace and for the peace of the world, the Church in truth cannot remain indifferent to their efforts, but sustains them with all the strength of its sacrifices, and of its prayers," his holiness said. He also urged the people of Germany to feel and remain united across the political barriers that divided their country and reminded them that "as long as any believers exist, even if in chains, materialism cannot speak of victory."

The pope, in an apostolic constitution, ordered the Consistorial Congregation to create a Supreme Council of Emigration and an International Secretariat General of the Apostolate of the Sea. He founded at the same time the new office of Delegate for Emigration to promote and co-ordinate pastoral activities on behalf of emigrants of all categories and nationalities.

An apostolic letter beamed to the people of the Soviet Union dedicated them to the Virgin Mary and called upon the Soviet people to resist, if necessary unto death, the atheistic and materialistic features of communism.

Broadcasting over the Vatican radio on the occasion of Family day, his holiness declared it the right and duty of the church to teach and interpret divine law not only as it affects the behaviour of individuals but also in its bearing upon public, economic and social life and upon the actions of all lawful authorities, both at home and abroad, in peace and in war.

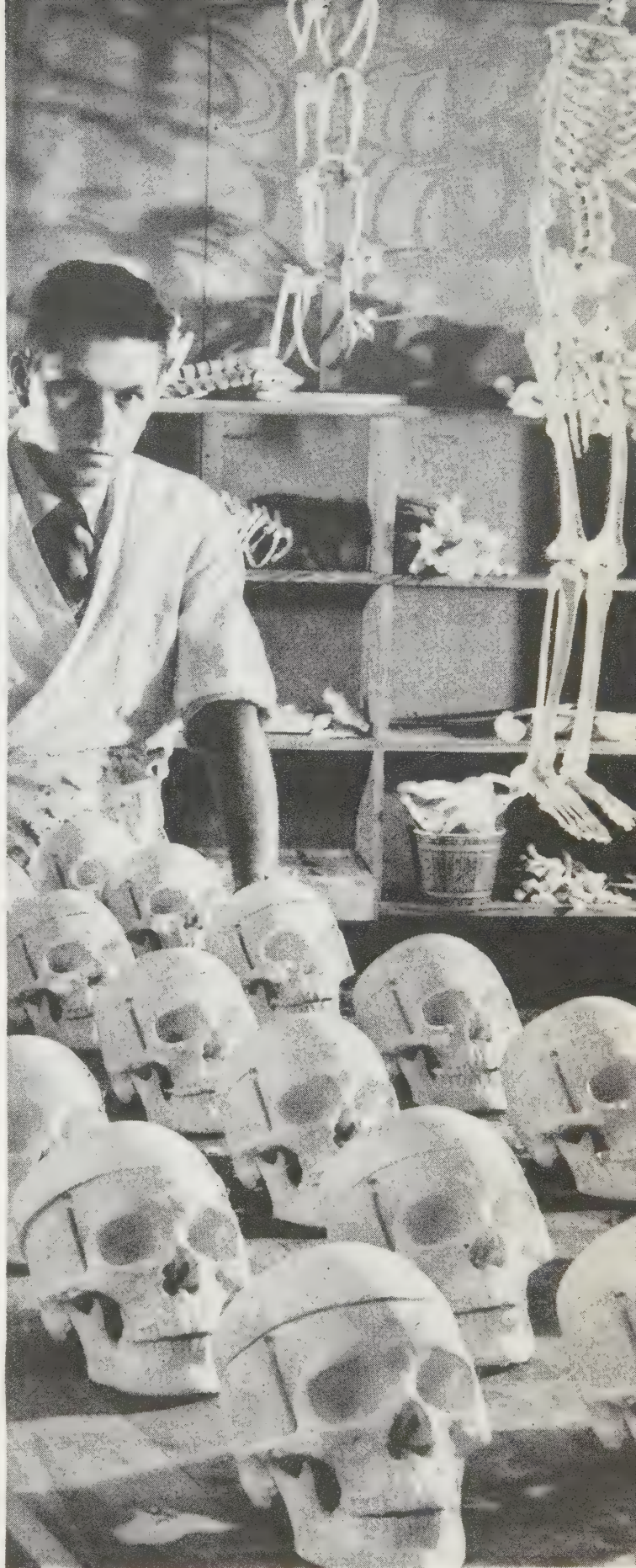
The pope laid down a moral code for doctors and medical researchers which, he said, would act as a brake to confine research so that it would not cause damage more serious than the ills it hopes to cure. Three factors, the pontiff declared, must be taken into account "to morally justify new proceedings, new attempts and new methods of medical research and treatment." These are, he said, the interest of medical science; the individual interest of the patient to be treated; and the interest of the community.

In a letter to Charles Flory, president of the Semaine Sociale, a French Catholic organization, Pope Pius said the distribution of the fruits of labour is too weighty a matter to be left to the free play of blind economic forces and required the intervention by the state as a co-ordinator. The system he favoured would be equidistant from the errors of liberalism and statism and would leave all legitimate freedom to private enterprise without replacing it with the oppressive omnipotence of the public authorities. (See also ROMAN CATHOLIC CHURCH; VATICAN CITY STATE.) (J. LAF.)

Planned Parenthood: see BIRTH CONTROL.

Plant Industry, Soils and Agricultural Engineering, Bureau of: see AGRICULTURAL RESEARCH ADMINISTRATION.

Plastics Industry. Final figures for the 1951 production of plastics and synthetic resins in the U.S., compared with 1950, are given in the table on page 566.



PLASTIC SKELETONS cast from originals and being mass-produced by a firm in Texas in 1952 to relieve the scarcity of real skeletons needed by U.S. medical schools and in private research. All the separate bones making up the plastic skeletons were interchangeable so that parts that became chipped or broken could be replaced after breakage

Production of Plastics and Synthetic Resins in the U.S.*

(In pounds)	1951	1950
Cellulose plastics (all)†||	121,817,300	127,500,000
Phenolic and other tar acid resins‡||	481,603,000	372,200,000
Urea and melamine§||	229,102,000	185,100,000
Styrene and styrene-derivative polymer and copolymer resins||	375,040,000	332,000,000
Vinyl resins||	464,512,000	402,000,000
Miscellaneous¶	362,312,000	263,000,000
Total	2,034,386,300	1,681,800,000

*Source: U.S. Tariff Commission.

†Includes fillers, plasticizers and extenders.

‡Includes sheets, rods, tubes, moulding and extrusion materials, primarily ethyl cellulose and Valite.

§All dry resin except moulding material which includes filler.

||Excludes data on protective coatings.

¶Tariff Commission figures included filler for film and sheet every year except 1951. For comparative purposes in this table an estimated figure for filler was added to the 1951 figure for film and sheet in order to show trends.

¶Includes acrylic, polyethylene, nylon and other resinous moulding materials; petroleum resins and coumarone indene.

While government allocations and materials scarcities plagued the industry in the beginning of 1952, especially in polyethylene, styrene and resorcinol, that situation was greatly relieved by the middle of the year. Scarcities vanished, allocations were removed and business started back to more normal operation. Production facilities in practically all branches of the industry were being enlarged and approximately 15% of all production was going to defense purposes.

Civilian production of established plastics products such as housewares, wall tile, flooring, work-surface covering, rain-wear, upholstery, luggage, etc., continued during 1952 at a rate in keeping with the expanding manufacture of raw materials. Heavy industry use of plastics—electrical, automotive, building, etc.—showed normal expansion. Increased interest was manifest in those materials which offer special properties—fluorocarbons, silicones, styrene copolymers, epoxies, and blends of rubber with styrene and phenolics. In addition there was a big upsurge of applications for plastics sheet formed into end products by the use of heat and pressure and a continuing growth of reinforced plastics—combinations of fibrous glass and plastic resins.

Fluorocarbons.—The fluorocarbons—polytetrafluoroethylene and polychlorotrifluoroethylene—have excellent resistance to moisture, good electrical characteristics, chemical inertness and high heat resistance. They had come into wide use where their properties outweighed their cost: in chemical handling equipment, refrigeration systems, valve seats, specialized electrical applications, and in thin films where zero water vapour transmission and zero moisture absorption were desired.

Silicones.—Chemically related to such inorganic materials as quartz, silicones were produced in 1951 in the amount of an estimated 10,000,000 lb. This quantity was used in such varied forms as laminating and moulding resins, coatings and varnishes, fluids and elastomers or silicone rubbers.

Like the fluorocarbons, the silicones have outstanding electrical, thermal and chemical properties. During 1952 the applications which received the most attention included such diversified uses as the coating of bakery pans, improved insulation for electrical transformers, wire coating, gaskets, laminates for aircraft parts, moulded electrical equipment, waterproofing of concrete, interior coating of bottles for antibiotics, waterproofing of glass cloth, and torsional vibration dampers for automobile engines.

Resistance to both heat and cold is an outstanding property of silicones, and one that was being constantly improved. For example, in 1950 the lowest temperature at which silicone rubber would remain flexible was -70°F. ; by 1952 that working temperature had been reduced to -110°F.

It was estimated that between 60% and 80% of all silicone production in 1952 went directly or indirectly to military

items. One major producer of these materials announced early in 1952 that \$13,000,000 would be invested in plant expansion for the manufacture of silicones.

Styrene Copolymers.—Styrene copolymer sheet stock came in for wide attention during 1952 because of the announcement of new materials and the development of improved forming techniques. Advantages of these plastics sheets include high strength, ease of formability, high abrasion resistance, chemical inertness and low water absorption. The sheets can be formed by heat and pressure; they can be machined by standard shearing, sawing, punching and drilling procedures; they can be cemented; and they can be printed or hot stamped.

Because the styrene copolymer sheets are tough and have high tensile strength, they can be drawn to extreme depths, if care is exercised in applying the heat needed to soften the material before forming. Thus, a pattern-heating method announced during 1952, coupled with improved mould design, made possible the production of formed parts with thick wall sections at corners and edges where the thinnest sections would otherwise be expected.

Many of the applications of styrene copolymer sheets during 1952 were for military use; others included boat decks, automobile dash panels, refrigerator door liners, radio cabinets, traffic markers, industrial tote boxes, wash basins for aeroplanes and trailers where light weight is a requirement, television tube masks and business machine housings.

Copolymer sheets offered during 1952 had a wide range of colours, surface finishes ranging from mirror smooth through matte to leather patterned, and thicknesses from 0.015 in. to 0.5 in.

Epoxies.—Interest in epoxy resins during 1952 centred on their uses in adhesives, potting compounds, surface coatings, and as vinyl stabilizers. Epoxies, based on ethylene oxide or its homologs or derivatives, show very little shrinkage during cure; have excellent adhesion to metals, glass and ceramics; and, when cured, exhibit chemical resistance and good mechanical and electrical properties. As vinyl resin stabilizers, epoxies are nontoxic.

Because of their unusual adhesive qualities, epoxies were widely studied as cements for metals. They can be cured at room temperature and without the use of pressure. Hence they were used in fabricating metal structures which formerly required the use of heat in soldering, welding or brazing operations. Because the epoxies do not require high heat to develop their maximum strength (a practical cure temperature for fast setting is less than 200°F.), they can be used under conditions where the heat of brazing or welding would tend to warp the metal structure. Heat exchangers, for example, where thin metal fins must be fastened permanently to tubes, were satisfactorily fabricated with epoxy adhesives as the sole bonding agent. Not only does the low cure temperature of the epoxies avoid metal distortion, but it also prevents degradation of the metal which often accompanies the use of the welding torch or arc.

Plastics Plus Rubber.—Three new formulations of styrene modified with rubber were announced during 1952. They can be injection moulded to produce parts with thin but strong cross-sections and can also be extruded in the form of thin, tough sheets. All three grades have high impact resistance, ease of mouldability and extrusion, machinability, and combine excellent electrical properties with the chemical resistance of styrene. Sheets extruded of these new materials are easy to post-form, swedge or blow to large shapes such as refrigerator trays. They can be produced in a variety of colours, can have finishes ranging from matte to a high polish, and can be printed readily.

These materials were used to produce refrigerator door liners and frames, battery cases, pipes, chair seats of extruded strips, and a variety of injection-moulded toys.

Rubber was also being blended with phenolic resin to produce materials with the strength, hardness and fast cure of the resin plus the toughness inherent in an elastomeric polymer. By 1952 these blends had advanced to a point where they were being used in moulding such diversified parts as dishwasher impellers, industrial gears, components for air circulators, bobbins for textile machinery, tool racks and parts for shoe-making equipment. The anticipated use of rubber-phenolics production for 1952 was as follows: 65% for industrial purposes, 25% for military purposes and 10% for consumer applications.

Reinforced Plastics.—Consisting essentially of fibrous glass and plastics resins (usually polyester), reinforced plastics in 1952 continued their growth. One of the outstanding applications announced during the year was in the walls of an alert shelter for jet planes, designed for military use. This shelter, 72 ft. wide, 64 ft. long and 24 ft. high, could be erected in two days by a four-man crew. The framework was a set of magnesium arches; the panels which formed the skin of the shelter were of fibrous glass-polyester plastic, 4 x 8 ft., strengthened with moulded-in ribs. Added insulation was provided by fibrous glass wool in bat form, held in place in each panel by a sheet of vinyl-coated fabric.

Boats of reinforced plastics had become standard for many military and civilian uses. By 1952 it was announced that the U.S. department of defense had acquired a number of reinforced plastic boats made by different methods. These boats included small and large landing craft, 28-ft. cruisers, 12-ft. wherries and 26-ft. whale boats.

Production Methods.—Two new methods of casting vinyl plastisols were announced. One was developed to ensure uniform wall thicknesses, the other to obtain controlled variable wall thicknesses. In the first method closed moulds are used. After charging with a measured amount of material, the moulds, locked in closed position, are automatically rotated in several planes so that the plastisol is uniformly distributed over the interiors. The rotation is continued during the cycle of curing and cooling.

In the second method open moulds are used. These are charged by the conventional method of filling and dumping, which leaves a layer of the liquid plastic adhering to the mould surface. As the moulds proceed through the fusing oven they are tilted through predetermined angles to cause flow of the liquid to points where thicker sections are wanted.

A machine for the production of 14-gal. polyethylene carboys was announced during 1952. In this unit (a combination of an extruder, an injection machine and a blow moulding setup) the extruder plasticizes the plastic and feeds it to an injection cylinder. From there, the softened material is forced in the form of a tube into a blow-moulding chamber where compressed air expands the tube to conform with the shape of the mould.

A continuous process for the production of reinforced plastic pipe was put into operation during 1952. The pipe, in 20-ft. lengths, is formed around a vertical mandrel which travels upward through the centres of several work tables. At each table, layers of glass tape or rovings and polyester resin are applied. After an oven cure the mandrel is withdrawn and returned to the production line.

The trend toward preplasticizers for injection machines continued. Thus, a machine with four preplasticizers was announced in 1952. With all four units in use the machine had a capacity of 375 oz. of styrene; with two units the capacity was 165 oz. The hopper would hold 850 lb. of material. (See also MUNI-

TIONS OF WAR; RAYON AND OTHER SYNTHETIC FIBRES.)

(C. A. BN.)

Platinum: see MINERAL AND METAL PRODUCTION AND PRICES.

Plums: see FRUIT.

Plutonium: see ATOMIC ENERGY.

Pneumonia: see RESPIRATORY DISEASES.

Poetry: see AMERICAN LITERATURE; CANADIAN LITERATURE; ENGLISH LITERATURE; FRENCH LITERATURE; LATIN-AMERICAN LITERATURE; LITERARY PRIZES; RUSSIAN LITERATURE; SPANISH LITERATURE.

Poland. A people's republic of eastern Europe, Poland is bounded east by the U.S.S.R., south by Czechoslovakia, west by Germany and north by the Baltic sea. Area: 120,359 sq.mi. Pop.: (1950 census) 24,976,926; (1952 est.) 25,500,000. Language: Polish. Religion: Roman Catholic. Chief towns (pop., 1950 census): Warsaw (cap., 650,064); Lodz (619,914); Cracow (330,046); Poznan (320,294); Wroclaw (289,734); Gdansk (193,530); Szczecin (178,210); Katowice (141,277). President of the republic, Boleslaw Bierut; chairman of the council of ministers, Jozef Cyrankiewicz. From Nov. 20, 1952: chairman of the council of state, Aleksander Zawadzki; chairman of the council of ministers, Boleslaw Bierut.

History.—Promulgation of a new constitution and new elections were the main events of 1952. The new constitution was passed unanimously by the *sejm* on July 22, the national day of the Polish people's republic, anniversary of the so-called Lublin manifesto and of the emergence into the open of the Moscow-sponsored Polish Committee of National Liberation. The main features of the constitution were familiar, since as Stefan Jedrychowski, a deputy premier, claimed in the debate, it was "modelled on and inspired by the great Stalin constitution of 1936."

The supreme organ of state authority was the council of state (in the U.S.S.R. the presidium of the supreme soviet), composed of a chairman, four deputy chairmen, a secretary and nine members. The supreme organ of state administration was the council of ministers appointed by and responsible to the *sejm*, or to the council of state if the *sejm* was not in session. One original departure in the Polish version of the constitution was that it recognized and protected, "on the basis of existing legislation, individual property and the right to inherit land, buildings and other means of production belonging to peasants, craftsmen and persons engaged in domestic handicrafts" (article 12).

Under article 70 the Polish people were also guaranteed freedom of conscience and religion.

The Church and other confessional communities [stipulated article 70] can freely fulfil their religious functions. It is not permitted that the citizens should be prevented from participating in religious activities or ceremonies. It is also not permitted that anyone should be compelled to participate in religious activities and ceremonies. The Church is separated from the state. The basis of the relations between the Church and state, as well as the legal position of the confessional communities, and their property, will be defined by law. Misuse of the freedom of conscience and confession for purposes contrary to the interests of the Polish republic will be punished.

It is not difficult to see how these principles might lend themselves to elastic interpretations. As in the U.S.S.R., parents and priests could be punished if they "compelled" children to learn their religion or to go to church. The laws concerning the church could be amended by the Communist *sejm* and the Holy See could be ignored. The property of the church, already partly confiscated, could be nationalized or heavily taxed; there would be small possibility of maintaining Roman Catholic schools or Catholic charitable institutions, for there was no specific guarantee for such rights.

The electoral law adopted by the *sejm* on Aug. 1 accorded

the franchise to all citizens of 18 years, including members of the armed forces; citizens of 21 years were eligible for election. There was one deputy for every 60,000 inhabitants; in every constituency there could be only one list of candidates equal in number to the deputies fixed for the constituency. As there was no choice, the electors, theoretically, might manifest their displeasure by mass abstentions or by striking out the names of all candidates on the list so that none would obtain the required absolute majority of valid votes. In both eventualities the electoral law provided for a re-election. Possibly because the disclosure of any such boycott of the elections or of a mass rejection of the candidates would be embarrassing, the electoral law laid down that the election results were to be published for the whole country by the National Election commission.

On Aug. 25 the council of state promulgated a decree dividing the country into 67 constituencies, the largest being that of Warsaw (15 deputies) and the smallest those of Szczecinek, Stargard Szczeciński and Gorzów (4 deputies each). The list for Warsaw was headed by Bierut, Marshal Konstanty Rokossowski, commander in chief of the Polish armed forces, and Jakob Berman, undersecretary of state at the presidium of the council of ministers. Cyrankiewicz was head of the list in Cracow and Hilary Minc, deputy premier and chairman of the State Planning commission, of whom little had been heard during the year, was at the top of the list in Katowice.

The candidates were formally nominated by the three existing political parties, the Polish United Workers' (Communist) party, the United Peasant party and the Democratic party, and also by the trade unions, the Union of Polish Youth and other "mass social organizations of the working people"; i.e., Communist party under other names. Out of 425 candidates there were only 60 Peasants, 20 Democrats and a few independent "Catholic leaders"; the remainder were Communists, including 19 former Socialists. The elections were held on Oct. 26.

During 1952 there were four age groups in the armed forces giving a total of more than 650,000 effectives. Four new divisions were in formation in addition to the existing 20 which included 3 mechanized and 3 armoured. The officially admitted military expenditure rose between 1949 and 1952 from 1,800,000,000 zlotys to 6,600,000,000 zlotys. Defense expenditure took officially 6.8% of the budget in 1950 and 10.5% in 1952. In fact it was much more, for a great amount of military expenditure was concealed under different headings. It was estimated that real defense expenditure amounted to 10% of the total national income.

Speaking in the *sejm* on July 18, Bierut said that while there were only 2,730,000 wage earners outside agriculture in 1938, in 1947 this number had increased to 3,180,000 and by mid-1952 amounted to 5,340,000. Between 1938 and 1952 the proportion of wage earners outside agriculture rose from 8% to 21% of the total population. The economic plan for 1952 laid down that the production of coal should increase to 86,000,000 metric tons, of crude steel to 3,300,000 tons, of electricity to 12,675,000,000 kw.hr. The greatest expansion was planned in the engineering industry, which was to show a 50% increase, with emphasis on mining machinery, shipbuilding, motor vehicles, rolling stock, heavy machine tools and agricultural machinery. Of next importance was the chemical industry: a considerable effort was to be made to remedy the shortage of sulphuric acid and to expand the production of artificial fertilizers and artificial fibres. By the end of 1952 the share of industry in the national income was to be 53%. Expenditure on investments was to reach 28,000,000,000 zlotys, i.e., about 25% of the estimated national income.

Although the national income was rising steeply, no improve-

ment was noticeable in the standard of living. A letter from Lodz textile workers, smuggled abroad and published by the French Socialist daily *Le Populaire* (Aug. 6), provided a direct confirmation of this.

We have come to a point [said the letter] when we have to pay our day's earnings for 1 kg. of sugar and at least a month's wages for a pair of shoes. A new suit of cloth has become a dream, because to buy this, we must work 4 to 6 months. We live like miserable wretches, driven by the Communist party to produce ever greater norms for ever lower pay and worse treatment. . . . Our trade unions do not protect us, they are against us, the workers. . . . Strikes are forbidden and are considered sabotage. People advocating strikes are subject to penalties reserved for criminals. . . . We are surrounded by spies who lie in wait for any rash word uttered in a fit of bitterness or misery. For one such word you go to the forced labour camps.

By mid-1952 the compulsory registration begun in Dec. 1951 of every inhabitant over the age of 18 was completed.

Education.—Schools (1951-52): kindergarten 7,700, pupils 350,000; elementary 22,980, pupils 3,300,000, teachers 77,000; lower-grade secondary 335, pupils 185,000; higher-grade secondary 486, pupils 140,000; technical 3,000; teachers' training colleges 149, students 33,000. Institutions of higher education 83 (including 8 universities), students 142,000.

Finance.—Budget: (1951 est.) revenue 55,972,000,000 zlotys, expenditure 51,891,000,000 zlotys; (1952 est.) revenue 63,787,000,000 zlotys, expenditure 62,876,000,000 zlotys. Monetary unit: zloty with official exchange rates of 1 zloty to the rouble, 11.20 zlotys to the pound sterling and 4 zlotys to the U.S. dollar.

Foreign Trade.—(1950) Imports U.S. \$844,000,000; exports U.S. \$631,000,000. Main sources of imports (1950): U.S.S.R. 40.1%; Czechoslovakia, Hungary, Rumania and Bulgaria 18.3%; Sweden 3.8%; U.K. 2%. Main destinations of exports: the four eastern European countries 24.6%; U.S.S.R. 23.2%; U.K. 7.8%; Sweden 5.7%.

Transport and Communications.—Railways (Jan. 1949): 21,415 km.; passenger traffic (1950) 26,352,000,000 passenger kilometres; freight traffic (1950) 34,944,000,000 ton-kilometres; goods carried (1950) 148,128,000 tons. Roads (1947): 96,605 km. Licensed motor vehicles (1948): cars 24,240; commercial vehicles 28,957. Shipping (1949): merchant vessels 46, total tonnage 164,989 gross registered tons. Freight traffic in Polish ports (external trade, 1950): loaded, 12,456,000 metric tons, unloaded 3,216,000 metric tons. Ships entered (1950): 7,248,000 net registered tons. Air transport (1950): 30,468,000 passenger-kilometres flown; 619.2 ton-kilometres of cargo transported. Telephones (1950): 225,000. Radio receiving set licences (April 1952): 1,848,000 including 800,000 served by relay stations.

Agriculture.—Main crops (metric tons, 1950): wheat 1,854,000; barley 1,077,000; rye 6,503,000; oats 2,126,000; potatoes 36,835,000; sugar beets 6,377,000. Livestock (Dec. 1950): cattle 7,164,000; pigs, 9,408,000; sheep 2,194,000; horses 2,797,000. Meat production (1950): 1,252,800 tons, including 859,200 tons of pork.

Industry.—Fuel and power (metric tons, 1951): coal 81,700,000; lignite 5,000,000; crude oil 184,000; synthetic fuels 146,000; electricity 11,101,000,000 kw.hr. Raw materials (metric tons, 1951): steel ingots and castings 2,712,000; zinc 120,000; lead 18,500. Manufactured goods (metric tons, 1951, except as indicated): cotton yarn (1950) 92,200; cotton fabrics 73,800; wool yarn (1950) 41,900; rayon filament yarn 11,200; cement 2,683,600. Building bricks (1950) 1,464,000,000.

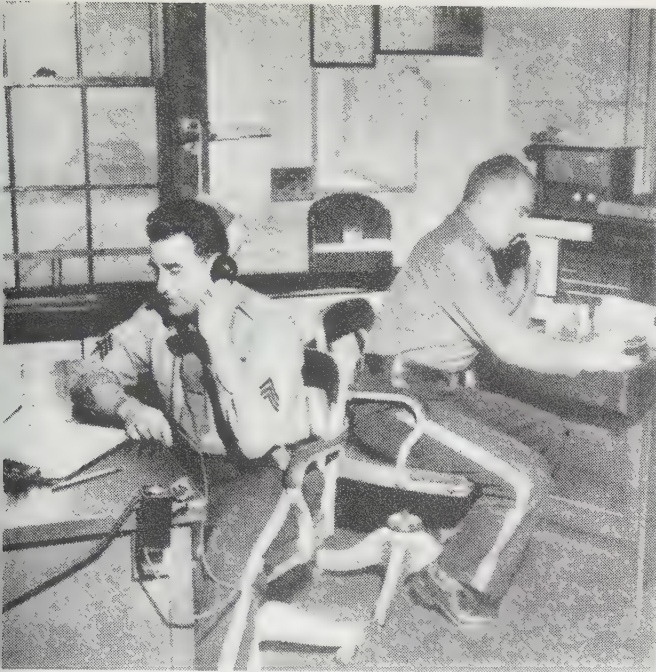
(K. SM.)

Pole Vaulting: see TRACK AND FIELD SPORTS.

Police. Law enforcement issues in Great Britain during 1952 chiefly centred around the continuing difficulties experienced in attracting suitable manpower to the police service. Some part of this problem was met by the new pay scales announced in 1951; but in London the commissioner of police of the metropolis moved also to employ police cadets on clerical, mechanical and other tasks not requiring enforcement powers. One month's training was provided for them and it was hoped that they would eventually constitute a new and increasingly valued source for police recruitment.

While these interesting events were transpiring in London, the first large-scale survey of New York's police defense was reaching similar conclusions in July 1951 concerning the advisability of securing some part of police recruits from ages well below full and legal majority. Hence it appeared that the world's two largest cities might soon be independently engaged in drawing some part of their police manpower from young men who planned to spend their entire productive years in the police service.

The New York police survey pointed to scores of defects in the city's police defenses, and stated that some of them had already been corrected while correction of others had been approved by the police commissioner. About one-sixth of the police



STATE POLICEMAN broadcasting a call (left) over a three-way radio system used for speed control in Connecticut in 1952, enabling police cars equipped with radar to record the speed of approaching cars and radio their findings to troopers farther along the road

manpower was declared to be assigned to tasks that should not be performed at all, or to be discharging duties for which non-police employees and youthful cadets would prove better fitted.

Despite the difficulties encountered in New York in securing witnesses against police charged with complicity in gambling, the administrative trials continued on a large scale and with few exceptions they resulted in dismissals. Frequent judicial appeals from rulings by the police trial commissioner were decided against the defendant police. Harry Gross, so-called book-making czar of Brooklyn, appeared repeatedly against police who were charged by him with receiving his protection payments. In most instances other witnesses helped to substantiate these charges, and the police on trial were thereupon dismissed from the service. Identified by Gross as recipients of his graft, but not brought to administrative trial because no longer members of the force, were a former police commissioner, a former chief inspector and scores of other police ranging from inspector to patrolman. Most of these had taken their retirements to avoid trial, which had produced insistent popular demand that such "midnight resignations" on pension should not be tolerated. The New York state legislature acted to deny pension rights in future cases, and this statute was upheld on appeal.

A similar inquiry by a congressional committee into the nationally controlled police department of Washington, D.C., produced evidence of conditions that differed only in scale from those shown to prevail in New York.

For the United States, at least, it was a difficult year not only for many unworthy policemen, but also for many more whose records were unblemished but whose professional pride and self-esteem suffered from the misdeeds of their faithless colleagues.

Re-emergence of Japan as an independent sovereign nation found it operating its police forces according to western patterns that were imposed by the postwar military occupation. Whether such foreign institutions could be successfully transplanted raised questions of interest to police administrators everywhere.

The 21st general assembly of the International Criminal Police commission was held in Stockholm, Swed., June 9-12, 1952.

Delegations representing 49 countries and 7 societies and associations were in attendance. International crime problems under consideration included the narcotic drug traffic, counterfeiting, identification of mailbags in international transit, repatriation of minors, air police and allocation of radio frequencies and criminal statistics.

The International Association of Chiefs of Police met in Los Angeles, Calif., in Sept. 1952 with 2,000 delegates and invited guests in attendance. The sessions were enlivened particularly by the vigorous objections taken by local police chiefs of the United States to the conclusions formed by a law enforcement committee of the American Bar association. These were to the effect that local police agencies in each of the 48 states should be subjected to standards, controls and inspections imposed by the various state governments. Even the prospect of state subventions as a reward for those who conformed did not influence the unfavourable attitudes of the city, town and county police representatives.

Also attracting much attention were the discussions of police unions and their possible influence on the future of police discipline and law enforcement. (See also CRIME; FEDERAL BUREAU OF INVESTIGATION; SECRET SERVICE, U.S.)

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Poliomyelitis: see INFANTILE PARALYSIS.

Political Parties, British. The Conservative party started the year 1952 with a majority of 26 over its Labour opponents in the house of commons and of 17 over all other parties. The main outlines of its propaganda, if not of its policy, had already been clearly defined. It was to be the government which put "first things first," sweeping away cobwebs from the vast administrative machine which it inherited and cutting through red tape to the essentials of economic recovery. The government, it was claimed, had succeeded to an economic crisis far graver than could have been inferred from the relatively optimistic pronouncements of its predecessors. It could make no promises save of greater austerity, and it would bring to its task a national view of the nation's needs and a wholesome contempt for purely party government.

It was obviously only a matter of time before the political struggle resumed its pre-election violence, and by the spring even the pretense of an informal truce had been abandoned. "Gradualism," however, was the keynote of the government's economic policy. By still further reducing imports and imposing small additional charges for the health service, it took action for which the policy of its predecessors provided excellent precedence, although the latter measure was vigorously opposed by them. By raising the bank rate twice it seriously limited private borrowing and created a considerable slump in government securities. Thus the stage was set for R. A. Butler's first budget, which provided a judicious instalment of what had come to be known as "disinflation." For the first time in many years the emphasis of the chancellor's speech was on the positive need for more production rather than on the negative need for more self-restraint.

The spirit at the Conservative party conference at Scarborough in October was one of strictly qualified complacency. On the one hand, R. A. Butler was congratulated for having temporarily restored Great Britain's balance of overseas payments, mainly by stringent, official restrictions on imports. It was

realized, however, that the prospect of maintaining this balance in the face of ever-increasing competition from abroad depended on administering a decisive check to inflation at home, and this had not been done. Wages had continued to rise, and the dilemma of how to maintain the social services at their existing level without either stimulating inflation or reducing rearmament had to a large extent been sidetracked. The feeling was widespread that in its first year of office the government had pointed the way but had not followed with sufficient vigour.

There was an acute consciousness among Socialists that the Labour party had reached a turning point in the development of its doctrine and policy. Two general elections had demonstrated to the satisfaction of its parliamentary leaders that nationalization could no longer be the main plank of its platform. It had gone to the country as the defender of the social services but this role imposed on it the duty of suggesting some means of paying for them out of the national income. The choice was clearly formulated in the last year of Clement Attlee's administration when Aneurin Bevan and Harold Wilson had resigned on the grounds that the country could not afford the vast rearmament program on which the government had embarked without making deep inroads into the welfare state. The party leadership insisted on putting defense first, and it became increasingly hard for them to resist the logic of the rebels who contended that this could be done only at the cost of such sacrosanct institutions as the health service. Over and above this critical question and intimately connected with it was the problem of what Labour, the party of social progress, could now offer in the way of new legislation.

The Bevanites favoured economy on rearmament; maintenance and, at points, extension of the social services; more independence of the U.S. in foreign policy; and, in the opinion of Bevan himself, more nationalization.

Matters came to a head at the Trades Union congress which was held at Margate in early September and at the party conference at Morecambe in early October. At Margate an eloquent resolution comprehensively condemned the government's economic policy, but on the issues which mattered—rearmament, foreign policy and wage restraint—caution prevailed. While calling for further increases in the wages of the lowest paid groups, the conference tacitly accepted the general policy of restraint.

The party conference at Morecambe met in a white heat of passion and started with a resounding victory for the Bevanites, all six of their candidates being elected to the executive as constituency representatives and Herbert Morrison and Hugh Dalton being eliminated in the process. Thus encouraged, the Bevanites pressed their views on rearmament, foreign policy and nationalization in a series of resolutions and amendments. These were duly defeated but only by the use of the card vote which enabled the delegates of the unions to vote with the full strength of their membership for whatever course had been agreed on beforehand. By this method the unions inflicted a crushing defeat on the constituencies, but the strength of Bevanism among the constituencies had already been conclusively demonstrated.

Since the Liberal party conference at Hastings in May was concerned mainly with the reiteration of familiar themes and with the discussion of internal party arrangements to meet the financial consequences of the last two general elections, and since the Communists, as an overt political force, remained negligible in Britain, all attention was fixed by the end of the year on the dilemmas of the two great parties. The Tories had embarked on a policy which, taken even one step further, must lead to some more or less serious diminution in the various forms of official bounty by which parties earn popularity. The

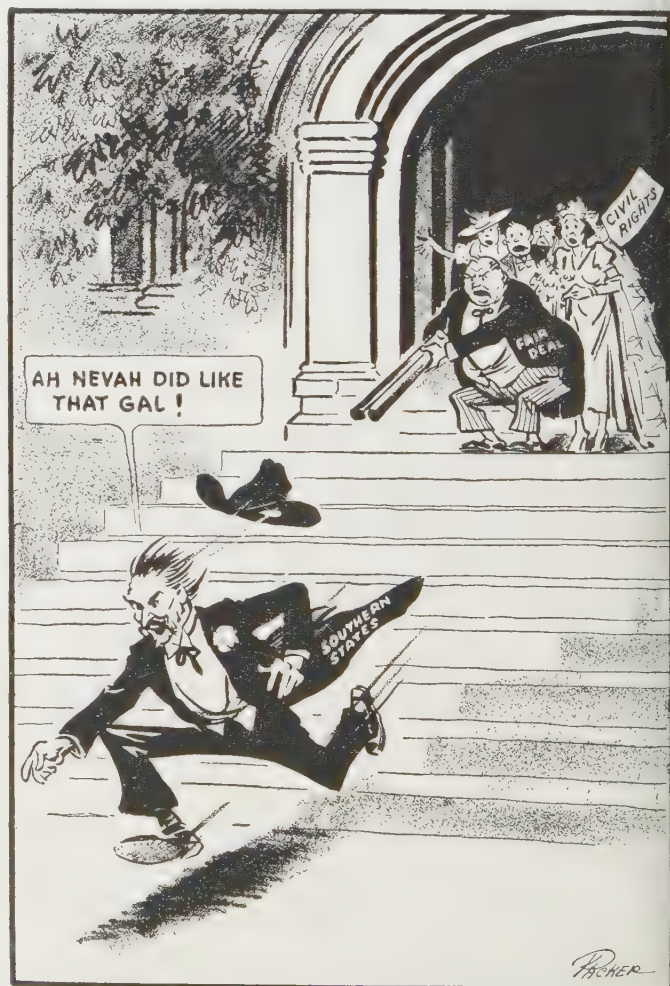
Socialists, while they might rely on some support in the country as government economies became more stringent, were bitterly and publicly divided among themselves. The party leadership resolutely declined either to retreat toward public economy or to advance toward a radical policy of intensified control, while the Bevanites stridently demanded a new Socialism and a complete reorientation of national foreign policy. (T. E. U.)

Political Parties, U.S. Distribution of Party Strength.

—At the opening of 1952, the governments of 18 of the 48 states were under the control of representatives of the Republican party. In an equal number of states, representatives of the Democratic party were in control of the government. In a dozen states there was a divided control. These states included Colorado, Connecticut, Delaware, Maryland, Massachusetts, Minnesota, Montana, New York, Nevada, Utah, Washington and Wyoming. In the congress of the United States, Democratic majorities prevailed in both house and senate, and the president, with a great body of political appointees, was the leading representative of the Democratic party, as had been the situation since March 1933.

Active candidates for the Republican presidential nomination were already in the field in January, including Sen. Robert A. Taft of Ohio, Gov. Earl Warren of California and Harold E. Stassen, formerly governor of Minnesota. A group of well-known Republican leaders, most of them in eastern states, had also organized to further the possible candidacy of Gen. Dwight D. Eisenhower.

There was a general feeling that the Republicans would have



"THE ELUSIVE GROOM!" a cartoon by Packer published in the *New York Daily Mirror* in 1952

their best chance since the election of 1928. One of the reasons was definite uncertainty as to the choice of the Democratic leader; another was the vulnerability of the Democratic record on communism, on corruption and on the indecisive war in Korea. There was a widespread opinion that the contest would eventually be one between Taft and Chief Justice Frederick M. Vinson, known to be a great favourite of Pres. Harry S. Truman. The widespread but nonpartisan popularity of General Eisenhower led to a view that he might find it easier to win an election than to win the Republican nomination.

A growing appreciation of this view led to renewed discussion of the way presidents were chosen. It was pointed out by political commentators that in 32 states the choice of delegates to national conventions was in the hands of professional politicians from the time of the local precinct meetings to the date of the choice of delegates by the state party conventions. In only 16 of the states were there primaries to elect delegates to state conventions, and in 3 the primary was optional. In the two national conventions, although ample opportunity was always given for presentation of candidates and resolutions, direction was in the hands of approximately 1,500 professional politicians engaged in operating the national political machine. Two professional groups were to choose two candidates, one of whom the voter in November was expected to support at the polls. Of course, minor parties were free, in the United States, to function outside this pattern of practice, and had done so for more than 100 years. They did so in 1952, and eventually 12 party nominations were made.

Despite the fact that many experienced politicians, including the president, placed little value on state primaries except as "popularity contests," the primaries held in 16 states between March 11 and June 3 were looked upon by the public at large as important tests of the political strength of the various candidates in the following conventions. In the first trial of strength in New Hampshire, General Eisenhower won a substantial victory in the Republican primary, and Sen. Estes Kefauver of Tennessee was preferred to President Truman in the Democratic primary. In the Minnesota preferential primary on March 18, won for Republicans by former Governor Stassen, Eisenhower was given a phenomenal "write-in" vote.

Early in the year there was renewed discussion of a salient fact in U.S. politics; namely, the large percentage of eligible voters that customarily stayed away from the polls. It was pointed out that approximately 50% abstained from voting in the presidential election of 1948. The bureau of the census reported 98,000,000 eligible voters and 75,000,000 registered voters. There were nearly 2,000,000 more women than men on the eligible lists.

Contests for 35 senate seats were second in importance only to the contest for the presidency. To be elected were 435 representatives to the house, as well as governors in 31 of the states. It appeared at the outset that the Democrats had the advantage in the races for the house because of local conditions. Between Feb. 19 and Sept. 24 there were 57 nominating primaries to choose senators, representatives and governors. Nine of these were "runoff" primaries; that is, in reality final elections. Moreover, it came to be realized that a Republican presidential victory was no sure guarantee of a Republican majority in the senate. It was well known that at the close of 20 years of national dominance, Democrats had come to occupy the majority of judicial posts. Eight of nine justices of the supreme court were Democrats. In the United States courts of appeals, 53 of 65 judges were Democrats; in the district courts, 168 of 211 were Democrats.

Early Divisions in the Major Parties.—During the first three months of the year, the activities of political party organiza-

tions increased steadily, particularly at the local level. In this period the candidacy of Senator Kefauver made a deep impression, particularly after he won the New Hampshire primary. Early talk of the possible candidacy of Adlai E. Stevenson, governor of Illinois, subsided because of his declaration that he would not seek the Democratic nomination. Sen. Richard B. Russell of Georgia came forward as the probable choice of the southern Democrats. The publication in March of the book *Mr. President*, edited by William Hillman and based upon diaries and letters of President Truman, increased the discussion of the latter's possible renomination. But this matter was resolved by President Truman's declaration at the Jefferson-Jackson dinner on March 29 that he would not run.

From early April, when Taft began in Wisconsin his impressive march in primary victories, until the eve of the Republican convention, the attention of the nation was centred upon the contest between Taft and Eisenhower for delegates to the convention, rather than upon the increasing acrimonious contest within the Democratic party. Kefauver gained steadily in primary support. By mid-May, many felt certain that he would win the Democratic nomination; he claimed support of more than 3,000,000 in the primaries. But in the final arrangements for the forthcoming Democratic convention, it was noted that the party managers had chosen Gov. Paul A. Dever of Massachusetts and Speaker of the House Sam Rayburn of Texas as presiding officers, and this seemed to thoughtful commentators to forecast the choice of Governor Stevenson. By the end of the month Washington correspondents felt that the ticket would be Stevenson and Russell.

The Republican contest narrowed to a struggle between Taft and Eisenhower. In late May, Taft managers claimed 450 delegates to the convention and 107 as a probable addition. It seemed likely that the two candidates would enter the convention with somewhat more than 500 delegates to the credit of each (604 Republican and 616 Democratic required for nomination). The favourite sons, in particular Governor Warren of California and former Governor Stassen of Minnesota, might hold the balance of power. But the leading question was the determination of delegations from contests submitted in Texas, Louisiana and Georgia. It appeared that the outcome of this issue might determine the choice of the nominee. Consequently, when, in the preliminary organization of the convention, the Republican national committee gave every advantage to Taft in choice of presiding officers and invited speakers, there was increasing discussion of the possibility of so serious a split in the party as to suggest a repetition of the split of 1912 and, as well, the loss of the ensuing election.

The National Party Conventions.—An analysis of the proceedings of the Republican convention, which opened on July 7, showed that the final outcome was determined by three factors of outstanding significance. In the first place, the presentation of the regular party program by Gen. Douglas MacArthur, by former Pres. Herbert Hoover and by others gave assurance that the party would oppose the New Deal, the Fair Deal and "Trumanism" on both domestic and foreign policies. In the second place, the reports from regularly organized committees (constituted by the Republican national convention of 1948) were scrutinized by the convention membership, which thereupon insisted on a delegate list from the contested states of Texas, Louisiana and Georgia that gave greater support to Eisenhower than to Taft. This decision of the convention was aided by two factors: the support of the machine and personnel of the titular head of the party, Gov. Thomas E. Dewey of New York; and the call of the Republican governors of 25 states for fair and honest dealing with the evidence submitted by the Texas, Louisiana and Georgia rival delegations to the convention where

all could see and judge. In the third place, the insistent mood of the convention was distinctly hostile to the idea of a usual nomination, and in this mood the convention membership chose with determination the nomination not of Taft, not of a favourite son, but of Eisenhower, who, it was the general belief, could win the election.

The Republican platform was affirmative and aggressive, as well as evasive and vague. It was primarily a program of attack, as was natural in the case of a party that had been out of office for 20 years. The choice of Sen. Richard M. Nixon of California as vice-presidential candidate, appealing supposedly to younger voters, was an indication that no risk was to be taken in being "too conservative," and that there was intention to bear down hard on anticommunism as an issue in the ensuing campaign.

The conventions, both held in Chicago, the Republican from July 7 to 12 and the Democratic from July 21 to 26, brought to the one city all the principal contenders for nomination, which was unprecedented. As the sessions were televised for the first time, as well as presented to the world by radio, there were brought to the eyes and ears of millions of Americans and others the methods, manners and membership of both the party organizations. Never before had the "party" as a living force in American life been so completely revealed to the people.

In the Democratic convention there was a contest not of two candidates but of six: Averell Harriman (Mutual Security administrator), Senator Russell, Senator Kefauver, Vice-Pres. Alben W. Barkley, Sen. (former Gov.) Robert S. Kerr of Oklahoma and Governor Stevenson. Involved in these candidacies, but in the end not determining the nomination, were the highly controversial platform proposals on civil rights and labour relations. More important than either—and to some extent determining the final outcome—was the treatment accorded the States' Rights Democrats of 1948. As pleas of the southern moderates proved successful, it was clear that the party would appear to be united. The proposals of extremists were rejected. This in turn meant that the nominee could not be Russell or Kefauver or Harriman. As Barkley had withdrawn and Kerr was not a serious contender, the nominee would be (and was) Stevenson. The vice-presidential nominee was Sen. John Sparkman of Alabama.

The Campaign.—The briefest summary of the campaigns of the two parties from mid-August until election day on Nov. 4 would include, in order, the following salient developments. Eisenhower's earliest speeches stressed "honesty in government," the need of a lasting peace and the "appalling and disastrous mismanagement of our foreign affairs." Following his meeting with Taft on Sept. 12, there appeared greater intensity in Eisenhower's charges against the Truman administration, and it was apparent that he was working, in speeches and otherwise, upon pacification of the Republican conservatives. His supporters had taken control of the national committee. His support of Sen. William E. Jenner of Indiana and Sen. Joseph R. McCarthy of Wisconsin was given in his determined effort not to lose any possible Republican support, not only in winning the presidency but in assuring a Republican majority in the senate. However, Republican Sen. Wayne Morse of Oregon announced that he would not support Eisenhower. Later in the month Senator Taft gave the first of 16 speeches in support of the Republican ticket.

In this same period Stevenson had chosen a staff of workers that emphasized his freedom of the regular Democratic organization. Stevenson was invited to the White House and not only counselled with the president but on Aug. 12 was given a "briefing" by government and defense officials. This proved to be a major political blunder. Even though General Eisenhower was

subsequently, and apparently as an afterthought, invited for a similar briefing, the political harm was done. The declaration by Eisenhower that he had declined this invitation gave him a tactical advantage, and it really lost him nothing, for he had before him each week the confidential reports of the Central Intelligence agency.

As the campaign went into its second month, it was abundantly clear that an agreement had been reached between candidate Stevenson and President Truman, and that, although the Democratic candidate would go his own way, the president would in the last weeks of the campaign make it clear to all supporters of the Fair Deal that it was on trial. In the meantime, Stevenson increasingly attacked the methods of Eisenhower in solidifying his support by saying that a "great crusade" had become a "great surrender."

The last half of September was given over to the discussion of money in politics. It began on Sept. 18 with the revelation that vice-presidential candidate Nixon had accepted \$18,235 for political purposes from a group of supporters. Early reaction was very unfavourable. This was countered by the news that Stevenson had used money from his gubernatorial fund of 1948 to augment salaries of state officials. An attempt was made to draw a fine line of distinction between the two acts, but to the public as a whole it failed. Nixon submitted his case to the Republican national committee and defended himself as well on Sept. 23 in a radio broadcast that excited great interest. The popular response seemed to exonerate him. The Republican national committee reported the receipt of 75,000 messages, 200 to 1 in Nixon's favour. Eisenhower stated that Nixon had been completely vindicated. Even after interest subsided, however, there was a widespread feeling of unrest and uncertainty as to the extent of contribution of private funds for campaigning.

Anticommunism, which had been an ever-present subject of discussion, came definitely to the centre of the stage in Nixon's attacks upon Stevenson, because of his character witness deposition on behalf of Alger Hiss. The counterattack of Democrats pointed out that Eisenhower and his close adviser, John Foster Dulles, had been members of the board of the Carnegie Endowment for International Peace that had chosen Hiss as its president. But not until Monday of the final week did Senator McCarthy, speaking not for the Republican national committee but as guest of a group of Chicago friends, present once more before a national audience his conception of the danger to the nation in the presence in the government of Communists and near-Communists. In this he attempted to link Stevenson with "fellow travellers" and organizations on the list of the senate un-American activities committee. The Democratic national committee published a point-by-point refutation. But the impression remained among all those accustomed to the charges of the past two years. It gave occasion also to the issuance of reports that accepted precedents would be broken; Florida and Virginia and possibly Texas would vote for Eisenhower.

In the final week of the campaign, although communism as a menace at home and abroad certainly was much in the minds and emotions of the voter, the issues upon which all major addresses concentrated were charges of inexcusable corruption in Washington, the economic record of the administration and, finally, the part of the United States in the war in Korea. Eisenhower's attack, leading to his repeated declaration of intent to go to Korea, brought derision and then violent denunciation, not only from Stevenson and Truman but from other Democratic speakers. But there was no effective answer even in the Democratic candidate's statement that the solution lay not in Korea but in Moscow. That broadened the argument, but left the administration even less defensible. The issue continued at the forefront to the eve of the election, President Truman re-

leasing top secret information in reports of 1947 on Korea, and Lieut. Gen. Albert Wedemeyer in a national broadcast disputing the facts as presented by Senator Morse and President Truman. In his final appeal made in Boston, with a national radio and television audience, Eisenhower emphasized five guiding moral principles, but rested his case on attainment of peace. President Truman, in predicting victory for the Democrats, said, "We are going to win for the policies that have made our country prosperous, the policies that have given every man a better opportunity and saved the free world from Communism."

All national surveys predicted a close election. It was anticipated that the unusual interest evident in greatly increased registration would be reflected in a national vote reaching perhaps 60,000,000. National political parties, in organization and in leadership, had never played so large a part in the thinking and feeling of the electorate as during this long and uncertain campaign.

The minor parties rarely appeared in public discussions of the campaign. The nominee of the Independent Progressives, Vincent Hallinan, contented himself for the most part in denouncing both the Democratic and Republican parties as "warmongers." The Socialist appeal was usual, and, in absence of an aggressive nominee, received little attention. In New York state the Liberal party had a state ticket but gave its national support to the Democratic nominee, who addressed them in a special broadcast the week before the end of the campaign. (For the results of the election, see ELECTIONS, U.S.; see also COMMUNISM; SOCIALISM; UNITED STATES.) (E. E. R.)

Political Science. During 1952 representatives of a dozen nations ranging as widely as Mexico and India, Great Britain and the United States, met in Cambridge, Eng., to put the finishing touches on a report dealing broadly with the scope and purpose, aims and problems, of international political science. In addition to the obvious academic value of such collaborative effort, the immediate practical necessity was to provide so-called underdeveloped countries with a better knowledge of how to organize governments and train leaders so as to cope with problems of industrialization and growth.

As of 1952, it might be said that there were three main currents or emphases more or less differentiating the treatment of political science in the various countries. There was the legal tradition of the European continent, the historical-cultural method of British universities, and the more nearly autonomous and scientific emphasis of the United States. When in 1951 the American Political Science association published its study, *Goals for Political Science*, which was the product of a committee study extending over four years, it was found that there were 5,000 persons teaching political science in U.S. colleges and universities, that more than 300 of these institutions provided a major in the subject, that 112 offered the master's and 41 the doctor of philosophy degree in political science, and that 70% of the departments were organized on an independent (discrete, separate) basis.

The greatest demand for students trained in this field was in law (where political science is a popular prelegal subject); for entrance into the public service and especially into the administrative branch (in 1952 the latter accounted for 95% of all employment opportunities); and for work in the fields of diplomacy, journalism, civic organizations and the like which, although no one of them afforded large numbers of openings, were among the most important areas of professional endeavour. The subjects that had become most popular among students were public administration and international relations, the former because of its obvious vocational pertinence and the latter because of the rapidly accelerating importance of compara-

tive government and world politics.

Eight subdivisions of political science had been recognized by the American Political Science association: political theory and philosophy; political parties, public opinion and pressure groups; legislatures and legislation; constitutional and administrative law; public administration; government and business; international law and relations; and United States government and comparative government. Scientific methods of investigation were principally applied in the area of political behaviour, what causes it and how to predict it; with regard to certain phases of public administration such as the principles of organization; in studies of the sources and methods of political power among competing nations; and in the attempt to develop an over-all theory of the factors inducing permanence and change. Illustrative of what may be called the American approach is Robert M. MacIver's book, *The Web of Government* (1948).

In the British tradition, political science had long been a basic subject in the historical-cultural concentration, but until recently there had been few evidences of autonomy or specialization. The Oxford "Modern Greats," for example, was a combination of politics, philosophy and economics. In Britain it was only at the London School of Economics and Political Science that there was a clearly established department of political science covering most branches of the subject usually found in the United States.

Wherever political science was simply a branch of the faculty of law, which was the continental tradition, the emphasis was inevitably juristic. In some cases, as at the University of Paris, the law faculty had become, in effect, a faculty of social science dominated by law. As in economics, sociology and all the other social sciences, the student of political science was required to take basic subjects possessing purely legal interest before he could proceed. One result of this pattern was the organization of autonomous schools of political science outside the faculties of law. Examples were the Free School of Political Sciences and the National School of Public Administration in France, the Advanced Schools for Politics in Berlin and Wilhelmshaven, Ger., and similar institutions of recent origin in Mexico, Egypt, Greece, Poland and Yugoslavia.

The trend away from the strictly legal to a broader conception of political science had become most marked in countries such as France and the United States where once the legal emphasis predominated. British universities were as determined as ever not to forsake their cultural tradition for a vocational one, but at the same time they saw a need for more research and training in the governmental arts, which had come to influence so much of community life. In the United States, on the other hand, there was a broadening of the subject to include related emphases and contributions such as those from psychology and anthropology, with the result that in that country the need was perhaps for a greater degree of integration than had formerly existed.

Thus in 1952 it was clear that international relations as a subject of intensive study would grow in importance. It was concerned with basic concepts of political science such as sovereignty, nationalism, law and power conflicts. It was expected that the methods of analysis in political science would be extended so as to make a more effective impact on stubborn problems such as war. With government employing from 8 to 10 people out of every 100 of the population in liberal, democratic countries such as the United States, and with governments administering so many programs of great intricacy and scope, there was a growing need to train future leaders for legislatures, political parties, the foreign service and the numerous cadres of public administration. How to square the equally legitimate de-

mands of professionalization and a liberal arts education was no easy assignment for the universities. Finally there was the vexatious problem of what to do about citizenship education. As the responsibilities of government increase, so also do the duties of the citizen increase. Can citizenship be taught, and if so, should political science bear a major share of the responsibility? At the international conference at Cambridge in 1952 opinion was sharply divided on this issue, some arguing that so long as teaching is objective instead of doctrinaire, citizenship should be taught to everyone, the opposition contending that the dangers of propaganda and indoctrination are so great that such efforts are unduly hazardous.

As the year drew toward a close, these were some of the policy decisions that had to be made as political scientists in many parts of the world faced the future. The profession was a steadily growing one, for the problems with which political scientists deal are as imperative as war, slum clearance and the freedom of the individual. (M. E. DK.)

Polo. The Beverly Hills Polo club won the national open championship on June 1, 1952, when it defeated San Francisco, 9-6, in the final on its home field at Los Angeles, Calif. Bostwick field at Old Westbury, L.I., N.Y., was the scene of the United States 20-goal competition, which was won by the Meadow Brook club, Long Island, when it routed the Milwaukee Shamrocks, 12-1, on Sept. 28. The Shamrocks gained some measure of satisfaction in the final of the Monty Waterbury handicap tournament at Westbury on Oct. 4 when they topped Meadow Brook, 7-6. The Blind Brook Polo club of Purchase, N.Y., gained the national 12-goal championship by default on Oct. 5 when Meadow Brook was unable to field its team for the final round. Bostwick field annexed the Hempstead cup, and the Brandywine Polo club of Philadelphia carried off the trophy in the 16-goal Autumn Plates play. Pittsfield, Mass., Northeastern titleholder, won the national intercircuit honours by defeating the Milwaukee Shamrocks, the Central champions, by 13-7. A series between a California four and the El Trebol riders of Argentina at Los Angeles featured international competition. The coast four triumphed by taking the third contest, 6-4, after winning the first game by 8-7 and losing the second by 8-7 in overtime.

The New York Athletic club captured two of the major titles during the indoor season, winning the national senior crown and Eastern 12-goal laurels. New Jersey riders triumphed in the annual Sherman Memorial cup tourney, and the New Mexico Military institute took national intercollegiate laurels. (T. V. H.)

Popular Music: see MUSIC.

Population, Movements of: see REFUGEES.

Populations of the Countries of the World: see AREAS AND POPULATIONS OF THE COUNTRIES OF THE WORLD.

Population Statistics: see CENSUS DATA, U.S.

Pork: see MEAT.

Porto Rico: see PUERTO RICO.

Portugal. A republic of southwestern Europe, forming part of the Iberian peninsula, Portugal is bounded east and north by Spain. Area: 35,415 sq.mi., including Azores (888 sq.mi.) and Madeira (302 sq.mi.). Pop.: (1940 census) 7,722,152; (1950 census, prelim.) 8,490,455, including Azores (318,686) and Madeira (269,179); (1951 est.) 8,606,000. Language: Portuguese. Religion: Roman Catholic. Chief towns (pop., 1940 census): Lisbon (cap., 709,179); Oporto (262,309); Funchal, Madeira (54,856); Coimbra (35,437). President of the republic in 1952: Gen. Francisco Higino Craveiro Lopes; prime minister: Antonio de Oliveira Salazar.

History.—On the last day of 1951 a new steel-arch bridge over the Tagus river was opened by the president of the republic at Vila Franca de Xira, about 40 mi. above Lisbon. It was the longest in Portugal and one of the major bridges of the European continent.

The ninth session of the council of NATO (the North Atlantic Treaty organization), which met in Lisbon, Feb. 20-25, was the most notable of a series of international gatherings in the Portuguese capital during 1952. Among others were the European committee of the World Health organization, the U.N. Food and Agriculture organization, the International Wheat council, the International Congress of Industrial Medicine, the fifth International Congress of Neurology, the International Roads congress, the congress of the International Housing and Town Planning federation and, at Fátima, the ceremonial closing of the Holy Year celebrations.

Prime Minister Salazar crossed into Spain to meet Gen. Francisco Franco for a two-day conference at Ciudad Rodrigo in April. It was understood that problems related to the defense of the Iberian peninsula were the principal object of the meeting.

In June the terms of the 1951 agreement with the United States for the granting of military facilities in the Azores were made public: it transpired that Portugal had reserved the right to extend similar facilities to Great Britain and possibly to other members of NATO if the need should arise. A project for the reform of military aviation became effective by the establishment of an undersecretaryship for aviation directly responsible to the minister of national defense. Ruy Luis Gomes, a former presidential candidate, was sentenced to three months' imprisonment and five years' loss of civil rights for "conspiring against the security of the state."

The financial year 1951 was closed with a credit balance of 47,000,000 escudos. New trade and economic agreements were concluded with France, Ireland, the United Kingdom, Denmark, the German Federal Republic, Sweden, Belgium and Italy; various other agreements of a similar nature were revised or renewed. The 1952 budget provided a sum of 180,000,000 escudos for health and other social services, and 592,000,000 escudos as the first of three approximately equal annual instalments for the rearmament program in fulfilment of Portugal's international obligations as a member of NATO.

Further developments in the national electrification scheme were the completion of the system at Cávado-Rabagão in northern Portugal, and formal authorization of a new hydroelectric system for the island of Terceira in the Azores at a cost of 26,000,000 escudos. The ambitious plan of national development, details of which were published in September, provided for an estimated capital expenditure of 13,500,000,000 escudos in six years. This was nearly two and a half times the annual national budget. (F. B. H.)

Education.—Schools (1948-49): primary 10,646, pupils 598,190, teachers 14,445; private elementary, pupils 60,158; secondary 42, pupils 19,997, teachers 1,096; private secondary, pupils 25,316; technical 67, pupils 36,533, teachers 1,591; commercial 8, pupils 3,095, teachers 217. Colonial high school, students 113, professors 15. Universities 3, students 8,883, professors and lecturers 475; other institutions of higher education 4, students 5,576, professors and lecturers 278. Illiteracy (1940): 49%.

Finance and Banking.—Budget (1951 actual): revenue 4,100,000,000 escudos, expenditure 5,177,000,000 escudos. National debt (1950): 12,337,000,000 escudos. Currency circulation (June 1952): 8,370,000,000 escudos. Bank deposits (June 1952): 20,240,000,000 escudos. Monetary unit: escudo, with an exchange rate (Nov. 1952) of 80.50 escudos to the pound sterling and 28.95 escudos to the U.S. dollar.

Foreign Trade.—(1951) Imports 9,497,000,000 escudos; exports 7,561,000,000 escudos. Main sources of imports (1951): U.K. 17%; Portuguese overseas territories 16%; U.S. 16%. Main destinations of exports (1951): Portuguese overseas territories 25%; U.K. 17%; U.S. 13%. Main imports (1951): wheat 8%; machinery and vehicles 23%; coal, petroleum and products 11%; raw cotton 6%. Main exports (1951): cotton fabrics 13%; cork and manufactures 17%; port and other wines 11%; sardines and other canned fish 10%.

Transport and Communications.—Roads (1949): 16,697 mi. Licensed motor vehicles (Dec. 1950): cars 65,000; commercial vehicles 24,000. Railways (1949): 2,246 mi.; passenger-miles (1949) 917,000,000; freight carried (1950) 3,324,000 metric tons. Shipping: merchant vessels 100 gross tons and more (July 1951) 319; total tonnage 501,985. Telephones (1951): 152,580. Radio receiving set licences (1949): 187,385.

Agriculture.—Main crops (metric tons, 1951): wheat 604,000; barley 137,000; oats 147,000; maize 422,000; rye 196,000; rice, paddy, 127,000; potatoes 1,208,000; dry beans 55,000; grapes (1949) 1,360,000. Wine production (1950): 7,250,000 hl. Olive oil production (1951 est.): 82,000 metric tons. Livestock (Dec. 1948): cattle 1,000,000; sheep 4,000,000; pigs 1,200,000. Meat production (1951): 72,000 metric tons. Fisheries, total catch (1951): 307,455 metric tons.

Industry.—Fuel and power (1951): coal 417,600 metric tons; lignite 82,800 metric tons; manufactured gas 43,800,000 cu.m.; electricity 1,034,000,000 kw.hr. Raw materials (metric tons): lead (1950) 2,040; tin ores (1949) 2,654; wolframite (1950) 2,199; pyrites (1950) 613,521; cork (1949) 103,108; kaolin (1949) 21,941. Manufactured goods (metric tons, 1951): cement 639,600; woven cotton fabric 25,700; cotton yarn 31,600.

Portuguese Overseas Territories. Under this heading are grouped the Portuguese possessions in Africa and Asia. Their total area is approximately 803,835 sq.mi. and the total population (mid-1950 est.) 11,986,371. Areas, populations, capital towns and governors of the territories are given in the accompanying table.

History.—The six-year national development plan envisaged capital expenditure of between 5,000,000,000 escudos and 6,000,000,000 escudos in the overseas provinces, principally in Angola and Mozambique. Irrigation, agriculture, hydroelectric schemes and the improvement of railway and air communications and port facilities were among the principal projects. Some of these made good progress in 1952, including the extension of the railway line from Moamba to Guijá (Mozambique) and the Limpopo bridge barrage. It was reported that the new port of Nacala in northern Mozambique was expected to be one of the best ports on the east coast of Africa within a relatively short space of time.

Statistics were published, covering the year 1951, showing considerable increases in coffee and sisal production in Angola. U.S. grants for colonial development under the Economic Cooperation administration totalled 62,000,000 escudos.

Radiotelephone communications between metropolitan Portugal and the overseas territories were expanded by the inauguration of new services to Angola, Cape Verde and São Tomé. New radiotelephone installations at Goa, Macao, Timor and Portuguese Guinea reached an advanced stage of completion. Telephone rates to Mozambique were reduced by more than 50%.

The far eastern tour of Commander Sarmento Rodrigues, minister for the overseas territories, ended in Macao just prior to a shooting incident between Portuguese and Chinese guards which resulted in the temporary closing of the international frontier in July. Some delicate diplomacy on both sides brought about an amicable settlement of the affair, under which Portugal paid an indemnity. The 400-year old peace was re-established and Macao remained a curiously unchallenged outpost of "west-

ern imperialism" in the Chinese people's republic.

In the enclaves of Goa, Damão and Dio there was not the same apparent calm toleration on the part of India. Portugal firmly maintained that its ancient Indian footholds were an integral part of the Portuguese republic, and that their status as such could not be altered. India continued to resent this attitude and remained determined to free all the enclaves from non-Indian rule. Meanwhile commercial and economic relations between the territories and India suffered from the effects of the Indian customs cordon and from smuggling and other forms of lawlessness in the border areas.

(F. B. H.)

Angola.—Education: primary schools (1948) 142, pupils 9,007; secondary (1947) 21, pupils 2,239; technical (1947) 17, pupils 783. Budget (1950 est.): balanced at 845,246,000 angolars. Monetary unit: angolar at par with the escudo. U.S. \$1=28.95 escudos. Foreign trade (1951): imports 2,172,000,000 escudos, exports 3,192,000,000 escudos. Roads (1949): 21,772 mi. Railways (1949): 1,771 mi. Shipping (1949): vessels entered 3,748, net tonnage 3,638,530. Principal products: maize, sugar, coffee, beans, sisal, palm oil, diamonds.

Cape Verde Islands.—Education: primary schools (1948) 111, pupils 5,234; secondary (1947) 1, pupils 257. Budget (1950 est.): balanced at 33,550,000 escudos. Foreign trade (1950): imports 245,900,000 escudos, exports 227,600,000 escudos. Shipping (1949): vessels entered 4,126, net tonnage 2,807,822. Principal products: mineral oil, coal, fish.

Guinea.—Budget (1950 est.): balanced at 74,650,000 escudos. Foreign trade (1949): imports 142,200,000 escudos, exports 160,800,000 escudos. Shipping (1948): vessels entered 83, net tonnage 103,502. Principal products: peanuts, coconuts, palm oil.

São Tomé and Príncipe Islands.—Budget (1950 est.): balanced at 41,996,000 escudos. Foreign trade (1950): imports 109,100,000 escudos, exports 209,500,000 escudos. Shipping (1948): vessels entered 118, net tonnage 45,862. Principal products: cocoa, coconuts, copra, palm oil.

Mozambique.—Education (1949): elementary schools 850, pupils 137,805; primary 127, pupils 10,254; secondary 6, pupils 784; technical 57 including 3 teachers' training colleges, students 5,991. Budget (1951 est.): balanced at 1,535,650,462 escudos. Foreign trade (1951): imports 2,044,000,000 escudos, exports 1,252,000,000 escudos. Roads (1949): 18,078 mi. Railways (1949): 1,652 mi. Shipping (1949): vessels entered 1,988, net tonnage 6,905,468. Principal products: sugar, copra, cotton, sisal.

Post Office. **United States.**—Revenues of the post office department for the fiscal year 1951-52 amounted to \$1,947,316,280.38. Additional postage that would have been collected if the service had been on a regular pay basis in the case of penalty and franked mail, free-in-county mail, differentials in second-class mail matter and free matter for the blind and the cost of aircraft service over the postage revenue derived from air mail was estimated at \$107,200,000.

The expenditures of the department for the fiscal year amounted to \$2,666,860,370.81, of which amount \$169,381,411.46 was on account of prior years. There was \$176,887,538.40 unpaid on account of the 1952 fiscal year. This left a total expense of \$2,674,366,497.75, resulting in a gross operating deficit on accrual of \$727,050,217.37.

During the fiscal year ended June 30, 1952, 1,446,500,000 free pieces weighing 107,622,000 lb. were mailed for other government departments, an increase of 207,000,000 pieces and 16,600,000 lb. over 1951.

On June 30, 1952, war savings stamps were on sale at 40,919 offices. Sales from July 1, 1951, to June 30, 1952, amounted to \$17,042,051.55. During the fiscal year savings bonds with a sale value of \$269,177,062.50 were sold. At the close of the fiscal year 1952, bonds were on sale at 26,167 post offices.

Through the 40,919 post offices and 4,148 stations being conducted under contract agreement, as well as 2,438 stations and branches, there were received in the domestic mails

Portuguese Overseas Territories

Country	Area (sq.mi.)	Population (1950 census)	Capital	Governor
AFRICA				
Angola	481,351	4,111,796 Eur. 78,903	Luanda (pop. 137,139)	†Capt. José Agapito da Silva Carvalho
Cape Verde Is.	1,557	147,097 Eur. (1940) 5,580	Praia (pop. 1940, 6,000)	Maj. Carlos Alberto Garcia Alves Roçadas
Portuguese Guinea	13,948	508,970 Eur. 2,254	Bissau (pop. 5,700)	Raimundo António Rodrigues Serrão
São Tomé and Príncipe Is.	372	62,159 Eur. 1,152	São Tomé (pop. 2,605)	Lieut. Col. Carlos de Sousa Gorgulho
Mozambique	297,731	5,730,930 Eur. 48,910	Lourenço Marques (pop. 1940, 48,000)	†Comdr. Gabriel Mauricio Teixeira
ASIA				
Portuguese India	1,538	638,000	Nova Gôa	†Comdr. Fernando Quintanilha de Mendonça Dias
Macao	6.2	347,041* Port. (1949) 4,626	Macao	Comdr. Joaquim Marques Esparteiro
Timor	7,332	422,378 Eur. 568	Dili (pop. 1940, 7,000)	Capt. Cesar Maria de Serpa Rosa

*1949 census. †His title is governor general.



AUTOMATIC MAIL ROUTING machine in use at Antwerp, Belg., in 1952 and of interest to U.S. postal authorities for possible adoption. As letters passed before the sorter on a conveyer (from right), he pressed buttons keyed to proper boxes of destination, sorting about 200 a minute

and from foreign sources, transported and delivered 49,741,000,000 pieces of mail matter during the fiscal year, having a weight of 11,534,000,000 lb., an increase of 2,833,000,000 pieces but a decrease of 375,000,000 lb. from the previous year.

During 1952 it was impossible to deliver 22,797,455 letters, a decrease of .60% from the previous year. A total of 3,456,612 letters were returned to senders. Letters containing valuable enclosures numbered 459,687, of which 97,855 contained money amounting to \$256,339.00. There were also 901,231 unclaimed parcels and articles found loose in the mails. Of these, a total of 139,924 were returned to the senders. The remaining 761,307 parcels were sold at public auction and \$350,366.82 was realized.

On June 30, 1952, there were 162,167 mi. of domestic air-mail routes in the United States—a decrease of 833 mi. from the previous year.

Rural Delivery.—The rural delivery routes in operation on June 30, 1952, required a total daily travel of 1,492,935 mi. by rural carriers in providing service to approximately 33,586,628 patrons. Operation of the service resulted in an expenditure of \$188,911,662 for the fiscal year, compared with \$168,762,382 for the previous year.

Postal Savings.—Postal savings depositors numbered 3,339,378 for 1952, a decrease of 5.39% from the preceding year. The balance due depositors by outstanding certificates of deposits was \$2,617,234,673, a decrease of \$170,683,571, or 6.12%. In addition there was held in trust for depositors accrued interest of \$108,407,638.33 and unclaimed deposits of \$329,463.00, making a total of \$2,725,971,774.33.

Buildings.—During the fiscal year ended June 30, 1952, the post office department operated 3,173 government-owned buildings.

During the fiscal year air-mail service by helicopter was inaugurated between LaGuardia airport in New York city and the International airport—Idlewild, and between the International airport and Newark, N.J. Helicopter service was also in existence at Los Angeles, Calif., and Chicago, Ill., and had been extended to certain towns in New York state and Connecticut.

Since the inauguration by the post office department of the system of carrying bulk mails on short hauls by trucks under

the star route law instead of by railroads, 325 such routes had been placed in operation by June 30, 1952. This service had resulted in a substantial saving in the cost of transportation of bulk mail. (See also AVIATION, CIVIL.) (I. Gg.)

Canada.—In March 1951, after many years of surplus operation, the Canadian post office showed a deficit of about \$1,300,000. Accordingly, the department raised the rates on various classes of mail and effected economies, such as cutting urban mail deliveries from twice a day to once a day. Such activities reduced expenditures during the 1951-52 fiscal year by about \$8,500,000, to a total of \$98,300,000. Revenues amounted to about \$104,000,000. Thus, at the end of the 1952 fiscal year the department again showed a surplus. Among the stamps issued during 1952 were: a blue 4-cent to honour the Red Cross; a blue 7-cent air mail carrying a drawing of a Canada goose in flight; an orange 4-cent with the picture of Alexander Mackenzie, Canada's second prime minister; and a purple 3-cent with a picture of Sir John J. C. Abbott, fourth Canadian prime minister. (See also PHILATELY.) (C. Cy.)

Potash: see MINERAL AND METAL PRODUCTION AND PRICES.

Potatoes. Instead of a surplus to be destroyed or wasted as during most of the years when white potato prices were supported in the United States, there was an acute shortage during the first half of 1952 following the small unsupported 1951 crop of 325,708,000 bu. The indicated 1952 crop (also not price-supported) of 345,561,000 bu. was small compared with the 414,525,000 bu. average for 1941-50. The 1,418,000 ac. for harvest were 4.8% more than in 1951, but a sharp decline compared with the 2,401,000 ac. harvested as an average for 1941-50. High prices at planting time favoured expanded acreage and, though plantings did exceed farmers' early intentions of only 1,373,000 ac., they were short of the officially suggested goal of 1,475,000 ac. The yield of 243.7 bu. per acre was slightly larger than the 240.7 bu. of 1951 and substantially

Table I.—U.S. Potato Production by Leading States

(In thousands of bushels)

State	Indicated 1952	1951	Average 1941-50
Late Crop			
Maine	51,000	45,835	61,882
Idaho	45,120	37,520	39,312
New York	29,180	27,900	33,183
Colorado	17,390	11,475	12,627
North Dakota	16,280	15,580	19,772
California	14,040	12,800	12,778
Pennsylvania	13,650	16,215	19,990
Minnesota	12,765	11,900	17,209
Oregon	12,060	11,220	10,960
Wisconsin	11,115	9,805	12,820
Michigan	10,730	10,800	16,958
Washington	10,400	11,600	9,905
Nebraska	8,250	6,000	10,518
Ohio	5,000	5,750	7,656
Intermediate Crop			
Virginia	4,644	6,882	8,352
New Jersey	4,625	7,476	11,462
Kentucky	1,596	1,960	3,265
Arizona	1,487	1,387	1,292
Missouri	1,118	1,456	3,022
Early Crop			
California	25,200	21,805	23,610
Florida	7,706	6,321	4,398
North Carolina	5,880	6,909	9,572
Alabama	4,118	4,216	4,047
Texas	2,040	2,204	4,402
South Carolina	2,030	1,937	2,295
Tennessee	1,440	1,539	3,005

higher than the 180.4 bu. of 1941-50. Anticipated consumption per person was 102 lb., 98% as much as in 1951 and 78% of the pre-World War II usage. Maine, as usual, was the leading producer among the late crop states, but the yield per acre was only 375 bu. against 445 bu. in 1951. Prices to producers were at high levels reaching \$3.10 per bushel in June, and in September, as the major part of the crop was coming to market, were \$2.22 per bushel, compared with \$1.23 at the same time

in 1951. Prices rose as much as \$2.00 to \$4.00 per hundred-weight wholesale when price ceilings were removed. Prior to that, blackmarketing was prevalent and numerous prosecutions were begun. Some café chains boycotted potatoes. The futures market was very active and erratic. Spain exported potatoes to eastern U.S., even to Washington, D.C., where the imports sold wholesale for \$5.81 per hundredweight, compared with a \$6.40 ceiling on domestic potatoes.

World production of potatoes in 1952-53 was preliminarily indicated at 7,755,003,000 bu. from 52,109,000 ac., 2% smaller than the 7,892,213,000 bu. from 52,257,000 ac. in the previous year. Europe, excluding the U.S.S.R., produced more than half the world crop. Approximately 75,000,000 bu. entered international trade in 1951, 5% less than in the previous year but 60% above pre-World War II. The Netherlands was the leading exporter, followed by France and Canada. France, the United Kingdom and Spain were leading importers.

Table II.—Potato Production of the Principal Producing Countries
(In thousands of bushels)

Country	1952*	1951	1950	Average 1935-39
U.S.S.R.	2,900,000	2,600,000	2,900,000	2,713,054
Poland	975,000	975,000	1,140,000	1,397,000
Western Germany	808,000	918,600	1,027,000	718,000
France	410,482	493,826	530,230	631,052
Eastern Germany		400,000	480,000	501,000
United States	345,561	325,708	429,896	355,504
United Kingdom	281,120	309,269	354,928	182,859
Czechoslovakia		240,000	275,000	371,415

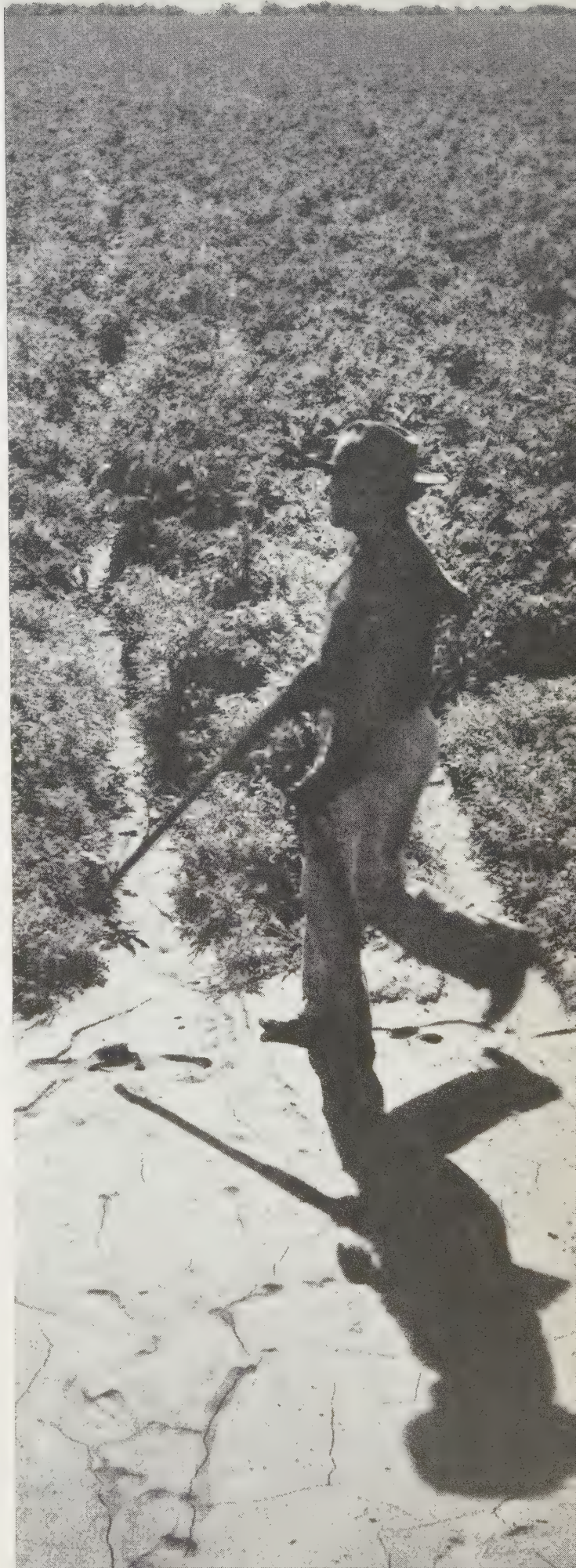
*Preliminary.

Sweet Potatoes.—The indicated U.S. 1952 sweet potato crop of 30,814,000 bu., though 9% more than the record small crop of 1951, was only 53% of the 1941-50 average. Indicated civilian consumption per capita was 7.5 lb., 15% more than in 1951 but only 35% of the prewar 21.4 lb. per capita average. The 338,000 ac. for harvest were nearly 10% more than in 1951, but small compared with the 625,000 ac. average for the previous decade. The official goal was 472,000 ac. In spite of serious summer drought in much of the producing areas, the indicated average yield of 91.2 bu. per acre was not much below 1951 (91.8 bu.) or the 1941-50 average of 93.0 bu. per acre. Louisiana, as usual, was the leading producer with more than one-fourth of the total crop (8,400,000 bu.), followed by North Carolina (4,410,000 bu.). Prices to producers at harvest time were about \$3.35 per bushel (55 lb.), compared with \$2.87 per bushel at the same period in 1951. (See also VEGETABLES.)
(J. K. R.)

Poultry: see LIVESTOCK; MEAT.

Prasad, Rajendra (1884-), Indian statesman, was born in the Saran district, Bihar, Dec. 3. He was educated at Presidency college, Calcutta, took his doctorate in law at Allahabad university and in 1914-16 was a professor at the Calcutta university law college. In 1917 he joined Gandhi in the famous Champaran (Bihar) *satyagraha* ("insistence on truth"; i.e., nonviolent disobedience to unjust laws)—an attempt to improve the lot of the peasantry of that district. In 1920 he gave up a promising legal career to devote himself completely to the Mahatma's nonco-operation movement. He became general secretary of the Indian National Congress in 1922 and was president of the Congress in 1932, 1934, 1939 and 1947-50. His only cabinet office was that of member (later minister) for agriculture and food in the interim and fully constituted governments of 1946-48. He was chairman of the constituent assembly from Dec. 1946 and two days before the proclamation of the Republic of India on Jan. 26, 1950, he was named as its first president. On May 6, 1952, Rajendra

POTATO CROP on a farm near Altus, Okla., being patrolled by armed guard to protect the potatoes from pillagers during a nation-wide potato shortage in the spring of 1952



Prasad was declared re-elected as president of the Indian union. He was sworn in on May 13, when he also presided over the swearing-in of the new cabinet.

President Prasad presided over a conference of state governors and *rajpramukhs* in New Delhi on March 14-15. On April 22 he received the credentials of Ernst Meyer, the first ambassador to India from the German Federal Republic. On Oct. 2 he opened the Gandhidam (Kutch)-Deesa (Bombay) railway.

Precious Stones: see GEM STONES.

Presbyterian Church. The churches of the Reformed faith, with the Presbyterian form of representative government, in the United States include the following denominations: Presbyterian Church in the U.S.A. (Northern); Presbyterian Church in the U.S. (Southern); United Presbyterian Church; Evangelical and Reformed Church; Reformed Church in America; Associate Reformed Presbyterian Church; Free Magyar Reformed Church in America; Christian Reformed Church; Cumberland Presbyterian Church; Cumberland Presbyterian Church (Colored); Synod of the Reformed Presbyterian Church; Reformed Presbyterian Church, General Synod; Associate Presbyterian Church Synod; Orthodox Presbyterian Church; Bible Presbyterian Church.

The first seven of these churches are constituent members of the western section of the Alliance of Reformed Churches throughout the World Holding the Presbyterian System. The Presbyterian Church in Canada and the United Church of Canada are also members of this western section. These nine constituent members of the alliance in 1952 had approximately 20,000 churches with a communicant membership of more than 5,300,000.

In the interest of united action, the Presbyterian Church in the U.S., the United Presbyterian Church and the Presbyterian Church in the U.S.A. united their programs in evangelism, stewardship, pulpit exchange and providing chaplains for the armed forces. Another step in a united program developed in the formation of a committee, consisting of members from the Presbyterian Church in the U.S.A., the Presbyterian Church in the U.S., United Presbyterian Church, Reformed Church in America and Associate Reformed Presbyterian Church, to prepare a joint hymnal. The Presbyterian Church in Canada indicated its intention to join in this hymnal project. In May 1952 representatives of the Congregational Christian Churches and the Evangelical and Reformed Church resumed negotiations for merger after a court order in 1950 blocked the proposed merger.

In a wider co-operative program, five Presbyterian and Reformed churches, the Evangelical and Reformed Church, Reformed Church in America, United Presbyterian Church of North America, Presbyterian Church in the U.S. and Presbyterian Church in the U.S.A., joined with 24 other denominations in the National Council of Churches of Christ in the United States of America "in a common Christian witness and a co-ordinated program for a combined impact upon the national life." At the beginning of its second year the combined denominations had 144,000 congregations with a communicant membership of 33,000,000.

Special emphasis was placed on evangelism and missionary endeavour. The urgency "to restore the Bible to its rightful place in the preaching, teaching, and fellowship of the Church, and in the life of the family and of the individual believer" key-noted these unified endeavours. The formation of new communities had confronted the various denominations with the problem of establishing new churches without overlapping and through evangelism of bringing the unchurched to a sense of

their responsibility to God. Both the Reformed and Presbyterian churches through organized missions took steps to cope with this problem. Campaigns for building funds were instituted. The 150th anniversary year of the Board of National Missions of the Presbyterian Church in the U.S.A. provided the occasion for a building funds campaign for \$12,000,000 to build churches in these new communities. More than \$6,625,000 had been pledged by the end of May. The Presbyterian Church in the U.S. reported that 57 new churches had been organized during the period of 1951-52 and that in five years of the Program of Progress 263 churches had been established.

Europe.—The eastern section of the alliance, with headquarters in Geneva, Switz., reported the extension of its work in Europe, the British Isles, Australasia and Asia and that the young Presbyterian and Reformed churches in Africa and Latin America had shown a vital interest in the purpose of the alliance. (See also CHURCH MEMBERSHIP.) (G. S. K.)

President's Materials Policy Commission: see MATERIALS POLICY COMMISSION.

Presidents, Sovereigns and Rulers. The following list includes the names of those holding chief positions in their countries as of Oct. 1, 1952:

Country	Name and Office	Accession
Afghanistan . . .	Mohammed Zahir Shah, King	1933
	Shah Mahmud, Prime Minister	1946
Albania	Omer Nishani, Chairman of the Presidium of the People's Assembly	1946
	Gen. Enver Hoxha, Prime Minister	1944
Arabia, Saudi . .	'Abd-al-'Aziz ibn 'Abd-al-Rahman ibn Faisal ibn Sa'ud, King	1927
Argentina . . .	Gen. Juan Domingo Perón, President	1946
Australia . . .	Sir William John McKell, Governor General	1947
	Robert Gordon Menzies, Prime Minister	1949
Austria	Theodor Koerner, President	1951
	Leopold Figl, Chancellor	1945
Bahrein	Sir Sulman ibn Hamad al Khalifah, Sheikh	1942
Belgium	Baudouin I, King	1951
	Jean Van Houtte, Prime Minister	1952
Bolivia	Victor Paz Estenssoro, President	1952
Brazil	Getúlio Dornelles Vargas, President	1951
Bulgaria	Georgi Damjanov, Chairman of the Presidium	1950
	Vulko Chervenkov, Premier	1950
Burma	Ba U, President of the Union of Burma	1952
	U Nu (formerly Thakin Nu), Prime Minister	1948
Canada	Vincent Massey, Governor General	1952
	Louis Stephen St. Laurent, Prime Minister	1948
Ceylon, Dom. of	Lord Soulbury, Governor General	1949
	Dudley Senanayake, Prime Minister	1952
Chile	Gabriel González Videla, President	1946
China	Chiang Kai-shek, President of the National Government	1943
	Gen. Chen Cheng, Premier	1950
China, People's Republic of . .	Mao Tse-tung, Chairman of the Central People's Government of the People's Republic of China	1949
Colombia	Roberto Urdaneta Arbeláez, Acting President	1951
Costa Rica . . .	Otilio Ulate Blanco, President	1949
Cuba	Gen. Fulgencio Batista, Provisional President	1952
Czechoslovakia .	Klement Gottwald, President	1948
	Antonín Zápotocký, Prime Minister	1948
Denmark	Frederick IX, King	1947
	Erik Eriksen, Prime Minister	1950
Dominican Rep.	Gen. Hector Trujillo y Molina, President	1952
Ecuador	José María Velasco Ibarra, President	1952
Egypt	Ahmed Fuad II, King	1952
	Mohammed Naguib, Prime Minister	1952
Ethiopia	Haile Selassie I, Emperor	1930
	Bitwoded Makonnen Endalkatchou, Prime Minister	1944
Finland	Juho K. Paasikivi, President	1946
	Urho K. Kekkonen, Prime Minister	1950
France	Vincent Auriol, President of the Fourth Republic	1947
	Antoine Pinay, President of the Council of Ministers (Premier)	1952
Germany (East)		
German Democratic Rep. . .	Wilhelm Pieck, President	1949
	Otto Grotewohl, Minister-President (Premier)	1949
(West) Federal Rep. of Germany . . .		
	Theodor Heuss, President	1949
	Konrad Adenauer, Chancellor	1949
Great Britain . .	Elizabeth II, Queen	1952
	Winston Churchill, Prime Minister	1951
Greece	Paul I, King	1947
	Nicholas Plastiras, Prime Minister	1951
Guatemala . . .	Lieut. Col. Jacobo Arbenz Guzmán, President	1951
Haiti	Paul E. Magloire, President	1950
Honduras	Juan Manuel Gálvez, President	1949
Hungary	Istvan Dobi, Chairman of the Presidium of the National Assembly	1952
	Matyas Rakosi, Prime Minister	1952
Iceland	Ásgeir Árgreissson, President	1952
	Steingrímur Steinthorsson, Prime Minister	1950
India, Rep. of . .	Rajendra Prasad, President	1950
	Jawaharlal Nehru, Prime Minister	1947

Country	Name and Office	Accession
Indochina		
Cambodia . . .	Norodom Sihanouk, King	1941
Laos	Sisavang Vong, King	1945
Vietnam . . .	Bao Dai, Chief of State	1949
Vietnam Democratic Rep.	Ho Chi Minh, (Communist) President	1945
Indonesia . . .	Achmed Sukarno, President	1949
	Wilopo, Prime Minister	1952
Iran	Mohammed Riza Pahlavi, Shahanshah	1941
	Mohammed Mossadegh, Prime Minister	1951
Iraq	Feisal II, King	1939
	Abdul-Ilah, Prince Regent	1939
	Mustafa el-Umari, Prime Minister	1952
Ireland, Rep. of . . .	Sean T. O'Kelly, President	1945
	Eamon de Valera, Prime Minister	1951
Israel	Chaim Weizmann, President	1948
	David Ben-Gurion, Prime Minister	1948
Italy	Luigi Einaudi, President	1948
	Alcide de Gasperi, Prime Minister	1946
Japan	Hirohito, Emperor	1926
	Shigeru Yoshida, Premier	1948
Jordan	Hussein I, King	1952
	Tewfik Abu-Huda, Prime Minister	1950
Korea (South) Rep. of Korea . . .	Syngman Rhee, President	1948
(North) Democratic People's Rep. of Korea . . .	Kim Il Sung, Premier	1948
Kuwait	Abdullah bin Salim al-Sabah, Sheikh	1950
Lebanon	Camille Shamun, President	1952
	Gen. Fuad Shenab, Prime Minister	1952
Liberia	William V. S. Tubman, President	1944
Libya	Idris I, King	1951
	Mahmud Muntasser, Prime Minister	1951
Liechtenstein . . .	Franz Josef II, Sovereign Prince	1938
	Alexander Frick, Prime Minister	1945
Luxembourg . . .	Charlotte, Grand Duchess	1919
	Pierre Dupong, Premier	1937
Mexico	Miguel Alemán, President	1946
Monaco	Rainier III, Prince	1949
Morocco	Sidi Mohammed ben Youssef III, Sultan	1927
	Gen. Augustin Guillaume, French Resident General	1951
Nepal	Tribhubana Bir Bikram Shah Deva, King	1911
Netherlands . . .	Juliana, Queen	1948
	Willem Drees, Prime Minister	1948
New Zealand, Dom. of . . .	Lieut. Gen. Sir Willoughby Norrie, Governor General	1952
	Sidney George Holland, Prime Minister	1949
Nicaragua	Gen. Anastasio Somoza, President	1950
Norway	Haakon VII, King	1905
	Oscar Torp, Prime Minister	1951
Oman (Muscat) . . .	Said bin Taimur, Sultan	1932
Pakistan	Ghulam Mohammed, Governor General	1951
	Khawaja Nazimuddin, Prime Minister	1951
Panamá	Col. José Antonio Remón, President	1952
Paraguay	Federico Chaves, President	1949
Peru	Gen. Manuel A. Odría, President	1950
Philippines, Rep. of the	Elpidio Quirino, President	1948
Poland	Boleslaw Bierut, Chairman of the Council of State	1947
	Josif Cyrankiewicz, Chairman of the Council of Ministers	1947
Portugal	Gen. Francisco Higinio Craveiro Lopes, President	1951
	Antonio de Oliveira Salazar, President, Council of Ministers (Prime Minister)	1932
Rumania	Petru Groza, Chairman of the Presidium of the Grand National Assembly	1952
	Gheorghe Gheorghiu-Dei, Prime Minister	1952
Salvador, El	Lieut. Col. Oscar Osorio, President	1950
South Africa . . .	Ernest George Jansen, Governor General	1951
	Daniel F. Malan, Prime Minister	1948
Spain	Gen. Francisco Franco, Chief of State (President of the Council of Ministers)	1938
Sudan	Sir Robert George Howe, Governor General	1947
Sweden	Gustav VI Adolf, King	1950
	Tage Erlander, Prime Minister	1946
Switzerland . . .	Karl Kobelt, President, Swiss Confederation	1952
Syria	Col. Fawzi Silo, Chief of State and Prime Minister	1951
	Col. Adib el Shishakly, Vice-Chief of State	1951
Thailand	Phumiphon Adundet, King	1946
	Field Marshal Luang Pibul Songgram, Prime Minister	1948
Tunisia	Sidi Mohammed el-Amin, Bey	1943
	Jean de Hautecloque, French Resident General	1951
Turkey	Celal Bayar, President	1950
	Adnan Menderes, Prime Minister	1950
Union of Soviet Socialist Republics . . .	Nikolai Mikhailovich Shvernik, Chairman of the Presidium of the Supreme Soviet	1946
	Joseph V. Stalin, Chairman of the Council of Ministers	1946
United States . . .	Harry S. Truman, President	1945
Uruguay	Andrés Martínez Trueba, Chairman of the Governing Council	1952
Vatican City . . .	Pius XII, Pope	1939
Venezuela	Germán Suárez Flámerich, President	1950
Yemen	Sayf al-Islam Ahmad ibn Yahya, King	1948
Yugoslavia	Ivan Ribar, President of the Presidium of the People's Assembly	1945
	Josip Brozovich or Broz (Tito), Premier	1944
Zanzibar	Khalifa bin Harub, Sultan	1911
	John Dalzell Rankine, British Resident	1952

dexes fluctuated narrowly, the maximum change from low to high points being less than 2% in each case. Nevertheless, the consumers' price index reached a new all-time high in Aug. 1952, about 1% above the level of the preceding December.

A substantial revision in the method of measuring wholesale price changes was introduced by the bureau of labour statistics in January. Prior to this time wholesale price movements were measured by comparing monthly the prices of about 900 items (classified into 10 groups and 50 subgroups) with their respective prices in the base year 1926. The new index compared monthly the prices of nearly 2,000 commodities (classified into 15 groups and 88 subgroups) with their respective average prices during the three-year period 1947 through 1949. Average sales in 1947 were used to determine the relative importance of each commodity in the new index.

Table I.—Per Cent Increase in Wholesale Prices, by Major Commodity Groups, United States, Prewar Prices to Postwar High Points*

Commodity group	High post-World War II increase from Aug. 1939	High post-World War I increase from July 1914
All commodities	(March 1951) 145	148
Farm products	(March 1951) 234	138
Foods	(Aug. 1948) 182	137
Textile products	(March 1951) 170	252
Fuel and lighting materials	(Dec. 1951) 92	277
Metals and metal products	(Dec. 1951) 106	99
Building materials	(March 1951) 155	218
Hides and leather products	(Feb. 1951) 157	192
Chemicals and allied products	(April 1951) 99	123
Housefurnishings	(April 1951) 110	164
Miscellaneous	(Feb. 1951) 95	102

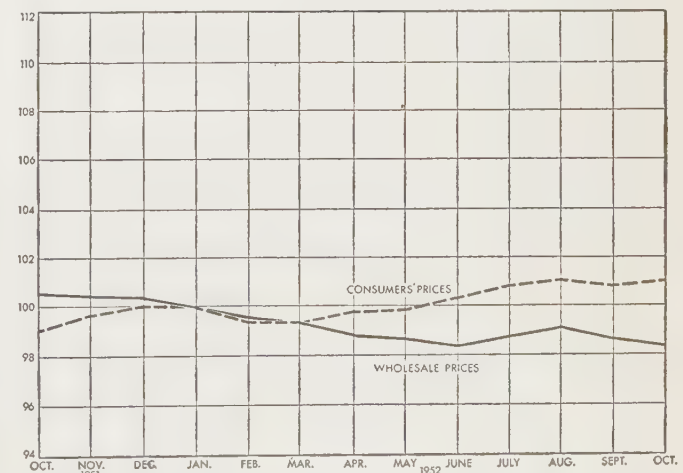
*The high points following World War II are computed through Dec., 1951 from the official wholesale price index (1926 = 100) applicable during that period. The official wholesale price index beginning in Jan. 1952 (1947-49 = 100) is not directly comparable with the old index. However, through Sept. 1952, only metal and metal products appear to have reached a new high, and that in the month of September.

Source: Computed from data published by the Bureau of Labor Statistics of the U.S. Department of Labor. Except as otherwise indicated, all computations presented in this article are based on such data.

Wholesale prices for each major group of commodities in the old index shown in Table I, except for foods, had attained their post-World War II highs in various months during 1951, and foods virtually reached the Aug. 1948 level in Oct. 1951. In general, the indexes for the major groups of wholesale commodities were slightly below their peaks during 1952 with the exception of metals and metal products which reached a new high in September.

However, prices of machinery and motive products reached a new high in February as did prices of tobacco and beverages, while those of nonmetallic minerals reached a maximum in June; none of these major groups was included as such in the old index.

Retail prices, as reflected by the cost-of-living index of the bureau of labour statistics, attained a postwar peak in August.



WHOLESALE AND CONSUMERS' PRICES in the United States, Oct. 1951-Oct. 1952 (Jan. 1952=100) (Source: U.S. Department of Labor, Bureau of Labor Statistics)

Prices. In the United States, both wholesale and retail prices remained relatively stable throughout the year 1952. This general stability of prices reflected both the effectiveness of the anti-inflationary program and, more particularly, the high level of productivity of the economy. Despite continued inflationary potentials, the wholesale and consumers' price in-

The only components of the index which did not reach new highs during the year were apparel and housefurnishings.

As shown in Table II, retail prices increased 94% from Aug. 1939 to Aug. 1952. This inflation in consumers' prices reduced the purchasing power of the dollar by nearly one-half from the beginning of World War II. The increases in prices were particularly notable in foods (152%), housefurnishings (111%) and apparel (108%), all of which led the index upward. Although consumers' prices remained relatively stable in 1952, the immediate increases in these prices following the outbreak of war in Korea in 1950 were not offset by any subsequent price deflation, and consumers' prices were 12% higher than they had been at the outbreak of the Korean conflict. The greatest increases were in food (a sizable item in the budget of the moderate-income family for which the cost-of-living index is computed), housefurnishings and apparel.

Table II.—Per Cent Increase in Cost of Living (Consumers' Retail Prices), by Major Items, United States, Prewar Prices to High Points

Item	High post-World War II increase from Aug. 1939	Highest increase from June 1950
All items	(Aug. 1952) 93.8	12.3
Food	(Aug. 1952) 151.9	16.0
Apparel	(Sept. 1951) 108.4	13.2
Rent	(Oct. 1952) 37.1	9.2
Fuel, electricity, etc.	(Oct. 1952) 52.2	6.7
Housefurnishings	(May 1951) 111.3	15.0
Miscellaneous	(Sept. 1952) 73.7	12.8

Wholesale prices declined slightly each month from January through June, rose slightly in the early summer and then fell once again in September. As shown in Table III, prices of all but two major groups of commodities showed only minor variations. The exceptions were the prices of hides and leather products, which fell abruptly in the spring before stabilizing, and those of rubber and rubber products, which fell rapidly each month through September. The relatively small decrease in the index of all commodity prices was insignificant when compared with the inflation in such prices which had occurred following the outbreak of World War II in Sept. 1939. In January, at their highest level of the year, wholesale prices were 132% above the level of Aug. 1939, 86% above the level prevailing at the time of Pearl Harbor, 54% greater than at the termination of price controls in June 1946, 13% above those prices prevailing at the outbreak of the Korean conflict and 1.7% below the level of prices in Jan. 1951 when price controls were imposed.

Comparisons of consumers' prices toward the end of the year with prices prevailing at significant earlier dates are indicated in Table IV. Prices in September were 94% above the prices prevailing in Aug. 1939, 73% greater than in Dec. 1941, 43% above those prevailing at the time of price decontrol in June 1946, 12% above the level at the outbreak of war in Korea and 5% above those prevailing at the time price controls were introduced in Jan. 1951.

Monthly changes in the various components of the cost-of-living index are shown in Table V. Rents and miscellaneous prices moved steadily upward; clothing and housefurnishings prices

Table IV.—Per Cent Change in Consumers' Prices (Cost of Living) by Major Commodity Groups, United States, Selected Periods, 1939-52

Commodity	Post-war high	Per cent change Sept. 1952 from					
		Jan. 1951	June 1950	June 1946	Dec. 1941	Aug. 1939	Dec. 1951 from Dec. 1950
Food	—1.0	5.1	14.8	60.2	106.2	149.4	7.4
Apparel	—3.2	1.9	9.6	28.7	76.2	101.7	5.8
Rent	0.0	6.9	8.8	31.2	31.6	36.5	4.7
Fuel, electricity and ice	0.0	3.0	6.1	33.6	41.8	51.4	1.5
Housefurnishings	—3.6	—1.2	10.9	31.3	75.5	103.8	3.4
Miscellaneous	0.0	7.2	12.4	35.9	61.4	73.1	5.3
All items	—0.2	5.1	12.1	43.1	72.7	93.5	5.8

moved steadily downward; and food price movements paralleled those of the index of all commodities. The fluctuations from month to month in each component group were noticeably small.

Table V.—Consumers' Price Index (Cost of Living), by Major Commodity Groups, United States

Year and month	Per cent change Sept. 1952 from						
	Jan. 1952=100	All items	Food	Apparel	Rent	Fuel, electricity and ice	House-furnishings and miscellaneous
1951							
September	98.7	97.8	102.2	98.4	99.6	101.0	97.9
October	99.1	98.6	102.1	98.9	99.7	100.6	98.2
November	99.7	99.6	101.5	99.4	99.9	100.8	99.3
December	100.0	99.9	101.1	99.6	99.9	100.5	99.7
1952							
January	100.0	100.0	100.0	100.0	100.0	100.0	100.0
February	99.4	97.9	99.9	100.4	100.2	99.8	100.4
March	99.4	97.9	99.5	100.6	100.2	99.3	100.6
April	99.8	99.0	99.1	100.8	100.2	98.6	100.9
May	99.9	99.3	98.9	101.1	99.7	98.2	101.1
June	100.3	99.6	98.7	101.4	99.9	97.8	101.7
July	100.9	101.1	98.4	101.6	101.0	97.7	102.0
August	101.1	101.3	98.3	101.9	101.6	97.7	102.1
September	100.9	100.3	98.9	101.9	101.8	98.0	102.5
October	101.0	100.0	98.8	102.4	102.3	97.8	102.8

In the chart on page 579 monthly changes in the wholesale and retail price indexes are indicated.

The tendency toward balance between supply and demand which had been evidenced late in 1951 by the stability of wholesale prices continued throughout 1952. The continued rise in consumers' prices in 1951 also came to a halt at the beginning of the year. The comprehensive system of anti-inflationary controls inaugurated during 1951 were partially responsible for stabilization. Prices continued to be controlled by the Office of Price Stabilization which imposed ceilings on most products. Some upward revisions in price ceilings were made during the year to eliminate inequities in the price structure and to compensate businesses for increased wage costs when upward adjustments of wage rates were granted by the Wage Stabilization board. The latter attempted to eliminate wage inequities by permitting wage increases to compensate for increases in the cost of living and for improvements in productivity.

However, many commodities sold at prices below price ceilings, and ceilings were removed from some commodities, notably men's apparel, at the end of the summer. Credit restrictions on the purchase of consumers' durable goods were removed and those on housing were modified during the year, although banks and other lending institutions continued voluntarily to restrain the extension of credit. These tendencies toward modification and elimination of controls largely reflected the very high level

Table III.—Wholesale Price Index, by Major Commodity Groups, United States

(Jan. 1952=100)

Year and month	All commodities	Form products	Processed foods	Textile products and apparel	Hides, skins and leather products	Fuel, power and light	Chemicals	Rubber and rubber products	Lumber and wood products	Pulp and paper products	Metals and metal products	Machinery and motive products	Furniture and household durables	Nonmetallic minerals	Tobacco beverages	Miscellaneous
1952																
Jan.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Feb.	99.6	98.0	99.5	98.8	97.4	99.8	99.2	99.3	100.2	100.1	100.2	101.0	100.1	100.0	100.0	100.3
March	99.4	98.4	99.2	96.4	95.9	100.0	98.7	98.5	100.3	99.6	100.2	100.8	99.6	100.0	100.0	98.3
April	98.9	98.8	98.1	96.7	92.1	99.0	98.2	97.6	100.7	99.3	100.1	100.7	99.8	99.9	100.0	98.6
May	98.8	98.1	98.6	96.1	92.7	98.7	97.8	97.4	100.5	98.9	99.5	100.7	99.5	100.0	100.0	97.6
June	98.4	97.5	98.5	95.8	93.8	98.6	97.8	92.6	99.8	98.7	98.9	100.4	99.4	100.8	100.0	97.3
July	98.9	100.2	99.9	95.7	94.1	98.7	97.7	90.2	100.1	97.5	99.6	100.5	99.4	100.8	100.0	95.0
Aug.	99.2	99.9	100.4	96.0	94.4	98.2	97.5	89.0	100.2	97.8	101.1	100.5	99.4	100.8	100.0	98.0
Sept.	98.9	96.7	100.4	96.3	94.4	98.8	97.5	87.6	100.2	97.9	101.7	100.5	99.6	100.8	100.0	108.3
Oct.	98.4	95.4	98.5	96.0	94.5	99.8	97.4	87.4	100.2	97.7	101.6	100.6	99.8	101.3	110.8	...

of production in the economy. Despite the continued high rates of spending by individuals, businesses and government, inflationary competition for commodities was either controlled or absent.

During the year the national output, national income, personal savings and personal expenditures all appeared likely to attain new record levels. Increased governmental expenditures for the prosecution of the war in Korea, for the defense mobilization program and for the Mutual Aid program while the nation maintained at least the same level of civilian consumption at home provided ample testimony of the efficiency of production and the effectiveness of the direct and indirect anti-inflationary measures which had permitted these accomplishments with but moderate changes in prices. (W. V. Wi.)

Great Britain.—Commodity Prices.—Textile materials were firm in price at the end of 1951 after the collapse from the inflated figures recorded early in that year. There were price falls combined with considerable fluctuation in the early part of 1952, followed by more variable movements. Wool prices improved around midyear; since there was no accumulation of stocks in the hands of producers and manufacturers, and since there was a substantial balance between world consumption and production, any recovery in consumption had a direct effect on prices. Cotton prices were high in the winter of 1951–52, partly because of low estimates of the U.S. crop, and the reduced demand for cotton goods led to a fall which was not halted until after mid-1952. There were particularly large reductions in prices of sisal and jute in the middle months of 1952, though the prospects then improved. Late in the year, prices of textile materials were still generally at or below the levels ruling before the Korean war.

The long and almost continuous rise in prices of nonferrous metals (except tin) was halted early in 1952. Rearmament demands were largely concentrated on copper which remained scarce and firm in price. Supplies of lead and zinc were more than adequate and both prices were reduced rapidly. Controls over the uses of zinc, in force since Dec. 1950, were ended in Aug. 1952 and private trading in lead was resumed in October.

After a low point late in 1951, the price of tin recovered early in 1952 on the conclusion of a materials agreement between the U.K. and U.S. governments. Subsequent fluctuations were around a steady level of about £970 per ton, compared with £600 per ton before the start of the war in Korea. Rubber prices, which reached highly inflated figures early in 1951, declined with only minor oscillations until in Sept. 1952 they fell to the level, around 2s. per pound, ruling before the Korean war. The main influences were U.S. policy on stock-piling and on synthetic production, expansion of output in Indonesia and a potential excess of world supply over demand.

Prices of commodities produced within the sterling area, particularly rubber, cocoa and jute, were both declining and fluctuating in 1952 to a greater extent than other commodities purchased by the sterling area from the rest of the world. This was a contributing factor in the 1952 crisis in the balance of payments of the area.

Import and Export Prices.—The prices paid by the U.K. for deliveries of imported produce were still high early in 1952 but then declined during the year. Imported raw materials fell in price first, followed later in the year by prices of imported foodstuffs and manufactures. The level of prices of U.K. exports, though well above that of 1951, remained generally stable during 1952. The weakness of textile prices was almost offset by firm prices of exports of the metal-using and engineering industries. The improvement in the terms of trade during 1952 was, therefore, the result of lower import prices rather than higher prices of exports.

Table VI.—Import, Export, Wholesale and Retail Prices, United Kingdom

	1951 June	Feb. Average 1950=100	1952 May Average 1950=100	Aug.
Imports and exports*				
Imports				
Food, drink and tobacco	117	120	123	121
Raw materials	158	147	137	127
Manufactures	130	135	134	129
Total	136	134	131	124½
Exports	115	122	122	121
Terms of trade†	118	110	107½	103
Wholesale prices‡		June 1950=100		
Food and tobacco	111	121½	125	129
Materials, nonfood manufacturing	152	140	128	124
Output of industry				
General chemicals	114	124	125	125
Domestic hollowware	111	127	131	132
Hosiery	139	114½	106	101½
Ready-to-wear clothing	118	117	110	107
Retail prices§		June 1947=100		
Food	133	146	152½	156
Household durable goods	137	140	139	137
Clothing	142	150	149½	145
All items	125	133	135	137
Wage rates: Men|| . . . . .	118	127	128	129

*Average values computed from annual data, extrapolated into 1952 by use of index numbers of import and export prices (board of trade). †Ratio of average values of imports to average values of exports; a rise indicates an adverse movement, a fall a favourable movement. ‡Board of trade: food and tobacco old series (base 1930); others, new series (base June 1949). §Ministry of labour interim index. Groups, level for Jan. 1952 as calculated by R. G. D. Allen, "Index Numbers of Retail Prices 1938–51," *Applied Statistics*, vol. 1, no. 2 (London, 1952), carried back to June 1951 by interim index (June 1947=100) and carried forward by interim index (Jan. 1952=100). ||Ministry of labour index of weekly wage rates.

Wholesale and Retail Prices.—Materials used by the manufacturing industry in general fell by nearly 20% from the peak of March 1951 to the beginning of 1952 and then by a further 10% in the first half of 1952. There was greater stability in the middle of the year, but the decline in commodity prices had not then worked itself out and there were further falls in wholesale prices of materials later in the year. Cuts in food subsidies, and consequent increases in food prices, were announced in the budget of March 1952, but they were spread over a period of several months. The rise in food prices, both at wholesale and at retail levels, was more than 10% during 1952. On the other hand, prices of clothing and household furnishings were marked down, particularly around midyear, in response to slack demand and accumulated stocks. Other wholesale and retail prices, particularly of goods produced by the metal-using industries, were generally somewhat higher in 1952.

The increase in the all-items index of retail prices during 1952 was mainly the result of higher food prices; it was at a slower pace, compared with the rapid rise in 1951. There was some seasonal decline in the late summer before the upward movement was resumed. The increase in wage rates, though not in earnings, continued to be rather less than that in retail prices.

European and Commonwealth Countries.—In most European countries dependent on imports the domestic price level was influenced directly and indirectly by the decline in world commodity prices in 1952. In addition there were several countries which adopted vigorous deflationary policies with some success. In the Netherlands, for example, wholesale prices rose rapidly until the second quarter of 1951 but a year later they were 5% lower and falling. In Norway and Sweden, however, the rise in wholesale prices continued into 1952. By the middle of 1952 wholesale prices in countries little affected by devaluation (Switzerland and Italy in particular) were at much the same levels as in 1948 and somewhat above the mid-1950 figures. In most other countries, under the influence of devaluation and rearmament, wholesale prices had settled at 40% to 50% higher than in 1948.

In Australia, New Zealand and the Union of South Africa, the course of domestic prices was dominated by prices of imported manufactures rather than those of basic commodities. Inflationary pressures were particularly strong in Australia. In con-

Table VII.—Cost-of-Living Index Numbers, U.K., U.S. and Certain European and Commonwealth Countries

	(Average 1948=100)				
	Mid 1950*	June 1951	Dec.	March 1952	June
United Kingdom	106	116	120	123	128
United States	100	108	110	109	110
Europe					
Belgium	94	106	107	107	105
Denmark†	106	120	122	122	
France (Paris)‡	111	129	143	148	143
Germany§	92	103	105	106	105
Ireland	101	110	114	115	116
Italy	100	111	112	113	
Netherlands‡	108	121	119	120	
Norway	105	124	127	130	
Sweden	103	120	125	127	131
Switzerland	97	102	105	105	105
Commonwealth					
Australia¶	120	142	158	162	171
Canada	108	119	123	122	121
Ceylon (Colombo)	105	109	111	108	107
India (Bombay)	105	111	109	103	
New Zealand¶	107	118	125	126	
Pakistan (Karachi)	93	99	101	98	
Southern Rhodesia	114	121	125	131	133
South Africa	108	116	121	123	

*Generally July. †July, Jan. and April instead of June, Dec. and March. ‡1949=100. §Bizone, July-December 1948=100. ¶May, November and February instead of June, December and March. ¶Quarters ending in month shown.
Source: United Nations, "Monthly Bulletin of Statistics."

trast, the measures of deflation introduced by India were very successful; wholesale prices fell by 20% in the year after May 1951 to a level about the same as in 1948. (See also AGRICULTURE; BANKING; BUILDING AND CONSTRUCTION INDUSTRY; BUSINESS REVIEW; CONSUMER CREDIT; INCOME AND PRODUCT, U.S.; LAW; STOCKS AND BONDS; WAGES AND HOURS; and articles on individual commodities.) (R. G. D. A.)

Price Stabilization, Office of. The economic situation of the United States during 1952 was characterized by continued inflationary pressures in many industrial areas connected with the defense program (e.g., metals, machinery and certain chemicals) as well as in many segments of the food industry. During the summer, the cost of living reached new all-time peaks when increases in food, transportation, medical care and rent offset some decreases in apparel and house furnishings.

These developments together with (1) the increasing share of industrial capacity and man power devoted to defense, (2) the deficit position of the national budget, and (3) the uncertain international economy were cited frequently as illustrating the need for continued price controls. On the other hand, price relationships in the economy late in 1952 were again at approximately their pre-Korean war balance although at a 12% higher level. Prices of many nondefense items were softer than they had been for several months. Therefore, the activities of the Office of Price Stabilization centred mainly around development and refinement of standards and techniques to afford price relief where desirable and to remove price controls where absence of price pressures rendered such action appropriate.

In June 1952 congress, assuming a decreasing need for direct controls, extended the Defense Production act, Titles IV and VII of which constitute the statutory authority for price control, only until April 30, 1953. At the same time congress further curtailed the powers, scope and budget of the agency.

Meanwhile, OPS had developed and refined four standards for price relief based, respectively, on industry earnings, defense essentiality, product or product line and individual seller. Applicants had the greatest recourse to the industry earnings standard. This standard permitted increases in ceiling prices to enable each industry to earn at least 85% of its average earnings in the best three of the four years 1946-49, adjusted for net worth increase since then.

These standards, formulated to meet the legal requirement that price ceilings be "generally fair and equitable," were breached in mid-1952 as a result of a decision by the Office of

Defense Mobilization that defense production required steel price increases in excess of the standards regardless of their effect on price stabilization. Price increases thus granted on steel and on imported copper (necessary to maintain the Chilean supply) and aluminum (the last under the OPS essentiality standard) were allowed to be passed through by subsequent fabricators of these metals.

Despite the fact that food, for which average U.S. families spend more than one-third of their budgets, continued to rise during the year, legal authority for food price control was further reduced in June 1952. This was accomplished by congressional exemption of fresh and processed fruits and vegetables and further limitations on meat slaughter control, in addition to continuation of parity and other legal minimum price requirements. However, in October, OPS began large-scale community pricing of dry grocery products and required posting of dollar-and-cent ceiling prices in all retail food outlets in many marketing areas.

In April 1952 OPS began to suspend price controls on commodities selling substantially below ceilings. By October the suspended list included raw cotton, wool and synthetic fibres, their yarns, fabrics and staple household products; hides, leather and shoes; burlap; certain fats and vegetable oils; bulk and bottled whiskeys, wines and spirits; sofa beds and bedding, and cotton linter upholstery material; radio, phonograph and television sets; and soft surface floor coverings. Provision was made for reinstituting controls if inflationary pressure developed.

In Feb. 1952 Ellis G. Arnall succeeded Michael V. DiSalle as director of price stabilization, and, in September, Arnall was succeeded by Tighe E. Woods. (T. E. Ws.)

Priest, Ivy Maude Baker (1905—), United States government official, was born on Sept. 7 in Kimberley, Utah. After her graduation from high school in Bingham Canyon, Utah, she took courses at the University of Utah, and later was employed as a telephone operator and in various department stores. She also taught evening classes in American history and citizenship. She and her husband, Roy F. Priest, whom she married in 1935, have three children.

Her work in party politics began with the Young Republican organization in 1932. She was president of the Utah State Young Republican organization (1934-36), director of the Young Republican Western States organization (1936-40), president of the Utah State Women's Legislative council (1937-39), and became a member of the Republican national committee for Utah in 1944. In Sept. 1950 she became the national committeewoman of the Republican party. She succeeded Mrs. Gilford Mayes as assistant in charge of the women's division of the Republican national committee on Aug. 15, 1952.

On Nov. 25 she was selected by President-elect Dwight D. Eisenhower to serve as treasurer of the U.S.

Primary Education: see EDUCATION.

Prince Edward Island. Smallest province of Canada, 2,184 sq.mi., Prince Edward Island lies in the Gulf of St. Lawrence. Pop.: (1951) 98,429. Capital: Charlottetown, pop. (1951) 15,689.

History.—No major new legislation was considered by the legislature which met on March 11, 1952. A committee of the legislature was set up to consider electoral reform (i.e., whether representation by both councillors and assemblymen should be continued) but by Oct. 31 the committee had not made public its report. Total provincial production from all sources for the

fiscal year ending March 31, 1952, totalled \$65,000,000.

Finance.—There was a provincial surplus of \$219,724 on ordinary account at the year ending March 31, 1951, on current revenue amounting to \$7,000,000. Capital expenditures were \$2,400,000 for the year, with an increase in over-all liabilities of \$1,300,000.

Agriculture.—Total agricultural production for 1951 was worth \$26,800,000, or \$5,000,000 greater than in 1950. There were record returns of potatoes, which rose in price to as much as \$5 per bushel. The 6,000,000 bu. harvested from 31,000 ac. resulted in an export of 6,000 carloads which returned \$15,000,000. The government-approved hatcheries hatched and sold a record high of 873,517 chicks in 1951, which was 52% more than in 1950. Butter production in 1951 was 5,000,000 lb., cheese production 877,000 lb.

Fisheries.—The total value of the catch in 1951 was \$3,212,629, of which lobsters accounted for \$2,227,234. The total weight of the 1951 harvest was 33,000,000 lb. The lobster catch weighed 8,342,000 lb., herring 6,250,000 lb., cod 4,400,000 lb., hake 2,500,000 lb., mackerel 1,500,000 lb. The 1951 oyster crop fell off by 50% compared with the 1950 crop.

Forestry.—The output of sawn lumber was 25% higher in 1951 than in 1950. There were 83 mills in operation producing 11,000,000 bd.ft. worth \$632,000, compared with 85 mills producing 9,800,000 bd.ft. valued at \$506,000 in 1950. Returns from island-grown pulpwood amounted to \$2,000,000 in 1951.

Industry.—The 1951 index of employment stood at 176.8, and in July 1952 it reached 196.5 (1939=100). Average weekly earnings in 1939 were \$19.79, compared with \$37.52 for 1951 and \$40.32 for July 1952. (C. Cy.)

Principe: see PORTUGUESE OVERSEAS TERRITORIES.

Printing. The most important developments in the graphic arts in the United States during 1952 were directed at making it possible to achieve faster production in greater volume to reduce manufacturing costs. High-quality colour printing at a fraction of the usual cost was claimed to be possible with a new system of offset lithography developed at the research laboratories of the Eastman Kodak company, Rochester, N.Y. It was believed that the colour printing system, designed especially for short press runs of from 1,000 to 5,000 copies, might bring full-colour illustrations into many publications in scientific, medical and similar fields where colour had formerly been ruled out by high costs. The process departs from conventional offset colour printing methods in a number of ways: (1) printing is done in three colours with special inks; (2) the process is based upon the use of 35-mm. Kodachrome slides; (3) colour correction is achieved photographically without handwork; (4) printing is done with 266-line halftones, while commercial printing is done largely with 120- or 133-line halftones; (5) most of the colour illustrations are printed on a simplified small offset press but the techniques may be applied to larger press operation; (6) printing is done with an aluminum support grainless cellulose acetate plate; (7) all registration with exception of a final small adjustment on the press is achieved automatically by purely mechanical means.

During the year, the minor revolution in what is called "automatic typesetting" in graphic arts publication work continued by installation of Teletypesetter equipment (Teletypesetter corporation, Chicago, Ill.) in daily newspapers and a number of weekly news magazines. Coincidental with this movement, the remote transmission of press association news matter (the Associated Press, New York, N.Y.) from a central sending point to publishing plants was greatly accelerated. This development occurred mostly among medium-size daily newspapers. The service is virtually automatic with respect to Teletypesetter tape punching at the receiving point. National news is transmitted from a single sending source via wire to receiving evening and morning newspapers. For evening papers, transmission is between 1 A.M. and 8 A.M. Sending hours for morning newspapers are adjusted accordingly. All newspapers receiving the service have standardized column width of 12 picas with line-casting machine matrices punched on the unit system for universal justification. A printed monitor copy is transmitted to each paper simultaneously for editing purposes. After the edited tape has been spliced, it is placed in the line-casting machine keyboard

operating unit for automatic operation of the machine to produce the slugs. With automatic operation of the high-speed machines (from 9 to 12 lines per minute), it is possible to cast an average of 375 slug lines per hour throughout the working day.

Development of a lightweight laminated curved plate for letterpress magazine printing was announced by Time, Inc.'s research laboratories at Springdale, Conn. The laminated plate consists of an aluminum backup, or saddle, to which the electrotype is bonded with a thermosetting adhesive. The plate is approximately two and one-half times lighter than the conventional lead-backed electrotype. Breakage of plates on the press is eliminated as a result of the reduction of the effect of centrifugal force in the high-speed rotary printing operation plus the new manner of holding the plates on the press cylinder under tension by means of movable clips which engage slots milled into the underside of the plate. Also demonstrated was the new Lithure bimetal offset printing plate which consists of a sheet of chrome-plated copper. In processing, the platemaker etches through the chrome to bare the copper printing surface. It is the copper that prints the image. In principle, this is an intaglio printing plate, the copper being grease (ink) receptive but moisture repellent while the chrome nonprinting areas are water receptive but grease repellent.

A bimetal photoengraving plate was developed and put into daily use. The plate itself consists of magnesium with an electrolytically deposited zinc coating 0.0005 in. thick, the total thickness of the plate being the same as standard 16-gauge stock (0.065 in.). The purpose in developing the plate is to permit handling of the magnesium plate during the etching operation in a manner similar to zinc. Savings in plate production time range from 30% to 50%. Mechanical routing of line plates is eliminated because of the etching depth of 0.040 in. An 85-line halftone screen may be used with faithful reproduction through the stereotype plate. It was claimed that type matter reproduces excellently because of clean etching properties of the magnesium plate. (M. St.)

Prisoners of War. Throughout 1952 prisoners of war were the crux in armistice debates in Korea: the Chinese and North Korean Communists insisting that, fol-

HAULING COMMUNIST BANNERS out of a P.O.W. compound on the island of Koje. U.N. troops and tanks were sent into four of the compounds, June 4-5, 1952, to end the virtual rebellion which reigned after prison commander Gen. Francis T. Dodd was seized and held hostage for 78 hr. in May



lowing an armistice, all prisoners of war should be repatriated, regardless of their individual wishes, and the United Nations command refusing to admit of compulsory repatriation; the U.N. command proposed that the International Committee of the Red Cross interview each prisoner with regard to his choice.

This proposal having been rejected by the Communists, the U.N. command proceeded to conduct an inquiry of its own in the prison camps with the resulting announcement that of the 132,000 prisoners held by the U.N. command, all but approximately 70,000 would forcibly resist return to Communist control.

This announcement brought to a head a series of conflicts in the camps between Communists and non-Communists and between the prisoners and their guards, culminating on May 7 in the forcible seizure by Communist prisoners of Brig. Gen. Francis T. Dodd, United Nations commander of Kojé Island prison camps.

After General Dodd's release was obtained, U.N. command authorities proceeded to break up the larger camps and compounds and to separate Communist and non-Communist prisoners. In effecting this, over resistance by the Communists, and in subsequent revolts, more than 100 prisoners and guards were killed.

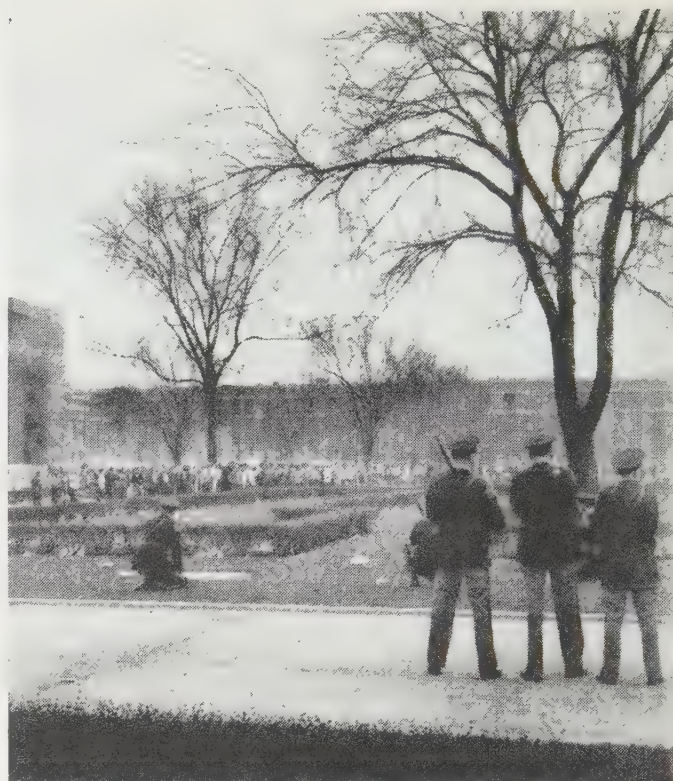
The International Committee of the Red Cross continued its camp inspections in South Korea but was not permitted entry into North Korea, despite appeals to the North Korean government by the 18th International Red Cross conference meeting in Toronto, Can., July 26-August 7. No additional names of prisoners held by the North Koreans were received by the I.C.R.C. during 1952.

The *ad hoc* Commission on Prisoners of War established by the United Nations general assembly on Dec. 14, 1950, to facilitate the repatriation of prisoners captured during World War II, held its first session in Geneva, Switz., in Jan. 1952. Prior to this meeting, the U.S. government informed the Soviet government of its intention to participate and urged the Soviet government to do likewise; the Soviet government refused.

During the meetings of the commission in Geneva, it received evidence from the governments of Japan, western Germany and Italy that more than 1,000,000 nationals of those countries were still missing in the Soviet Union and China. Its appeals to the Soviet and Chinese governments for information concerning these missing persons went without response and at a second session of the commission in Geneva, August-September, Justice J. G. Guerrero (El Salvador), chairman, was forced to conclude that without the co-operation of the Soviet and Chinese governments, the work of the commission was paralyzed. (See also RED CROSS.)

(H. W. DG.)

Prisons. During the year 1952 public interest in prisons was focused chiefly on the series of riots and disturbances which took place in several state prisons and reformatories. Within a period of four months, between April and July, 12 prisons in eight states of the United States and in Canada were the scenes of serious and costly uprisings. Of these, the two most serious disturbances occurred in the New Jersey state prison at Trenton, one of the oldest prisons in the country, and in the State Prison of Southern Michigan at Jackson, the largest prison in the country. Although the immediate conditions which precipitated each of these incidents varied widely, they did serve to arouse some public concern regarding the many basic inadequacies of prison programs and plants throughout the country. Among the many problems which state prison administrators had to cope with were the sharply increasing costs of detention, inadequate and poorly trained personnel, a lack of professional services of various kinds, idleness and the absence of constructive employment for prisoners, and old, obsolete physical plants.



STATE TROOPERS holding prisoners at bay during a riot in the State Prison of Southern Michigan at Jackson, in April 1952.

Of the state prisons, 23 were from 70 to more than 100 years old and only 17 were less than 50 years old.

At the close of 1952 there were in the United States 152 state correctional institutions for adults which included 68 prisons or penitentiaries, 26 reformatories for men, 25 reformatories for women, 22 farm institutions, 11 special institutions including 3 hospitals for the criminal insane and 4 institutions for defective delinquents. This number of state institutions was exclusive of the federal prison system, which comprised six penitentiaries, three reformatories for men and one for women, a medical centre, a detention facility, eight correctional institutions, three camps, a training school and a forestry camp for boys.

The prison population at the end of 1951 numbered 164,896 in state and federal prisons and reformatories. This represented a decrease of 2,277 from the number confined in these institutions at the end of 1950. Data on the prison population of the United States during the period 1940-51 as shown in the table indicated a trend toward handling the offender in the community and toward an increasing use of parole as a method of release. Paroles represented 36% of all releases in 1940 as compared with 45% in 1950.

Despite slow progress, some notable changes in prison systems in the United States had taken place. During the year, prison reform was an important public and political issue in Louisiana,

*Sentenced Inmates of United States Prisons and Reformatories**

(Dec. 31 of each year)

Year	Federal institutions	State institutions	Total	Rate per 100,000 population
1951	17,395	147,501	164,896	109.2
1950	17,069	150,104	167,173	110.9
1949	16,808	148,319	165,127	111.9
1948	16,307	140,847	157,154	108.3
1947	17,146	135,149	152,295	106.3
1946	17,622	123,620	141,242	102.1
1945	18,638	116,031	134,669	105.6
1944	18,139	115,930	134,069	105.9
1943	16,113	122,385	138,498	108.7
1942	16,623	136,080	152,703	116.7
1941	18,465	148,190	166,655	126.7
1940	19,260	155,971	175,231	133.1

*Figures represent sentenced prisoners in state and federal prisons and reformatories for adult offenders. Rates calculated on basis of estimated civilian population.

Delaware, Kentucky, Maryland, Minnesota and to a lesser extent in several other states. In Massachusetts the Charlestown prison, built in 1805, was replaced by a new institution, and in New Jersey legislation to provide a new institution to replace the Trenton prison built in 1836 was given considerable public support. (See also CRIME.)

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Prizes of 1952: see ANTHROPOLOGY; LITERARY PRIZES; NOBEL PRIZES; PULITZER PRIZES. See also AMERICAN LIBRARY ASSOCIATION; ART EXHIBITIONS; MINERALOGY; MOTION PICTURES; ROMAN CATHOLIC CHURCH; SOCIETIES AND ASSOCIATIONS, U.S.; THEATRE; etc.

Production, Industrial: see BUSINESS REVIEW.

Profits, Company: see BUSINESS REVIEW; TAXATION.

Protestant Episcopal Church. According to statistics published in the *Living Church Annual, 1952*, this church started the year with 2,643,488 baptized members; 1,712,070 communicants; 6,805 clergy; 6,447 lay readers; 62,877 church school teachers with 543,167 pupils; 566 candidates for orders; and 1,210 postulants (those listed by the bishops as desiring ordination). During the previous year there had been 109,289 baptisms (19,341 of them adult), 88,727 confirmations, 30,426 marriages, and 54,316 burials. Ordinations to the diaconate had numbered 287; to the priesthood, 276.

The shortage of clergy originating in World War II was still being felt. Heavy enrolments in all seminaries and the recent organization of a new institution, the Episcopal Theological Seminary of the Southwest, at Austin, Tex., promised an eventual rectification of this condition.

The triennial general convention met in Boston, Mass., Sept. 6–19, 1952. Its most important act was to sanction the ordination of laymen as “perpetual” deacons, a departure from the Anglican tradition of retaining the diaconate as a preparatory grade in the professional ministry. The convention voted a record budget of \$5,929,042 for the following three years, and approved a conference of Anglicans from all over the world to meet in Minneapolis, Minn., in 1954. It rejected a proposal to substitute an investment trust for the existing church pension fund, which operated under the strict insurance laws of New York state.

The admission of women to the house of deputies, proposed at several recent general conventions, was again defeated. A resolution for the establishment of a permanent committee on

the interpretation of the canons, passed by the house of deputies, was rejected by the house of bishops.

The woman's auxiliary, meeting at the same time as the general convention, presented a record United Thank offering of \$2,400,000.

Representatives of the Protestant Episcopal Church participated in the third World Conference on Faith and Order in Lund, Swed., Aug. 15–28. (See also CHURCH MEMBERSHIP.)

(W. W. Ms.)

Protons: see PHYSICS.

Prunes: see FRUIT.

Psychiatry. In child psychiatry the most striking advance in 1952 was the contribution to the understanding of human behaviour gained through the study of the child from infancy to the age of two years. At this preverbal level are seen many primitive and archaic patterns of thought previously observed in primitive man and in schizophrenics. This study increased the knowledge of childhood emotional problems, mental illness and the relation of both to the history of the race.

An outgrowth of this was the rapid development during the year of a psychotherapeutic technique for the treatment of schizophrenics, first instituted a few years earlier by Rosen. In this treatment an attempt is made to help the patient by communicating with him on his own level. In other words, the psychiatrist attempts to divine the true meaning behind the weird behaviour, the jumbled and bizarre speech and gestures, and to communicate to the patient in his own language such understanding, aid and comfort as is possible. The schizophrenic, in his regressive attempts at self-expression, makes liberal use of symbols, commonly used by primitive peoples and largely forgotten by civilized man.

Psychiatrists were viewing the progress of this technique with great interest. There were many failures to cure, and a few striking successes. It was still far too early properly to evaluate its place in the field of treatment.

In the realm of the so-called drastic therapies, the use of carbon dioxide inhalations for the treatment of neurotic manifestations was placed on a much firmer footing, and its indications and contraindications were better established. The treatment consists in allowing the patient to inhale CO₂ until the point of unconsciousness is reached. The administration is then stopped, following which consciousness is rapidly regained. This treatment is repeated three or four times weekly. For

STILLS from *Grief, a Peril in Infancy*, filmed by Dr. René A. Spitz to show the damage to a child's physical and mental health, even in a well-run foundling home, when the child had only “one-tenth of a mother.” Left: foundling during a three-month absence from its mother; right: after mother and child were reunited. The film was shown to psychiatrists and general physicians of the New York Academy of Medicine, New York city, in 1952



reasons not wholly understood, it seems to have a strongly beneficial effect in allaying anxiety. This not only makes the emotionally ill patient much more comfortable, but often enables him to compose himself sufficiently so that in talks with the psychiatrist he is able to come to a much better understanding of himself and a reasonably satisfactory solution of his problems. This treatment apparently achieved dramatic results with stutterers and persons suffering from allied speech defects. There again, however, the test of time was needed before the permanent place of CO₂ in psychiatric therapy could be properly fixed.

In the treatment of alcoholics, psychotherapy was still the method of choice. Antabuse as a method of treatment failed to live up to expectations, though it was still considered to have some limited usefulness. The biggest drawback was that most alcoholics reached a point at which their desire to drink was so strong that they refused to continue the medication. Toxic reactions frequently occurred, often of considerable severity. Psychotic episodes as a concomitant of Antabuse therapy had not been infrequent.

Cortisone and ACTH were used experimentally on the mentally ill. While it was known that they have varying effects on mental functioning, they were not particularly helpful in therapy. However, data were still being accumulated.

The investigations of certain psychoanalysts during the year, notably Otto Lowenstein and Mariann Kris, contributed greatly to the understanding of ego-psychology. By the use of the term "ego" is meant that functional part of the mind which is concerned with testing and dealing with reality. What is referred to as "common sense," for instance, is one of the functions of the ego. It was found that this begins to develop much earlier in childhood than was formerly suspected. It was hoped that the increase in understanding of the development and functions of the ego would lead to the more effective handling of such manifestations as criminal tendencies in adults, child delinquents, behaviour disorders and the like, which are all characterized by a generally uneven and insecure ego formation. (See also *PSYCHOLOGY*; *PSYCHOSOMATIC MEDICINE*.)

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Psychology. Psychology in 1952 continued to advance in both its professional and scientific aspects. For professional psychology one of the most significant events in many years occurred when members of the American Psychological association, meeting in Washington, D.C., in September, adopted a code of ethics for psychologists. The principles covered the areas of public responsibility, relationships with clients, teaching, research, writing and publishing, and professional relationships, with primary emphasis throughout on the philosophy that the worth of a profession is determined by the value of its contribution to the welfare of man. The code was adopted for a three-year trial period after which its permanent acceptance would be voted on by all members of the association.

In his book *The Study of Instinct*, N. Tinbergen gave impetus to the current revival of interest in the study of innate behaviour. Describing the results of naturalistic observations as well as controlled experiments, he presented evidence for a process called the "innate releasing mechanism." This process is used to explain the fact that animals seem to react not just on the basis of what their sense organs can receive, but in terms of so-called sign stimuli. They respond primarily to limited aspects of their environments, and what is responded to depends upon the particular species of animal. For instance, a territory-holding male robin will attack a tuft of red feathers but not a

complete, mounted young robin with all the characteristics of a robin except the red breast. In other words, it is the red colour that seems to "release" the threatening behaviour. Many examples from other species were also given. Tinbergen emphasized the importance of doing research on the behaviour patterns of animals of many different species and of using objective methods to study them. He also maintained that the research techniques employed should be adapted to the species under observation, for the differences in behaviour are often so great that use of only a small number of standard techniques will not reveal the true range, complexity and potentialities of animal and human behaviour. Although more concerned with behaviour classified as innate, Tinbergen touched upon the modifications that may take place through learning, and argued that a thorough analysis of innate behaviour is necessary for an understanding of the process of learning. He also pointed out that detailed study of the similarities and differences of behaviour patterns among many species of animals may supplement the science of morphology and lead to a better understanding of the evolutionary process.

F. Ross Ashby's *Design for a Brain* contained the principles underlying the construction of the homeostat, an apparatus into which was built many of the characteristics of a nervous system. Ashby began his work with two fundamental premises: (1) that the essence of the nervous system is its adaptability and (2) that the nervous system can be explained mechanistically. He then proceeded to work out, deductively and mathematically, the properties of an adaptive system, and concluded that such a system must have a large number of variables acting as step-functions as well as many variables acting as part-functions. Moreover, the details of the system are arranged randomly so that they respond statistically, not individually. From these requirements resulted the basic principle upon which the machine was built—the principle of ultrastability. According to this principle, a system will maintain itself in a stable state, and when it is disturbed or disorganized, it will adjust its behaviour so as again to return to equilibrium. The homeostat can adapt itself to a variety of situations, readapt to changes in its own internal system, and shows certain activity that is very much like learning. It thus demonstrates the kind of adaptive behaviour which Ashby concluded is the essential characteristic of the nervous system. It also confirmed his hypothesis that the behaviour of the nervous system can be explained mechanistically and objectively.

There was continued interest in the role of motivation in learning and performance. Janet Taylor and K. W. Spence published the results of another of their studies on the effect of anxiety on learning. An earlier research had shown that anxious persons learned faster than nonanxious ones in a simple eyelid conditioning situation. However, further work showed that in a more complicated situation with many alternative ways of responding, the anxious subjects were inferior to the nonanxious. In a study of the effects of stress on performance, R. S. Lazarus and C. W. Eriksen found that when a group of college students was put under stress by being told that they had done poorly on an intelligence test, the variability of the group was much greater than that of a comparable group that was not under stress. The greater variability resulted from the fact that when under stress some students did much better and others much worse. In general, the students with high grade averages tended to get better scores when under stress, while the students with low academic standing decreased in performance and were more variable. D. J. Lewis was interested in studying the effects of partial reinforcement, or reward, on extinction. He had children play a game in which some of them were rewarded or "won" all the time, some were rewarded part of the time and

others were rewarded none of the time. He tested the children to see how soon the three groups would want to stop playing when they never won. He found that extinction—as measured by the time when the children decided to quit—was least in the children who had been rewarded part of the time when the game was first played, thus confirming the hypothesis that partial reinforcement results in greater resistance to extinction than either total lack of or complete reinforcement.

Jean Piaget's book *Play, Dreams and Imitation in Childhood* was a major contribution to the field of child psychology. Third in a series of books devoted to a careful analysis of the behaviour of three children from birth to early childhood, it described in detail how imitation changes from systematic to representative imitation. The book also covered children's play and how it develops, together with an analysis of the rules and structure of children's games, a critical discussion of various theories of play, and the role of unconscious symbolism in dreams and play.

The first in a series of reports on an extensive investigation of the processes and outcomes of psychotherapy was published by T. Gordon, D. L. Grummon, C. R. Rogers and J. Seeman. Limited to psychotherapy done by the client-centred method, the report gave the purpose and development of the research program, outlined the methodology and presented the findings on one complete case. In this research the clients were given personality tests before, during and after therapy. A control group, similar in as many respects as possible, which did not undergo therapy was also tested in order to learn whether personality changes attributed to therapy might be merely the result of the passage of time. The thorough presentation of the one case showed, among other results, that many important changes had taken place. On the Thematic Apperception test there was change in the direction of greater integration, self-confidence and admittance of aspects of experience to awareness. Emotional maturity, as rated by the client, friends of the client and the therapist, was increased. The perceived self of the client became more like the perceived self-ideal, more assured, uninhibited, self-directed and expressive. While admittedly incomplete and still in its early exploratory stages, the study was of significance in being one of the first to undertake the difficult task of analyzing the subtle and intricate processes that make up psychotherapy. (See also PSYCHIATRY; PSYCHOSOMATIC MEDICINE.)

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Psychosomatic Medicine. Lincoln D. Clark, Walter Bauer and Stanley Cobb reported in 1952 a detailed study of ten patients with severe arthritis who presented evidence of a mental disorder in connection with the administration of cortisone and ACTH. In none was there a previous history of a major mental illness and no other drugs had been used to which a "toxic mental state" might be attributed. Moderately large doses of ACTH had been used prior to the onset of mental symptoms but there did not seem to be a correlation between the severity or the duration of the psychosis and the total or average daily dose of ACTH, nor was there any correlation between the rapidity or extent of the response to the drug and the occurrence of a psychotic complication. The investigators did not regard it as a form of toxic deli-

rium, nor were they able to draw any positive conclusions about the cause of the disturbance from their laboratory studies. Some of the early symptoms were insomnia, restlessness, delusional ideas and peculiar feelings in the front of the head sometimes followed by a frank psychosis. Fortunately, complete recovery occurred spontaneously in all cases.

Howard P. Rome and Francis J. Braceland found severe mental reactions in 10% of 100 patients treated with these drugs at the Mayo clinic, and Selwyn Brody, who studied eight patients at the Mt. Sinai hospital in New York, concluded that the variety of reactions to these drugs depended upon the personality of the patient. The drugs brought out the latent emotional responses of the individual. Most patients showed some initial euphoria but this gave way to various reactions in keeping with the individual personality structure.

Pseudocyesis, a condition in which a woman firmly believes herself to be pregnant and develops many of the symptoms of pregnancy, lends itself to an evaluation of the relation between the psyche and female sex-endocrine mechanisms. Robert R. Schopbach, P. H. Fried and A. E. Rakoff reported on 27 patients with this condition who presented themselves as pregnant with the usual symptoms. The most common symptom was a menstrual disturbance but breast changes with secretion occurred in 22. In 11 there was softening of the cervix and some enlargement of the uterus. In each case the pelvic examination was normal. Hormonal studies indicated changes that were thought to be the result of primary stimulation of the anterior pituitary by psychic factors.

It has been said that this syndrome does not occur in Negroes, but in the group reported they were greatly in the majority (23 to 4). All patients were considered neurotic, six to a severe degree. The basic psychologic mechanism appeared to be a conversion of anxiety arising from conflict between: (1) strong sexual drives plus the stress of present life situations in favour of pregnancy, and (2) early teaching, experiences and folklore which had negatively conditioned them in regard to reproduction. Superficial psychotherapy often produced a complete reversal but occasionally other therapies were combined to give objective "proof" of the nonpregnant state. Effective therapy relieved the syndrome so that there was a return to normal cyclic menses and hormonal pattern, and pregnancy occurred in four of eight previously infertile women. (See also EPIDEMICS AND PUBLIC HEALTH SERVICES; PSYCHIATRY.)

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Public Assistance: see CHILD WELFARE; SOCIAL SECURITY.

Public Health Engineering. An outstanding development in 1952 was further progress leading toward the economical reclamation of fresh water from sea water by membrane and thermal processes. Extreme shortage of fresh water had long been a basic problem in many arid areas of the world. This had also become a primary concern in some semiarid areas as well, notably in southern California, because of the increasing demand on and exhaustion of ground water resources.

The basic chemistry of membrane behaviour had long been known, but the new information included the discovery of methods of preparing membranes of vastly improved quality, and the demonstration that with an applied electromotive force these

new membranes could be employed in the demineralization of brines. Wilfred E. Langelier hypothetically constructed a unit for the electrolytic demineralization of sea water by use of a series of alternate continuous flow chambers of raw sea water and manufactured fresh water, separated by resinous ion-selective membranes. The separating membranes were alternately cation-permeable and anion-permeable, so that each fresh-water chamber or cell was composed of a membrane of each type. He estimated an electric energy requirement of 30 kw.hr. per thousand gallons of fresh water produced, or approximately one-third that of the most efficient vapour compression distilling units which were being manufactured, and that capital charges, maintenance and other operating expenses would be materially less than for the competing distillation process.

Control of Arthropods and Arthropod-Borne Diseases.—

The resistance of flies and mosquitoes to DDT and other insecticides continued to increase and to extend to other arthropods of public health importance. Operational practices in control and the behaviour patterns of adult insects have great importance in resistance. Thus, residual house spraying for malaria control, directed against the few specimens of a zoophilic species of *Anopheles* which may rest in houses, seldom if ever causes significant resistance; more domesticated species may become resistant. At the other end of the scale, mosquito larvicidal measures for *Culex* and *Aedes* control, directed against total species populations, had caused great resistance against the chlorinated hydrocarbon insecticides, as in the States of California and Florida.

Globally, residual house spraying with chlorinated hydrocarbons was still the principal, effective method of malaria control, but it had lost most of its value against the house fly. Oriental sore, transmitted by sandflies, was added to the list of diseases controllable by DDT residual spray. A. Corradetti reported effective control in Italy at a cost of U.S. 25 cents per capita per year, achieved by spraying the insides of houses and stables.

Typhus in Korea was deleted from the list because of highly resistant body lice.

Fluoridation.—The water fluoridation movement continued its growth. According to F. J. Maier of the U.S. public health service, Australia, Canada, Costa Rica, England, the Netherlands, Japan, Panamá, Puerto Rico, Scotland and New Zealand had established or soon would have fluoridated public water supplies. In the U.S. the number of artificially fluoridated supplies had increased to 386 by the middle of the year, benefiting 7,500,000 people. This compared with 240 plants and 4,400,000 people at the start of 1952 and 78 plants and 1,400,000 people a year earlier. No harmful effects of any description were reported, and no industrial processes were adversely affected.

After seven years of controlled fluoridation at Grand Rapids, Mich., significant caries reductions had been observed in all age groups up to 16.

Water Analysis.—The German membrane filter for water analysis was not known in the U.S. until 1951. Rapid progress was made in 1952 in the large-scale production of these filters and in their technologic development. In bacteriologic analysis, these filters permit the concentration of small numbers of micro-organisms contained in large quantities of liquids, great reduction in the elapsed time of tests and in laboratory man-hours and facilities, and the separation of collected micro-organisms from inhibitory environments by simple manipulation. Presently developed molecular filter techniques permit the separation of an organism from its nutrient by removing the membrane from its nutrient pad and transferring it to another medium for differential identification and confirmation, as described by H. F.

Clark *et al.* and Alexander Goetz *et al.* Goetz also indicated certain advantages of the membrane filter in the physical analysis of water. (See also ACCIDENT PREVENTION; CHILD WELFARE; EPIDEMICS AND PUBLIC HEALTH SERVICES; INDUSTRIAL HEALTH; WORLD HEALTH ORGANIZATION.)

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Public Health Services: see EPIDEMICS AND PUBLIC HEALTH SERVICES.

Public Libraries: see AMERICAN LIBRARY ASSOCIATION; LIBRARIES.

Public Relations. By 1952 it was evident that business, particularly big business, could agree to the following public relations principles (although it could not always or did not always care to practise them):

1. Every business organization (or any other social entity, for that matter) influences public opinion toward itself whether or not it is cognizant of doing so and whether or not it wishes to, simply by virtue of existing.

2. Since an organization does inevitably influence public opinion, it should do so constructively in the public interest, for in the long run business success and the public interest coincide.

3. Good public relations consists in meriting public support. To merit public support, a corporation must have a positive and progressive point of view. It must first do the right thing. Then it must continuously communicate and interpret knowledge of that accomplishment or intention to the interested or prospectively interested segments of the public with which it deals.

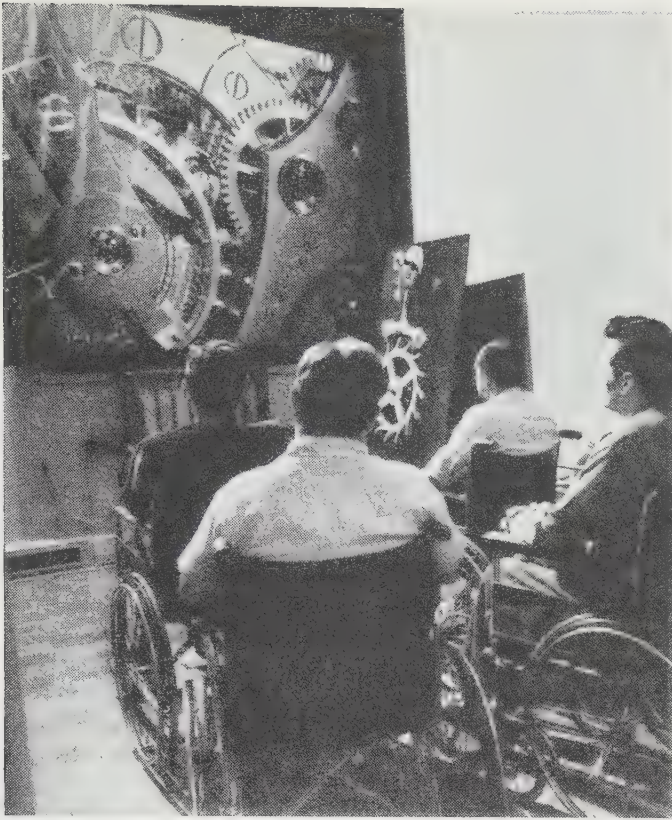
4. Public relations is an inescapable function of management and is as vital to business success as are engineering, production, sales or administration. Like these, it is an activity subject to planning and measurement.

There were during the year numerous and convincing evidences not only of these principles but also of the rise of public relations activity to professional status. Some of the significant ones may be cited.

A survey of the 312 companies in the U.S. which the American Institute of Management considered excellently managed showed that 74% had a policy-level executive in charge of public relations and that 73% had a separate department devoted to public relations. Only 38.8% of U.S. companies taken as a whole had separate public relations departments.

The survey, published in September, also disclosed that 20% of the 312 excellently managed companies employed outside public relations counsel on a year-round basis and that 17% used outside counsel on occasion.

The Public Relations Society of America reported that in five years its membership had increased from 600 to 1,400 and the 1,400 were public relations practitioners at the executive level, directing programs in 42 states and territories and 8 other countries; its chapters had increased from 6 to 24 and it had assisted in the formation of public relations associations in 9 other countries; its publication, *Public Relations Journal*, was read in every state and territory of the U.S. and in 22 other countries; a code of standards for professional practice had been developed and enforcement provisions added to the society's bylaws, with a national judicial council established and the



DISABLED U.S. veterans being trained to support themselves at a school for watch repair financed by the Bulova Watch company. This was an example of tax-exempt corporate philanthropy which was growing in 1952 as combining real benefits with good public relations values

society's 15 standing committees had pioneered new means to achieve greater professional competence.

One of the committees of the Public Relations Society of America, the commission on the social sciences, undertaking a five-year research program, had already been able to divulge some useful findings to the membership. Its chairman, Rex F. Harlow, interviewed 272 social scientists at 63 U.S. universities and contributed preliminary reports on such public relations guideposts as these:

"... facts alone are not always sufficient to win approval and desired action. The person to whom facts are presented must have a definite need for them, must be hospitable to them, before they are accepted and made use of by him. In studies made with movie audiences it was found that persons in attendance whose views were opposed to the facts simply rejected them. Others reconstructed them to fit their preconceived ideas. Only persons who were in agreement with the facts accepted them fully and willingly."

"... in supervision the 'team approach' has greater power and potentiality than the traditional 'man-to-man-approach.' That is, the total production of a properly-activated team can be made greater than the total combined production of a comparable number of individuals not operating as a team. This finding tends to disprove the old theory that supervision on the individual basis is superior to that on the group basis."

"... (in considering) the effectiveness of channels of communication, a relatively small group in our whole population seems to be exposed to virtually everything, while about five per cent of the people appear to be isolated from all channels of communication. Between these extremes the great mass of the public varies widely in its reaction to the various mass media. Among these media, the daily newspaper has the widest reach, being read by approximately 80 per cent of the population. Effectiveness of communication is measured largely by indi-

vidual and group needs and interests."

"... in a voting situation where an individual is faced with cross-pressures (such as a feeling of loyalty for one political party while at the same time desiring to vote for the candidate of another party) there is a strong tendency to delay making a decision. Under such conditions a certain number of individuals tend to lose interest in the campaign and seek to reduce their difficulty by 'escaping from the field of conflict,' in other words by not voting. Thus, a particularly tight political contest with heavy cross-pressures may actually drive voters away from instead of to the polls."

During the year it was increasingly apparent that newspaper publishers were coming to endorse modern public relations principles and practice by setting up their own public relations departments and by engaging in intraprofessional public relations competitions such as that sponsored by the Inland Daily Press association in collaboration with the William Allen White school of journalism and public information of the University of Kansas, Lawrence.

(D. O'B.)

Public Utilities. The widening influence of rate increases by public utilities in the United States upon consumer budgets had by 1952 led to new legislation in some states. In Kentucky a law drafted by the legal staff of the public service commission and supported by the Municipal league prohibited a utility from putting rate increases into effect immediately upon application to the commission. Under this law, a utility was required to wait at least five months unless the increase was approved earlier by the commission. If the commission should reach no decision within the time limit, the increase might go into effect without the posting of a bond; but such increases would be subject to later modification by the commission and consumers might sue for refunds with recovery of all costs. This eliminated the last of the states requiring the posting of a bond to assure refunds. Similarly, a Michigan statute prohibited the state commission from acting upon petitions for rate increases until all cities affected had been notified and until a report concerning the merits of such increases had been received from the technical staff. Such legislation was symptomatic of the reluctance of commissions to give speedy increases in rates as a consequence of the spreading inflation.

The delay in acting upon emergency increases in rates was creating widespread discussion in public utility circles of the menace of the "regulatory lag." In order to ease the effect of inflation upon the net earnings of public utilities, legislation was being considered which would shorten these suspension periods, require interim rate-making or reintroduce automatic regulation in the shape of service-at-cost plans. In the meantime, management was helpless in the face of inflationary pressures. As was illustrated in the case of the 25,000 employees of the Consolidated Edison system, utilities were constrained to agree to wage increases before applying for rate increases. Electric and gas utilities had sufficient margins of net income, so that they could rely upon increases in the volume of business and upon cost-reducing improvements to counteract in part these inflationary pressures. The telephone industry was less favourably situated. The transit industry in urban centres was in a desperate situation. Wages and fringe benefits absorbed 60% to 65% of gross revenues. With declining traffic and increasing costs, margins were disappearing and receiverships, partial and total abandonments and conversion to public ownership were becoming the order of the day. It appeared that only a policy of subsidy, tax exemption, co-operation from urban planning authorities and public ownership—according to variations in local conditions—would preserve

these urban agencies of mass transportation.

Surveys and Reports.—The electric utility industry had a dependable capacity of 75,000,000 kw. at the end of 1951. In view of the inadequacy of these generating resources during the rearmament period, an Electric Power Advisory committee was asked to investigate needed power requirements and to report its findings to Chairman Manly Fleischmann of the Defense Electric Power administration. This so-called Morehouse report was submitted at the close of 1951 and included comments upon the scheduled new installations of 9,500,000 kw. for 1952, of 12,200,000 kw. for 1953 and of 8,400,000 kw. for 1954. Since these construction schedules assumed normal water conditions, the report anticipated a deficit of 1,000,000 kw. should rainfall turn out to be below normal. The committee's fear was being realized by the drought conditions which parts of the country experienced during 1952 and power shortages were appearing in the middle west (where much of the defense production was localized) and particularly in the TVA area. Other shortages existed in the Pacific northwest and the Pacific southwest.

The American Gas association reported a continuation of the phenomenal expansion of the natural gas branch of the industry. Of an estimated 26,000,000 gas customers at the end of 1952, more than 18,000,000 or 71% were natural gas customers. A total of 1,514,000 new gas house-heating customers were added during the 1951-52 heating season and more than 1,000,000 other new ones were anticipated for each of the next two heating seasons. Natural gas was being sold over almost the entire country by means of 342,500 mi. of gathering, transmission and distribution pipe lines, with only the Pacific northwest remaining as a major unserved area.

The unprecedented expansion after World War II in the electric power and gas supply industries raised the question of the adequacy of the country's energy resources. An answer to this question, and others relating to U.S. materials resources, was provided by the report of the President's Materials Policy commission, the so-called Paley report. Obscured by the national election campaign, this report, published in five volumes in June 1952, surveyed the outlook for energy sources and for key commodities. It also dealt with the promise of technology in augmenting these natural resources. Combined with the 1950 report of the Water Resources Policy commission, these findings provided an inventory of all the more important materials and energy resources available within the borders of the United States or available as imports from sources within the free world.

The report surveyed the utilization of these resources in the past and projected, by means of a long-range forecast, requirements under "cold war" conditions to 1975. With respect to the country's primary energy requirements from oil and gas wells, water power, coal, lignite and shale and from imported fuels, the conclusion was that energy requirements would double. Reducing them to a common standard of bituminous coal equivalent, they would rise from 1,300,000,000 tons in 1950 to 2,600,000,000 tons by 1975. Since much of this energy is best used in secondary forms like electricity, gasoline, fuel oil and coke, requirements for liquid fuels and for electricity with their attendant conversion losses would consume additional amounts of primary energy. Liquid fuels are most important for defense purposes and for certain civilian uses in transport (air, water and land) and by other public utilities. It was estimated that the geological stockpiles of fossil fuels—natural gas and oil—would prove inadequate to meet these needs. The only renewable energy source was water power, which in 1952 was supplying one quarter of the country's electric output. By developing the remaining domestic potential water power as electric output, that source would continue to supply one quarter of the total

requirements until 1975. The remainder would have to come from fossil fuels, especially coal and lignite. The rising demand for secondary energy forms would put an upward pressure on prices. This would make possible imports and the finding of new domestic sources. In time the only adequate reserves would be coal, which could last, at least theoretically, for centuries. With increasing resort to coal, a slow shift in energy technology was in prospect. The shift between the different primary sources would be a matter of consumers' choice, guided by the lowest cost combination of the energy mix. Even with this flexibility, the gradual shift to coals, lignites and shales would encounter technological difficulties in making the conversion from primary to secondary forms of energy. Public utilities would operate in the very centre of this utilization and conversion process. (See also DAMS; ELECTRICAL INDUSTRIES; ELECTRIC TRANSPORTATION; FEDERAL POWER COMMISSION; MATERIALS POLICY COMMISSION; RAILROADS; RURAL ELECTRIFICATION; TELEGRAPHY; TELEPHONE; TENNESSEE VALLEY AUTHORITY.) (M. G. G.)

Canada.—The federal budget tax relief for public utilities engaged in "the distribution to or generation for distribution to the public of electrical energy, gas or steam" underlined the acute nature of the pressures upon most Canadian public utilities during 1952. They were pressures of active demand and greatly increased operating costs. The federal tax relief was based on a formula that reduced the tax to 43% of the former rate of tax payable.

Early in the year the Board of Transport Commissioners authorized increased rates for the Bell Telephone company which would give it an additional \$14,339,000 a year. It was about 75% of what the company asked. Of the revenue produced by the increase, \$7,827,000 was slated for federal and provincial taxes. (C. Cy.)

Publishing: see BOOK PUBLISHING; NEWSPAPERS AND MAGAZINES.

Puerto Rico. A United States commonwealth in the West Indies, Puerto Rico has an area of 3,435 sq.mi. Population (1950 census): 2,210,703; (Jan. 1, 1952, est. 2,238,272). In 1950, rural population comprised 59.5% of the total, urban, 40.5%. Chief cities (1950 census final figures): San Juan, the capital (including Río Piedras which was annexed in 1951: 357,205); Ponce (99,492); Mayagüez (58,944); Caguas (33,759); Arecibo (28,659). Languages: Spanish and English. Religion: predominantly Roman Catholic. Governor in 1952: Luis Muñoz Marín.

History.—The constituent assembly met for five months and finally approved the constitution of the commonwealth of Puerto Rico on Feb. 6, 1952. On March 3 the document was submitted to the Puerto Rican electorate in a special referendum. Of a total of 457,572 persons, 81.9% voted for the constitution, which was then sent to the president of the United States for the proper congressional action as provided in public law 600. Final favourable action was taken by the U.S. congress and the legislation was signed by Pres. Harry S. Truman on July 3, 1952.

The commonwealth of Puerto Rico was officially founded and proclaimed by Governor Muñoz Marín on July 25, 1952, Puerto Rico thus becoming a wholly autonomous state voluntarily associated with the United States.

Education.—Total enrolment in 1952 in the public and private schools of Puerto Rico was 487,518, of which 94.8% attended public schools as follows: elementary, 348,287; secondary, 104,316; vocational, 9,382. Of the total public and private school pupils, 74.9% were enrolled at the elementary level. The number of teachers in public schools was 9,796.

Total expenditures for public education, including capital improvements but excluding the state university, during 1951-52 totalled \$38,200,000, of which \$31,200,000 was appropriated by the state government and \$7,000,000 by the federal government.

Enrolment at higher levels totalled 15,446, of which 86.8% was regis-

tered at the University of Puerto Rico, San Juan. Other institutions of higher learning were: Polytechnic Institute of Puerto Rico at San Germán, College of the Sacred Heart at Santurce, Catholic University of Santa Maria and the Puerto Rico Junior college.

Banking and Finance.—Total bank deposits as of June 30, 1952, amounted to \$282,100,000; bank loans, \$190,700,000; and bank debits \$366,800,000. Total bank assets amounted to \$381,800,000.

Total revenues of the government of Puerto Rico for the general fund and for those special funds related to central government operations during fiscal year 1952 totalled \$134,199,000, of which \$115,300,000 was received into the general fund. Total appropriations for central government purposes, including special funds and the general fund, amounted to \$151,857,000, of which \$126,000,000 belonged to the latter fund. The free cash surplus in the general fund as of June 30, 1952, amounted to \$7,552,000, excluding: (1) an estimate of \$4,700,000 special funds surplus; (2) \$7,700,000 in the debt redemption fund; and (3) a \$10,000,000 emergency fund.

Trade.—Puerto Rico's external trade during the calendar year 1951 may be summarized as follows: the value of all imports was \$442,903,245, of which \$404,500,000 represented shipments from the United States. The total value of exports was \$264,413,227, of which \$249,700,000 worth of merchandise was shipped to the United States.

Communications.—As of June 30, 1952, motor vehicles registered totalled 76,750. Passable by motor vehicles, the estimated urban mileage of streets totalled 770, and the rural mileage of roads, 3,770. Passenger traffic totalled 457,715 persons, of whom 198,051 arrived at the island and 259,664 departed. More than 95% of the passengers travelled by air. Air cargo totalled 11,600,000 lb., of which 69% was inbound cargo. As of June 30, 1952, there were 39,285 telephones in service and 23 radio stations in operation. The average daily circulation of the two most important newspapers was 133,608.

Agriculture.—Crop yields for 1952 were as follows: sugar cane, 12,500,000 short tons; tobacco, 281,297 cwt.; pineapples, 637,599 crates; coconuts, 23,800,000 nuts; and coffee, 300,097 cwt. The total gross income from agriculture for 1951-52 was estimated at \$227,900,000 compared with \$199,900,000 in 1951. Of the 1952 total, \$117,600,000 represented farm value of sugar cane compared with \$106,400,000 in 1951.

According to preliminary data of the 1950 census of agriculture there were 53,515 farms (of three or more cuerdas) comprising 1,844,886 cuerdas, of which only 41.7% was used for crops.

Manufacture.—Sugar production for the 1952 season amounted to 1,332,381 short tons (raw value), of which 212,391 tons were refined on the island. During fiscal year 1952, production of blackstrap molasses amounted to 69,800,000 gal.; distilled spirits, 3,100,000 proof gallons; and beer produced, 9,600,000 gal. The total value of construction permits granted during the fiscal year amounted to \$83,100,000. Electric power generated amounted to 698,400,000 kw.hr., of which 39.5% was hydroelectric power.

According to the 1949 census of manufactures, there were 1,998 manufacturing establishments on the island, employing a total of 55,137 persons who earned \$49,200,000 in salaries in 1949. The total value added to products by manufacture amounted to \$93,400,000. (C. A. VA.)

Mineral Production.—The accompanying table shows the tonnage and value of mineral commodities produced in Puerto Rico in 1949 and 1950,

Mineral Production of Puerto Rico

(In short tons, except as noted)

Mineral	1950		1949	
	Quantity	Value	Quantity	Value
Cement (bbl.).	3,187,000	\$8,299,000	2,171,000	\$6,109,000
Lime	8,000	181,000	7,000	184,000
Salt	14,000	137,000	13,000	77,000
Sand and gravel	101,000	104,000	..	..
Stone	250,000	575,000	520,000	827,000
Other Minerals . . . . .	..	1,000	..	216,000
Total		\$9,297,000		\$7,413,000

*Value included with other minerals.

listing all items whose value exceeded \$100,000. Data for 1951 were not yet available.

Pulitzer Prizes. The annual Pulitzer prizes in journalism, letters and music, first awarded in 1917, were established at Columbia university by the will of Joseph Pulitzer. The five 1952 prizes in letters, of \$500 each, were awarded as follows: fiction award to Herman Wouk for *The Caine Mutiny* (Doubleday); biography award to Merlo J. Pusey for *Charles Evans Hughes* (Macmillan); history award to Oscar Handlin for *The Uprooted* (Little, Brown); poetry award to Marianne Moore for *Collected Poems* (Macmillan); and drama award to Joseph Kramm for *The Shrike* (Random).

Journalism prizes were awarded as follows: the meritorious public service medal to the *St. Louis Post-Dispatch* for exposing evidence of political immorality in federal government departments; \$500 awards to each of the following individuals: for local reporting to George de Carvalho, of the *San Francisco Chronicle*, for his stories of a ransom racket extorting money from Chinese in America for relatives held prisoner in Red China; for national reporting to Anthony Leviero, White House

correspondent for the *New York Times*, for his exclusive article disclosing the record of conversations between Pres. Harry S. Truman and Gen. Douglas MacArthur at Wake Island; for international reporting to John M. Hightower, diplomatic editor of the Associated Press, for "the sustained quality of his coverage of news of international affairs during the year"; for editorial writing to Louis LaCoss, of the *St. Louis Globe-Democrat*, for his editorial entitled "The Low Estate of Public Morals"; the cartoon award to Fred L. Packer, of the *New York Mirror*, for his drawing of a White House press conference entitled "Your Editors Ought to Have More Sense Than to Print What I Say!"; for news photography to John Robinson and Don Ultang, of the *Des Moines Register and Tribune*, for their photo of an incident at a football game. Special citations were given to the *Kansas City Star* for editorial planning, organization and execution of news coverage of the great regional flood of 1951 and to Max Kase, sports editor of the *New York Journal-American*, for his exclusive exposures of corruption in basketball.

The Pulitzer prize in music, first given in 1943, was awarded to Gail Kubik for his *Symphony Concertante*. (A. J. RR.)

Pulp Industry: see PAPER AND PULP INDUSTRY.

Purcell, Edward Mills (1912-), U.S. physicist and Nobel prize winner, was born at Taylorville, Ill., on Aug. 30 and received his bachelor of science degree from Purdue university, West Lafayette, Ind., in 1933. The following year (1933-34) he was an international exchange student at the Technische Hochschule at Karlsruhe, Ger. Returning to the United States, he was awarded his master's degree from Harvard university in 1935 and his Ph.D. in 1938. In the latter year he was appointed instructor in physics at Harvard; he was advanced to associate professor in 1946 and to full professor of physics in 1949. During World War II, at the Massachusetts Institute of Technology and elsewhere, Purcell did fundamental research that helped lead to the perfection of radar. He was also credited with the research that aided in the discovery of huge clouds of hydrogen in interstellar space. For his work in developing the so-called "nuclear resonance" or "nuclear induction" method of measuring the magnetic fields of the nuclei of atoms, Purcell was named co-winner with Felix Bloch of the 1952 Nobel prize for physics, announced in Stockholm, Swed., on Nov. 6, 1952. Purcell and Bloch had worked independently to develop the same technique of measurement for which they were honoured.

Pyrite: see MINERAL AND METAL PRODUCTION AND PRICES.

Q Fever: see RESPIRATORY DISEASES.

Quakers: see FRIENDS, RELIGIOUS SOCIETY OF.

Quebec. The largest Canadian province, Quebec is located along the lower St. Lawrence river. Area: 594,860 sq.mi., of which 71,000 sq.mi. are water. Pop.: (1951) 4,055,681. Capital: Quebec city; pop.: (1951) 161,439, metropolitan area 271,236. Chief city: Montreal (q.v.) 1,002,703, metropolitan area, 1,370,044.

History.—The legislature, which began its sessions in Nov. 1951, prorogued on Jan. 23, 1952. Among its enactments were laws to lower succession duties; increase the province's contribution to rural electrification from \$15,000,000 to \$20,000,000; increase the amount which could be loaned to farmers by the Quebec farm credit bureau; and establish pensions for the needy and the blind (both in co-operation with the federal government). Premier Maurice Duplessis, National Union party, called an election for July 16. When the votes were counted the National Union party dropped from the 82 seats it had won

in the 1948 election to 68; the Liberals rose from 8 to 23; 1 independent was elected; the 23 Co-operative Commonwealth federation (socialistic) candidates were all defeated. Duplessis alone of all the provincial premiers refused to sign a federal-provincial tax agreement.

Education.—From 1945 to 1951 the provincial government granted \$42,200,000 for the construction of 1,290 schools and equipment of 3,703 classrooms (for 102,000 pupils); from 1946 to 1951, \$9,000,000 was spent on construction of technical schools and art and trade schools.

Health and Welfare.—In the 1944-50 period the government made \$36,200,000 available for the construction of hospitals, which resulted in 22 new hospitals and sanatoria and the enlargement of 29 others, adding a total of 9,350 beds. The workmen's compensation act was amended to permit payment of 70% of wages instead of 66% for permanent disability; maximum wages on which compensation could be based was raised from \$2,500 to \$3,000.

Transportation.—In the 1949-52 period a total of \$1,555,000,000 was spent on roads, which extended 23,857 mi. (of which only 1,999 mi. were kept open during winter months).

Finance.—Provincial revenues for the fiscal year ending March 31, 1951, totalled \$270,590,400 and ordinary expenditures \$206,992,000. There were capital expenditures amounting to \$62,429,000, leaving a net surplus of \$1,169,400. Net public debt at March 31, 1951, was \$256,000,000.

Agriculture.—Preliminary estimates showed that Quebec farmers received a record \$432,700,000 cash income from the sale of farm products in 1951, compared with \$361,400,000 in 1950. The gross value of 1951 field crops was set at \$203,700,000. The farm credit bureau had \$85,000,000 on loan to 35,241 farmers. The provincial government tightened its ban against the sale of margarine by making mere possession thereof a crime.

Industry.—In the 1939-51 period the number of industrial plants increased from 8,400 to 14,000 and gross value of manufacturing from \$1,045,000,000 to \$4,500,000,000. In 1939 the employment index was 100, and the average weekly earnings were \$21.26; in 1951 the index was 168.5 and the average earnings had increased to \$47.37. By July 1952 the index had risen to 176.6 and the weekly earnings to \$51.40.

Minerals.—In the 1939-51 period the gross value of mineral production increased from \$69,000,000 to \$250,000,000. Asbestos continued to be the most important single mineral product, valued at \$75,000,000 in 1951; gold \$39,000,000; copper \$38,700,000; zinc \$34,000,000; silver \$3,900,000.

BIBLIOGRAPHY.—John and Marjorie Mackenzie, *Quebec in Your Car* (C. C.).

Racing and Races: see AIR RACES AND RECORDS; AUTOMOBILE RACING; HORSE RACING; MOTOR-BOAT RACING; OLYMPIC GAMES; TRACK AND FIELD SPORTS; YACHTING.

Radar: see ELECTRONICS; MUNITIONS OF WAR.

Radio. The best available estimates placed the number of radio stations in operation or being constructed throughout the world in 1952 at about 7,000. This figure, representing no substantial change from the 1951 total, included boosters or relay as well as broadcast stations, but did not count the television (TV) and frequency modulation (FM) stations.

The number of radio receiving sets in use throughout the world was estimated at about 175,000,000 to 180,000,000, compared with 171,000,000 to 175,000,000 in 1951. In the U.S. alone there were approximately 105,300,000 sets, a gain of about 1,000,000 since the end of 1951. The A. C. Nielsen company research organization reported that the number of homes with radio receivers had reached 43,866,120, or 98% of all homes in the nation. This compared with a total of 40,970,000 reported by the 1950 census.

U.S. Stations.—The year 1952 was one of steady development for radio and of boom for television, with licences for new TV stations being issued again for the first time since Sept. 1948.

Broadcasting-Telecasting magazine's box score, based on official records of the Federal Communications commission, showed 3,302 broadcasting stations were in operation or had been authorized by Oct. 1952. This figure, which included amplitude modulation (AM), FM and television stations, may be compared with 3,161 the year before. The number of stations actually on the air in Oct. 1952 was the largest ever: 3,101, as against 3,083 at the end of 1951.

Broadcasting-Telecasting reported that the number of AM stations was 2,474 in October; of these, 2,355 were in operation. At the end of 1951 the AM total had been 2,406, of which 2,295 were operating. The FM station total went up for the first time

in several years, rising from 648 to 655, of which 635 were in operation.

In TV, FCC's licensing freeze was lifted, effective July 1, and on July 11 the licensing agency issued its first television station authorizations in almost four years. By early October a total of 68 new stations had been authorized, in addition to the 109 already on the air. Of the 68, 59 were authorized to operate commercially, while 9 were slated for noncommercial, educational operation by schools and the like. With the number of applicants exceeding the number of channels available in most major cities, making it necessary for the FCC to hold hearings, authorities felt that several years would pass before the 2,000-odd stations anticipated by the FCC would be authorized.

Applications for new AM stations awaiting action by the FCC stood at 310 at the start of Oct. 1952—the same figure recorded in Dec. 1951. In FM, 22 applications were pending, compared with 11 in 1951. The number of television applications was 765 and was rising.

Transit Radio.—This major FM development, the broadcasting of specialized programs (usually music and news) to receivers installed on streetcars and buses, received a boost from the U.S. supreme court in May 1952. The court overruled a lower tribunal's decision that transit radio's "commercials and announcements" deprive "objecting passengers of liberty without due process of law" and, accordingly, are unconstitutional. The supreme court decision, adopted on a 7-to-1 vote, said that "neither the operation of the service nor the action of the [Public Utilities] Commission permitting its operation is precluded by the Constitution." The commercial feature of the service, the decision continued, "bears some relation to the long-established practice of renting space for visual advertising on the inside and outside of streetcars and buses."

But, although transit radio won a substantial victory in the court, its status at the FCC remained somewhat cloudy, along with that of other special FM services which employ a "beep" signal for switching voice programming. These functional services, including those broadcasting programs for reception in stores, restaurants and factories as well as streetcars and buses, requested the FCC to conduct a hearing and settle the issue on an industry-wide basis.

U.S. Commercial Broadcasting.—The year 1951, latest for which official reports were available by Oct. 1952, was a banner one in time sales, with total radio (AM-FM) revenues of networks and stations reaching a record high of \$450,400,000, a gain of 1.3% over 1950 totals. Net income (before federal income tax), however, dropped 15.7% to a total of \$57,500,000. The FCC said that "this decrease was the result of a reported drop of almost 50% in the earnings of the networks from radio operations, coupled with a slight decline of about 4% in the earnings of individual radio stations."

Counting \$235,700,000 in TV revenues, total broadcast receipts amounted to \$686,100,000 in 1951 as against \$550,400,000 in 1950. This represented a gain of 24.7%. The FCC's summary

Table I.—Radio and Television Broadcast Receipts, Expenditures and Income

Service	1951	1950	Per cent increase or decrease in 1951
Total broadcast revenues			
Radio (AM and FM)	\$450,400,000	\$444,500,000	1.3
Television	235,700,000	105,900,000	122.6
Industry total	\$686,100,000	\$550,400,000	24.7
Total broadcast expenses			
Radio (AM and FM)	\$392,900,000	\$376,300,000	4.4
Television	194,100,000	115,100,000	68.6
Industry total	\$587,000,000	\$491,400,000	19.5
Broadcast income (before federal income tax)			
Radio (AM and FM)	\$ 57,500,000	\$ 68,200,000	-15.7
Television	41,600,000	-9,200,000	—
Industry total	\$ 99,100,000	\$ 59,000,000	68.0



FINAL BRIEFING on script revisions before a broadcast of "The Big Show," early in 1952, starring Tallulah Bankhead (seated, second left)

of the breakdown between radio and television in three basic financial categories is shown in Table I.

The 4 nation-wide radio networks, 3 regional networks and 25 stations owned by these networks accounted for \$104,029,000 of total broadcast revenues in 1951, representing a 5.8% drop from their 1950 figure. With their expenses up 2.7% to a total of \$93,934,000, these same networks and stations reported net income of \$10,095,000, or 46.8% less than in 1950.

Receipts from the Sale of Time.—Time sales, which are the financial backbone of broadcasting, edged up 0.6% to a new record high of \$456,112,000 in 1951, according to the FCC report. Revenues from the sale of network time were off 7.2% with a total of \$122,034,000. Sales of nonnetwork time to national and regional advertisers accounted for \$119,559,000 (a gain of 0.6% over 1950), while sales to local advertisers gained 5.6%, reaching a total of \$214,519,000. It was the first time, the FCC noted, that sales of nonnetwork time to national and regional advertisers had exceeded nation-wide network time sales.

These figures included commissions paid to agencies, etc.,

Table II.—Comparative Financial Data of Radio Networks and Stations*

Radio Networks and Stations	1951	1950	Per cent increase or decrease
Revenues, sale of network time . . .	\$122,034,000	131,530,000	— 7.2
Revenues, nonnetwork time sales to national, regional sponsors . . .	119,559,000	118,824,000	0.6
Revenues, time sales to local advertisers . . .	214,519,000	203,211,000	5.6
Commissions to agencies, etc. . . .	51,561,000	52,476,000	— 1.7
Revenues from talent sales, etc. . .	44,675,000	41,969,000	6.4
Total broadcast revenues	449,226,000	443,058,000	1.4
Total broadcast expenses	389,975,000	372,315,000	4.7
Broadcast income before federal income tax	59,251,000	70,743,000	—16.2

*Seven networks and 2,200 stations were covered in the 1951 report, which did not, however, reflect financial data of 66 independently operated FM stations. The 1950 report covered 7 networks and 2,143 stations.

which broadcasters consider an expense of sale. Payments of this nature amounted to \$51,561,000 in 1951, a decline of 1.7% from the 1950 total. The figures were based on reports from 4 national and 3 regional networks and 2,200 stations (not including 66 independently operated FM stations), whereas the 1950 figures covered 4 national and 3 regional networks and 2,143 stations.

Radio Industry Balance Sheet.—The basic financial data on the radio industry for the years 1951 and 1950 are shown in Table II.

Tangible Broadcast Property.—Four national networks, 3 regional networks and 2,186 stations had a total original investment of \$254,731,197 applicable to radio operations, the FCC said in its 1951 report. Depreciation of these properties to date was placed at \$104,933,967. The report did not cover 66 independently operated FM stations; 14 other stations reported no owned tangible broadcast property.

Table III, issued by the FCC, shows tangible broadcast property ownership according to class of stations.

Average Station Revenues and Expenses.—The FCC reported that the average AM station built before World War II received almost \$300,000 in total revenues in 1951 and, out of this,

Table III.—Tangible Broadcast Property Applicable to Radio Operations for All Networks and Stations*

Class of station	Number of stations	Cost to licensee	Depreciation to date under ownership of licensee	Depreciated cost
Clear channel, 50 kw. . . .	65	\$ 36,267,131	\$ 16,946,193	\$ 19,320,938
Clear channel, 5–25 kw. . .	54	12,040,786	5,126,965	6,913,821
Regional	1,047	125,540,145	47,358,833	78,181,312
Local	995	50,252,294	18,071,888	32,180,406
All stations	2,161	\$224,100,356	\$ 87,503,879	\$136,596,477
4 nation-wide networks, including owned stations . .	18	\$ 29,533,422	\$ 16,446,032	\$ 13,087,390
3 regional networks, including owned stations . .	7	1,097,419	984,056	113,363
All networks and stations . .	2,186	\$254,731,197	\$104,933,967	\$149,797,230

*Does not include 66 independently operated FM stations; 14 other stations reported no owned tangible broadcast property.

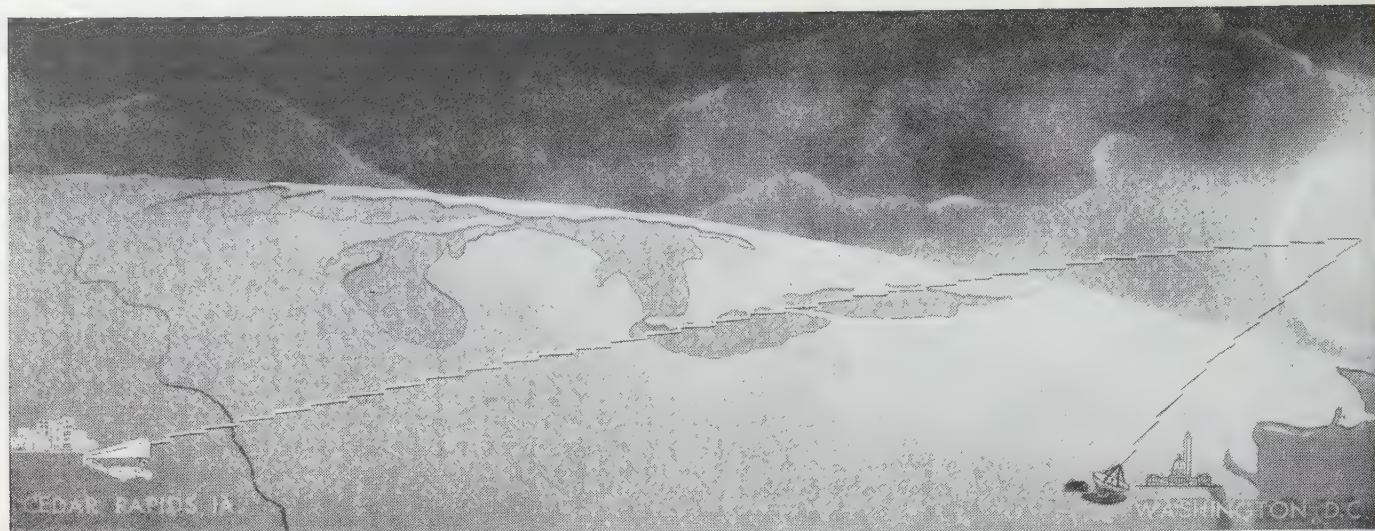


DIAGRAM OF THE PATH of a radio message directed at the moon in Morse code from Cedar Rapids, Ia., and received in Sterling, Va., near Washington, D.C., via ultra-high frequency signals reflected from the moon. The experiment was reported on in 1952 by the National Bureau of Standards

earned a profit of slightly more than \$50,000 before federal income tax. The average station built since World War II, but not counting those in operation less than two years, received almost \$100,000 in revenues and earned a profit of approximately \$7,500.

One-half of all radio stations, the FCC said, had total revenues of less than \$100,000. In this revenue group, average earnings ranged from a little more than \$5,000 for network affiliates to about \$3,000 for stations not affiliated with a network. In all, 44% of the total stations reported revenues between \$100,000 and \$500,000; of these, network affiliates averaged \$28,000 in earnings and nonnetwork stations slightly more than \$17,000. A total of 116 stations, or 6%, enjoyed revenues exceeding \$500,000; average earnings in this group were \$216,000 for network affiliates and \$159,000 for nonaffiliates. All earnings figures were before federal income tax.

Losing Stations.—A total of 519, or 24%, of the almost 2,200 reporting AM stations indicated that they took financial losses in 1951. These, the FCC said, represented the smallest proportion of AM losers since 1946, when the postwar boom in station construction got under way. A total of 400 of the losers commenced operation after World War II; these composed 29% of the 1,384 stations which went on the air after that date. Of the 800-plus prewar stations, 15% reported losses during 1951.

For the first time, the FCC said, the proportion of AM losers was greater in cities with television stations than in non-TV markets. The report showed that almost 31% of AM stations with TV competition lost money, while the number without TV competition which nevertheless lost money was 21%. Hardest hit, apparently, were nonnetwork affiliates in TV markets: 36.5% of these stations reported losses for the year.

FM Finances.—FM station operation continued in 1951 to be generally unprofitable. The FCC reported, for example, that of the 66 independently operated FM stations—that is, FM stations without AM affiliates—60 experienced losses from 1951 operations. In the case of FM stations operated in conjunction with AM stations, it was difficult to distinguish the expenses of one station from those of the other.

U.S. Programs.—The ten most popular programs on the air in the third week of Aug. 1952 are shown in Tables IV and V, prepared from measurements made by the A. C. Nielsen company, Chicago, which publishes "Nielsen-Ratings" of programs. Alongside the Aug. 1952 ratings of these programs are shown

their respective standings and ratings of Aug. 1951, if they were in the so-called "top ten" at that time. The tables separate daytime and evening programs.

Generally speaking, the trend to develop new radio shows to compete with the attraction of television continued in 1952. There also was increased interest, among broadcasters, in lower-cost shows. Music and news remained highly attractive.

The fact that 1952 was a presidential election year left a clear imprint upon radio programming. In addition to the politicians' heavy reliance upon radio-TV as a fundamental campaign tool, radio and its visual affiliate won high praise for their coverage of the Republican and Democratic presidential nominating conventions in July, their reporting of the pre-convention campaigns of the principal candidates and the campaigns of the nominees afterward, and for coverage of the returns of the voting.

U.S. Nation-Wide Networks.—The number of nation-wide radio networks in the U.S., which increased from four to six in 1950 and dropped back to five with the suspension of activities by the Progressive Broadcasting system in 1951, returned to four in 1952 when the youngest network, the Liberty Broadcasting system, suspended service to its affiliates on May 15. The company, which had almost 400 affiliated stations at that time, was in process of resuming operations on a much more limited scale later in the year.

Table IV.—Top-Rated Evening Network Radio Programs in the U.S.

Program	Rank		Nielsen rating*	
	Aug. 1952	Aug. 1951	Aug. 1952	Aug. 1951
Dragnet	1	...	6.5	...
Railroad Hour	2	...	6.5	...
FBI in Peace and War	3	3	6.1	6.2
You Bet Your Life	4	...	6.0	...
Life with Luigi	5	...	5.6	...
Romance	6	2	5.5	6.8
Gene Autry Show	7	5	5.5	6.1
People Are Funny	8	...	5.5	...
Great Gildersleeve	9	...	5.3	...
Johnny Dollar	10	...	5.3	...

*Rating is expressed in terms of percentage of radio homes listening. Source: A. C. Nielsen Company, Chicago, 1952.

Table V.—Top-Rated Weekday Network Radio Programs in the U.S.

Program	Rank		Nielsen Rating*	
	Aug. 1952	Aug. 1951	Aug. 1952	Aug. 1951
Romance of Helen Trent	1	3	6.7	7.3
Right to Happiness	2	...	6.7	...
Our Gal Sunday	3	2	6.7	7.4
Ma Perkins	4	1	6.6	7.5
Backstage Wife	5	...	6.6	...
Pepper Young's Family	6	...	6.6	...
Road of Life	7	...	6.3	...
Big Sister	8	4	6.2	7.2
Guiding Light	9	6	6.1	6.2
Aunt Jenny	10	8	5.8	5.9

*Rating is expressed in terms of percentage of radio homes listening. Source: A. C. Nielsen Company, Chicago, 1952.

The four "old-line" networks were the American Broadcasting company (ABC), the Columbia Broadcasting system's CBS Radio network, the Mutual Broadcasting system (MBS) and the National Broadcasting company (NBC). CBS Radio marked its 25th anniversary in September but did so without fanfare, in contrast with NBC's 25th anniversary celebration with special programs throughout half of 1951. MBS, for the first time, came under the operating control of a single stockholder, the General Tire and Rubber company, through stock acquisitions approved by the FCC in January; and on May 31 General Tire's Thomas F. O'Neil, already board chairman of MBS, took on the additional duties of president, succeeding Frank White. Meanwhile, the proposed merger of ABC with United Paramount Theatres, a major motion-picture theatre company, was the subject of FCC hearings throughout most of the first three quarters of 1952, and it was thought the federal agency would give its final decision on the \$25,000,000 deal by early 1953.

In moves attributed primarily to the force of television competition, three of the four national radio networks realigned their cost structures to reduce, by about 25%, their advertising charges for evening time. In the same moves, daytime radio charges were increased by about 5%. First to act was CBS Radio, which made its changes effective Aug. 25. NBC and ABC followed on Oct. 1, and MBS was reported working on similar changes early in October.

U.S. Organizations; Regulation.—There were no major changes in the administration of either the broadcasters' trade association, the National Association of Radio and Television Broadcasters (N.A.R.T.B.), or the radio industry's autonomous sales promotion agency, the Broadcast Advertising bureau (B.A.B.). N.A.R.T.B. was headed by Pres. Harold E. Fellows. B.A.B., under Pres. William B. Ryan, won independent status after its formative period as an arm of N.A.R.T.B. and, with a budget approaching \$1,000,000, launched a series of projects to promote the use of radio as an advertising medium.

Glen McDaniel, first paid president of the Radio-Television Manufacturers association (R.T.M.A.), resigned effective Oct. 1, and the organization's directors voted to return to the system of unpaid presidencies. James D. Sechrest, general manager, was elevated to executive vice-president, and Board Chairman A. D. Plamondon, Jr., was given the additional office of president. In another trade organization, the National Association of Radio and Television Station Representatives (N.A.R.T.S.R.), Murray Grabhorn resigned as managing director and was succeeded by T. F. Flanagan on April 1. Later in the year N.A.R.T.S.R. simplified its name, changing it to Stations' Representatives association (S.R.A.). Broadcast Music Inc. (B.M.I.), licensing and publishing organization founded by the broadcasting industry, continued to expand under the supervision of Pres. Carl Haverlin.

The first major revision of the fundamental law governing radio, the Communications act of 1934, was passed by congress in early July and subsequently signed into law by Pres. Harry S. Truman. Known as the McFarland bill for its sponsor, Sen. E. W. McFarland (Dem., Arizona), the new law dealt largely with administrative operations of the FCC. Among the provisions directly affecting broadcasters was one prohibiting stations to charge political candidates higher rates than "the charges made for comparable use of such station for other purposes."

In midyear a house committee launched an investigation of so-called "immoral or offensive" radio and TV programs which generated widespread publicity and controversy. The probe, still in progress in October, was set in motion by passage of a resolution introduced by Rep. E. C. Gathings (Dem., Arkansas) to "determine the extent to which the radio and television programs currently available to the people of the U.S. contain

immoral or otherwise offensive matter, or place improper emphasis upon crime, violence and corruption." Representatives of the broadcasting industry contended they were policing their own programs and doing a progressively good job, and expressed fears that the house approach might lead to censorship. Sen. William Benton (Dem., Connecticut), who proposed in 1951 to set up a review board to study radio and television programming, said of the house investigation that it "is the wrong way to go about improving radio and TV programs."

Inter-American Agreements.—The "new" North American Regional Broadcasting agreement (N.A.R.B.A.), worked out in 1951 after long and controversial deliberations, still awaited U.S. senate ratification in 1952. A subcommittee appointed to study it did not act. Replacing an earlier treaty that had expired, the agreement was designed to govern AM broadcast allocations among the U.S., Canada, Cuba, the Bahamas and Jamaica and the Dominican Republic. (R. W. CR.; S. TF.)

International.—Jamming, and efforts to overcome it, became an accepted feature of the European scene in 1952. To the jamming of Russian and Polish broadcasts from western countries was added the jamming of transmissions in Finnish, Hungarian, Rumanian and Albanian by the British Broadcasting corporation (B.B.C.). Broadcasts in satellite countries' languages from Rome, Athens and Canada and by the "Voice of America" were also heavily jammed. For the first time the satellite radio organizations themselves took an active part in the jamming campaign, though they were not so efficient as jamming stations inside the U.S.S.R. There was ample evidence from the target areas to show that jamming did not blot out the transmissions for any substantial period of time.

The U.S.S.R. and its satellites increased their short-wave output considerably, in particular to western and southern Europe and to Scandinavia; their group output totalled nearly 1,200 hours a week in about 40 languages. At the same time Communist China expanded its external services, mainly to far eastern areas. Among western organizations the most notable expansion was that of Radio Free Europe, the privately sponsored U.S. station, which reached a total of 400 hours weekly, mainly in Czech, Hungarian and Polish. The "Voice of America" also expanded during 1952 and brought into service the ship "Courier," a seagoing radio station which began transmissions from an anchorage in the eastern Mediterranean. The B.B.C. was obliged by government economy to reduce its external services for the third year in succession. Italy's external broadcasting system continued to expand. Other countries that expanded their services during the year were Argentina and Australia. An interesting newcomer to the field was Syria. A program in Ukrainian was added to the Canadian service.

Great Britain.—In 1952 the B.B.C. renewed its charter for a further ten years, but only after modifications which declared that the B.B.C. should remain the sole custodian of British sound broadcasting but that the way should be opened for the setting up at a later date of a competitive television service, presumably financed by commercial advertising.

Among the year's notable broadcasts were the vivid sound pictures of the lying-in-state and funeral of George VI and the proclamation of Elizabeth II. Winston Churchill's tribute at the time of the king's death was regarded as one of his finest broadcasts.

The Olympic games at Helsinki, Fin., were fully reported. The home service started an important drama series called "The English Theatre," covering the previous 50 years. Works of Vaughan Williams, whose 80th birthday fell on Oct. 12, figured prominently in the first program on Oct. 15 of the 1952-53 season of B.B.C. symphony concerts. Arnold Toynbee gave the 1952 Reith lectures on "The Impact of the West on Other

Civilizations"; Bertrand Russell gave a notable series of "Portraits from Memory."

The Light program started a series of specially written radio plays and broadcasted a number of others chosen by star performers. Edgar Lustgarten's "Prisoner at the Bar" crime series was an exceptional solo presentation.

In the Third program a complete cycle of "The Ring," with *Parsifal* and *Die Meistersinger*, was broadcasted from Bayreuth, and the first world performance of Richard Strauss's *Die Liebe der Danae* came from Salzburg. At least one full-length opera was broadcasted each week, and chief of these was the Covent Garden presentation of Alban Berg's *Wozzeck*. A full-scale study of Arnold Schönberg included many concerts and talks. Important series of talks included Isaiah Berlin on "Freedom and Its Betrayal" and George Rylands' illustrated series on "Reading Poetry Aloud." Thomas Mann and Pablo Casals gave notable talks on "The Artist and Society." John Lehmann's monthly literary miscellany, "New Soundings," designed to provide an outlet for new writers, made an encouraging start. Readings from *The Faerie Queene* and several talks marked the fourth centenary of Edmund Spenser's birth.

Europe.—In western Europe, particularly in western Germany, there was intensive development of very high frequency (VHF) broadcasting for domestic services. Nordwestdeutscher Rundfunk alone operated 22 VHF stations in northwest Germany.

In France a new station was opened at Sélestat, near Strasbourg, in September to improve reception on domestic programs. It consisted of three medium-wave transmitters each of 100 kw. In October a new long-wave transmitter of 250 kw. was opened at Allouis. A large site was purchased in Paris, near Passy, for the new headquarters of Radio-diffusion et Télévision Françaises.

The third general assembly of the European Broadcasting union was held in Lugano, Switz., in October. Georges Conus of Switzerland was elected president. West German broadcasting stations, associated together for the purpose, attended as members for the first time.

British Commonwealth.—The South African Broadcasting corporation announced in July plans to build a new station near Bloemfontein. In East Africa plans were made to establish a new short-wave national service for Uganda as well as a medium-wave service for Kampala. In Kenya, Tanganyika and Northern Rhodesia programs for Africans were expanded. Two new provincial networks started operation in Nigeria to supplement the output of the national transmitter at Lagos. When broadcasting development was completed in this colony, approximately 370,000 sq.mi. and a population of 25,000,000 would be served. Experimental transmissions started in September on a ten-kilowatt medium-wave station at Nicosia in Cyprus. B.B.C. program and technical staff arrived in British Honduras toward the end of the year to establish new medium- and short-wave networks covering the territory. A five-kilowatt short-wave transmitter was sent to the Falkland Islands to provide a service for the sheep farming community. The total number of listeners in the British colonies was estimated in June at 3,000,000. (See also LAW.)

(G. G. Wr.)

Radiology: see X-RAY AND RADIOLOGY.

Railroad Accidents: see DISASTERS.

Railroads. The operation of the railroads under the token supervision of the U.S. army, which Pres. Harry S. Truman had ordered on Aug. 27, 1950, to avert a threatened nation-wide railroad strike, was terminated on May 23, 1952.

The railroads' traffic and earnings were adversely affected

during the year by a strike of eight weeks' duration in the steel industry and the consequent closing down or slowing up of production in related industries.

Operating revenues of the 132 Class I railways in the United States in the first eight months of 1952 aggregated \$6,810,999,610 compared with \$6,764,406,068 in the same period of 1951, an increase of 0.7%. Operating expenses for the same months of 1952 were \$5,298,347,702 compared with \$5,345,357,749 in the same period of 1951, a decrease of 0.9%. In the eight months ending Aug. 31, 1952, the net income of the Class I railroads was estimated at \$405,000,000, compared with a net income of \$339,000,000 in the same period of 1951, both figures after interest and rentals. The rate of return for the year ending Aug. 31, 1952, was 4.08%, compared with a rate of return of 3.96% for the year ending Aug. 31, 1951.

The Interstate Commerce commission's Bureau of Transport Economics and Statistics reported gross annual capital expenditures for additions and betterments for the first half of 1952 at \$715,200,000 compared with \$660,100,000 for the same period of 1951, an increase of 8.3%. Expenditures for road property increased 15.5% in 1952 over the corresponding period in 1951, while equipment expenditures increased by 6.2%. Estimates of 127 of the Class I railroads placed gross capital expenditures for road and equipment during the second half of 1952 at \$659,000,000, making an estimated total for the year of \$1,374,200,000, compared with actual expenditures of \$1,414,000,000 in 1951. This estimate placed road expenditures at 2.2% above 1951 levels and equipment expenditures at 4.5% below those of 1951.

One of the most noteworthy developments in railroad transportation in 1952 was the continuation and acceleration of the change-over from steam to diesel motive power. During 1952 diesel locomotives operating on railroads in the U.S. performed approximately 65% of freight service, more than 70% of passenger service, and more than 75% of yard and switching services. Of the diesel locomotives which were in service, 97% had been installed since 1940, and 82% since the close of World War II. In the two-year period, Aug. 31, 1950, to Aug. 31, 1952, the railroads in the United States installed 6,800 diesel locomotive units. It was predicted that in the following year the railroads would be operating more than 21,000 diesel units.

As of Aug. 31, 1952, the total number of freight cars owned by Class I railroads was 1,840,623, compared with 1,818,062 a year before, a gain of 22,561 freight cars of all types. In the same period 80,877 new cars were installed, and 58,316 old cars were retired from service. As of Aug. 31, 1952, the Association of American Railroads, Car Service division, reported 108,222 freight cars awaiting repairs as compared with 96,020 freight cars awaiting repairs a year earlier. The net serviceable railroad freight cars in service as of Aug. 31, 1952, was 1,732,401, as compared with 1,722,042 a year before. At the same date there were 78,825 freight cars on order. The average daily freight-car shortage as of the end of August was 4,924 cars, compared with 18,120 cars at the corresponding date in 1951. Revenue carloadings for the period of 1952 for which data were available averaged about 700,000 carloads a week.

The volume of freight traffic of Class I railways was about 5% lower, measured in revenue ton-miles, in the first half of 1952 than for the corresponding period of 1951. The total revenue freight traffic was 303,378,000,000 ton-miles in the first half of 1952, compared with 319,520,000,000 revenue ton-miles in the first half of 1951.

Freight traffic revenue declined very slightly from \$4,238,714,000 in the first half of 1951 to \$4,234,845,000 in the first half of 1952, a decrease of about 0.1%.

In the first half of 1952, Class I railways in the United States

performed 17,096,400,000 revenue passenger-miles, an increase of 3.9% over the 16,451,400,000 revenue passenger-miles in the same period of 1951. Passenger revenues increased from \$430,578,000 in the first half of 1951 to \$459,387,000 in the first six months of 1952, an increase of 6.7%.

On April 14, 1952, the Interstate Commerce commission authorized increases to be made in freight charges which superseded the previous increases authorized on April 4 and August 28, 1951. The new increased rates became effective May 2, 1952.

The order of the Interstate Commerce commission permitted the railroads to increase their rates and charges generally by 15%, to be applied as percentage increases in the amount of the total freight charges, exclusive of the federal transportation tax, and subject, in certain cases, to maximum increases in specific amounts per hundred pounds or per ton. Class rates generally were permitted to be increased by 15%, and rates upon certain commodities were allowed maximum increases, of which the following were representative: fresh fruits, vegetables, melons, nuts, canned or preserved food products, and some metals, such as copper, lead and zinc, increased 12 cents per 100 lb.; building woodwork and millwork, 14 cents per 100 lb.; sugar and syrup, 10 cents per 100 lb.; phosphate rock and salt, 60 cents per ton; muriate of potash, sulphate of potash and sulphate of potash magnesia, \$1 per ton; coal and coke, 12% subject to a maximum of 40 cents per ton; iron ore, sand, stone, slag and other related articles, 12%; and grain and grain products, 12%.

These increases brought railroad freight rates to a level of more than 167% of the rates in effect in 1946, and represented the 12th occasion in which railroad freight rates had been dealt with by the Interstate Commerce commission since the cessation of hostilities in World War II.

During 1952, the three military departments, army, navy and air force, represented collectively the largest user of transportation services in the world, and were individually among the largest shippers via all forms of transportation. The department of defense, representing the federal government, arranged for the transportation of more than 2,500,000 tons of freight monthly. In the government fiscal year, the military traffic service of the department of defense estimated that the department would spend about \$1,000,000,000 for domestic transportation alone. Military traffic was about three times the volume it had been in the period between World War II and the outbreak of the Korean war.

The Defense Transport administration continued in 1952 to function as the executive agency of the federal government, for the co-ordination and assistance of the domestic transportation system, including port and storage facilities, and for working with the railroads, water carriers, highway carriers and related facility operations to bring their equipment and plant into a state of readiness to assume the greater load which would be placed upon the transportation system in the event of enemy attack or full-scale war operations.

In this task, the Defense Transport administration sponsored a railroad freight-car building program to achieve the objective of a fleet of 1,850,000 freight cars in 1953. It also sponsored a program of diesel-electric locomotive construction, a program of railroad tank-car building, the construction of 20 new Great Lakes boats for bulk cargoes, the construction of more than 200 new and improved barges for inland waterway service, a highway vehicle building program and a warehouse and storage facility program.

In Oct. 1952 the Interstate Commerce commission made public a study made by its Bureau of Transport Economics and Statistics, part of a series of studies in industry economics sponsored by the air force. The study placed the annual capacity of

the railroads at about 685,000,000,000 revenue ton-miles of freight service, and 41,000,000,000 miles of passenger service under "preparedness conditions." Under war conditions, including a six-day work week and carloading orders similar to those in effect during World War II, the railroad capacity was estimated at 750,000,000,000 ton-miles and 83,000,000,000 passenger-miles. The railroad service requirements under assumed war conditions in the year "195X" were estimated at 950,000,000,000 ton-miles and 122,000,000,000 passenger-miles, approximately 27% and 47%, respectively, above the estimated 1952 railroad capacities for freight and passenger services. The report found that the railroads should continue to make large capital expenditures for freight and passenger equipment. (See also INTERSTATE COMMERCE COMMISSION; UNITED STATES.)

(G. L. WN.)

International.—Of greater importance than technical developments in 1952 was the continuing trend toward a more unified railway system for Europe under the aegis of the International Union of Railways. This union had been encouraged by the United States and actively participated in by the British railways.

Evidence of this movement was provided by the inauguration of a pooling system for freight rolling stock, known as Europa wagons, contributed by the French and German railways.

Great Britain.—For the first time since the nationalization of British transport in 1948 the British Transport commission earned in 1951 a small surplus after interest on capital. In 1952 costs were still rising and there were wage increases; the volume of traffic was about that of 1951. Proposed legislation, as outlined in a government white paper followed by a draft Transport bill, aimed at the sale of the nationalized Road Haulage executive's vehicles to private buyers and at greater decentralization on the railways. Meanwhile the government refused to permit the full increase in passenger fares as authorized by the Transport tribunal, London area fares being particularly affected.

CONFERENCE ROOM in an all-room parlour car on the "Congressional," an 18-car train on the New York-Washington, D.C., run of the Pennsylvania railroad. Placed in service in 1952, it was designed for the convenience of government officials, business executives and family groups





IRON ORE SHIPMENT leaving Bomi hills, Liberia, by rail in 1952. Liberia's first railroad, then in its first year of operation, was constructed by the Liberian Mining company with the help of technicians sent by the Baltimore & Ohio railroad

Steel shortages slowed up the construction of new rolling stock and delayed the completion of many improvement schemes at stations and of other railway facilities. Track renewals continued at a high rate, involving speed restrictions on many main lines and thereby preventing the return of the high-speed prewar expresses.

An important engineering development was the completion of the colour-light signalling installation between Clapham junction and Selhurst on the London-Brighton line. Eleven mechanically operated signal boxes were replaced by these all-electric ones; conversion to colour-light all-electric signalling was also carried out at Euston station, London. A new 7.5-mi. line was opened in September to the new Calverton colliery (Nottinghamshire). A British-built gas-turbine locomotive made successful trials between London and Plymouth; a diesel-mechanical locomotive was tested between London and Derby and several main-line diesel-electrics were working on London-Exeter trains.

In February the first stretch of Great Britain's first main-line electrification scheme was inaugurated between Wath and Dunford Bridge on the Sheffield-Manchester line. Two more of the 12 standard types of steam locomotives came into service: a Pacific 4-6-2 class with a 19-ton axle load for service in Scotland and a 2-6-2 tank engine for suburban working. Progress was made with the output of various types of standard freight cars; these were almost entirely made of steel and the growth in the number of steel freight cars justified the conversion of a repair shop near Exeter for their overhaul. For ore traffic a new type of 56-ton eight-wheel car was introduced with an empty weight of 28.5 tons.

London Transport placed in service on its underground lines some new multiple-unit electric vehicles made of light alloys. Tests were conducted with air-braked coal trains; these were run at high speeds and the general tendency was to increase

speed, even at the sacrifice of some reduction in train weight.

Mechanization of track repair and renewal work was steadily extended and one of Britain's largest freight stations, Bristol (Temple Meads), was re-equipped on the conveyor-belt system.

In October Britain's worst rail disaster since 1915 occurred when two expresses and a local train collided at Wealdstone station in Harrow. As a result of this tragedy 111 persons were killed and more than 200 injured.

In Ireland the Dundalk, Newry and Greenore railway, the last line to be owned by the British Transport commission in Ireland, was closed at the beginning of 1952.

Continental Europe.—French national railways (Société Nationale des Chemins de Fer—S.N.C.F.) turned over to electric traction the entire main line from Paris to Lyons with the completion of the conversion of the Chalon-Lyons section in June 1952. Services were greatly accelerated and it was planned to handle 20,000 metric tons of freight daily on this route. The S.N.C.F. did not neglect alternative forms of traction, and tests were conducted with a gas-generated locomotive.

Despite the success of the 50-cycle method of electrification in France, Belgium was to adhere to the 3,000-v. D.C. system for the extensions in construction and those already planned. The vital junction railway, linking the North and South stations in Brussels, was opened. The Netherlands railways inaugurated electric traction in February on the Amersfoort-Zwolle 42-mi. section and in May on the Zwolle-Meppel-Groningen line and also the line to Leeuwarden; thus 786 mi. was electrified, or 40% of the system.

In Germany long sections of welded rail and large numbers of reinforced concrete sleepers were laid in Bavaria. Reconstruction of war-damaged facilities continued and 200,000,000 DM. were to be spent on new works in 1952. Doubling continued on sections of Swiss main lines, notably between Zurich and Sargans—almost completed—and on the Bern-Lausanne line near Fribourg. Gotthard widenings were practically finished except on the causeway near Chiasso.

Italy, with its lack of coal, continued to electrify its railways—a current program related to the Bari-Pescara 186-mi. section on the Lecce-Bologna line—and D.C. traction was replacing the original three-phase system in northern Italy; *e.g.*, on the Brenner. An expensive nine-mile link from Piazza al Serchio to Pieve San Lorenzo was started. In Austria reconstruction of the old double-track Semmering tunnel continued, and the new adjoining single-track tunnel was opened in March.

Greece was adopting diesel rail-cars with considerable success, but in Cyprus the government railway closed in January, rail facilities being replaced by road. In Spain a 70-mi. section of the railway to link Corunna with Zamora was opened in September. Swedish State railways built a mobile refrigerator train and was doubling single-track sections on the Stockholm-Göteborg artery. In Norway construction continued on the Nordland line toward Bodo.

Asia.—Saudi Arabia railway was officially opened in Jan. 1952 from Dammam to Riyadh. Built by Aramco, the 350-mi. line cost about \$50,000,000; diesel traction was employed and a U.S. staff assisted. Ceylon imported new steam locomotives but Pakistan was turning to diesels, and converted the Jacobabad-Kashmir 76-mi. section to broad gauge. Indian railways' reorganization was completed by the inauguration of the Eastern, North Eastern and Northern railways.

In Malaya, the night Singapore-Kuala Lumpur mail was restored; and Indonesia profited by new German-built steam locomotives. In Siberia, Stalinsk and Barnaul—a 110-mi. stretch—were stated to be rail-linked.

Africa.—Algerian railway improvements included the introduction of Budd-type stainless-steel passenger cars of light-

weight design, and in Morocco a new line was constructed to serve the increasing output from the anthracite mines at Djérada. Further east, in Egypt, the state railways imported more than 70 new passenger cars fitted with roller bearings. Beyer-Garratt type articulated steam locomotives with a tractive effort of 52,360 lb. on a 13-ton axle load were added to the stock of the Benguela railway in Angola, and locomotives, also of Beyer-Garratt articulated design, were imported into Rhodesia to handle the rapidly increasing volume of traffic. On the East African Railways system traffic by 1951 had increased to more than double that of 1939, but new 2-8-2 (Mikado) type locomotives, similar to those constructed for Nigeria and limited to a 13-ton axle load, arrived to ease the traffic problem of the heavily burdened metre-gauge system.

South African Railways and Harbours were still rapidly developing. In the six months ended March 1952 more than 117,000,000 suburban passengers were carried, of whom nearly 50% were in the Johannesburg area and most of the remainder in the Capetown area. The S.A.R. and H. in 1949-50 experienced a difficult financial period, but 1951 ended with a surplus of more than £8,500,000. Construction programs included the widening of the Natal main line, the partial completion of the new Johannesburg passenger station and the electrification of the Bellville-Touws River main line.

South America.—A government decree in Argentina early in the year provided for the inclusion of all government-owned transport within the Empresa Nacional de Transportes, known as E.N.T. or State Transport Undertaking. This embraced not only railways but also air lines and shipping. The British-owned railway companies, nationalized some years earlier, were in the final stages of liquidation. In Brazil electrification of the Central railway out of São Paulo was continued and progress was made on the construction of the Brazil-Bolivia railway. At the beginning of 1952 this line had penetrated to within 110 mi. of Santa Cruz, Bol.; it would finally reach Cochabamba, Bol.

Mexico.—Few countries could claim proportionately greater railway activity in 1952 than Mexico. Nationalization of the hitherto U.S.-owned Southern Pacific Railway of Mexico occurred at the beginning of the year. Reconstruction of about 150 mi. of the Mexico City-Vera Cruz line, formerly known as the Mexican railway, was taken in hand and the new standard gauge Mexico City-Oaxaca line was reported complete early in the year. Most of the 438-mi. standard-gauge Oaxaca-Puebla line was laid with heavy rail.

Canada.—Four major schemes of railway construction continued in Canada: (1) the independent Quebec, North Shore and Labrador line designed to develop the ore resources around Knob Lake—a traffic estimated eventually to reach 20,000,000 tons annually; (2) the 85-mi. extension of the provincially owned Pacific Great Eastern from Quesnel to join the Canadian National railways at Prince Rupert in British Columbia; (3) the C.N.R.'s own branch in the same area from Terrace, near Prince Rupert, to Kitimat, to cost about \$10,000,000, which was linked with a great aluminum development project involving a new port; and (4) the Sherridon-Lynn Lake new 155-mi. branch designed to open up the nickel ore resources at Lynn Lake in northwestern Manitoba.

Other Canadian railway developments in different spheres were the government's approval of the recapitalization of the Canadian National railways, the demolition of that company's historical Bonaventure station at Montreal and the continuing construction of the Toronto subway, the first underground railway in Canada.

Australasia.—Besides a shortage of skilled labour, there was an inadequate supply of good quality locomotive fuel. To over-

come this the Victorian government railways converted certain locomotive types to oil-burning; others were equipped to burn the low-grade brown coal of which there was an abundant supply. Main-line diesels were coming into service. Electrification was continued to ease the fuel problem and the same policy was being extensively adopted in New South Wales. The volume of traffic remained in most states at an almost record level.

The arrival in New South Wales of the new 255-ton Beyer-Garratt 4-8-4 + 4-8-4 steam locomotives being built in Manchester, Eng., was expected to reduce materially the strain on the available motive power resources. These locomotives were reputed to be the heaviest locomotives ever built outside North America for the standard 4 ft. 8.5 in. gauge. In September the New South Wales government announced a complete reorganization of its railway administration involving the abolition of its Transport and Highways commission.

Tasmania benefited from the acquisition of new steam locomotives, limited in axle load to ten tons, and additional motive power, including diesels, eased the traffic problems on the Queensland and West Australian systems. In New Zealand, where the annual railway deficit was more than £1,000,000, electrification and dieselization continued, the former relating to the Hutt Valley line near Wellington. Oil-burning steam locomotives of 4-8-2 (mountain) type were received from Great Britain. (See also ELECTRIC TRANSPORTATION.) (C. E. R. S.)

Rainfall: see METEOROLOGY.

Raisins: see FRUIT.

Ramjets: see JET PROPULSION.

Rapid Transit: see ELECTRIC TRANSPORTATION.

Rates of Exchange: see EXCHANGE CONTROL AND EXCHANGE RATES.

Rayburn, Sam (1882—), U.S. legislator, was born on Jan. 6 near Kingston, Tenn. A graduate of East Texas State Teachers college, Commerce, Tex., he studied law at the University of Texas, Austin, and began practice at Bonham, Tex. First elected to the U.S. house of representatives as a Democrat from the 4th Texas district in 1912, he took his seat on March 4, 1913; thereafter he served without interruption in the 63rd through 82nd congresses and was re-elected on Nov. 4, 1952, to the 83rd congress (1953-55). He was majority leader of the 75th congress and on Sept. 16, 1940, was elected by acclamation to succeed William B. Bankhead as speaker of the house in the 77th congress. He was re-elected speaker of the 78th and 79th congresses, was minority leader of the 80th, and again speaker of the 81st and 82nd (1949-53). Generally a supporter of the foreign policy of Pres. Franklin D. Roosevelt and Pres. Harry S. Truman, Rayburn was antipathetic to many New Deal and Fair Deal domestic measures.

As permanent chairman of the Democratic national convention at Chicago, Ill., in July 1952, Rayburn played a key role in the dispute over seating delegations from three southern states which refused to take the party "loyalty oath."

Rayon and Other Synthetic Fibres. The break in consumer demand for rayon and acetate fibres which disturbed the industry in the United States during 1951 continued to plague producers far into 1952. In April 1952 the total rayon and acetate production fell precipitously to 79,000,000 lb. from 117,000,000 lb. in Aug. 1951. By Sept. 1952, however, production had increased to 107,000,000 lb. Production of total rayon and acetate fibres utilized 86% of capacity in Sept. 1952 in contrast with only 63% of capacity in April of the same year.

Shipments of all types of rayon and acetate in the latter half



DRYING STOCKINGS over forms at the first German nylon stocking factory, newly opened in a suburb of the western sector of Berlin. The factory operated with 16 U.S. and German-made machines in 1952

of 1952 reflected the general improvement in business conditions in the textile industry. In September, shipments totalled 108,900,000 lb., an increase of 35% over April of the same year and 32% greater than the figure for Sept. 1951. Inventories, which measure production backlog, declined for the sixth month in September as shipments exceeded production in the six-month period. Inventories stood at 70,400,000 lb. at the end of Sept. 1952, substantially less than the all-time high of 119,700,000 lb. recorded in March of the same year.

The general upswing in production of rayon and acetate was no more evenly spread throughout the industry than was the downswing in mid-1951. Regular and intermediate tenacity rayon yarn production amounted to 16,800,000 lb. in Sept. 1952, an increase of 13% over the previous month but still 43% lower than output in August of the previous year. At the same time, output stood at 73% of capacity, the highest for any single month since January, and stocks continued to decline.

The recovery of acetate yarns was more impressive. Until the end of March 1952, output was only 31% of capacity. By September it had soared to 88% of estimated capacity. Third quarter production in 1952 reached 26,000,000 lb. as compared with only 14,000,000 lb. in the second quarter and 13,000,000 lb. in the first quarter.

Acetate staple and tow production declined to 4,400,000 lb. in April 1952, but by September had risen to 9,400,000 lb., or 66% of capacity. It was still, however, 19% below the Aug. 1951 figure of 11,600,000 lb.

A contrasting picture was apparent in the case of viscose high-tenacity yarn and rayon staple and tow, which in large part compensated for the general sluggishness in rayon and acetate production. Viscose high-tenacity yarn production continued at capacity levels, as did rayon staple and tow. However, neither division had been seriously affected by the market recession of mid-1951.

A comparison of United States rayon and acetate production from its earliest recorded statistics to 1952, in ten-year periods, is as follows:

United States Rayon and Acetate Production

	(In millions of pounds)					
	1911	1921	1931	1941	1951	1952 (First 9 mo.)
Filament						
Rayon	0.4	14.9	135.2	287.5	658.1	436.8
Acetate	—	0.1	15.6	163.7	300.1	159.9
Staple and tow						
Rayon	—	—	0.9	105.3	207.3	158.1
Acetate	—	—	—	16.7	128.7	69.8

The production of man-made fibres other than rayon and acetate continued its virtually unbroken upward trend. It was estimated at 124,100,000 lb. in the first half of 1952, as compared with 100,000,000 lb. in the first half of 1951. Production during the second quarter of 1952, however, totalled 60,400,000 lb., a decrease of 5% from the previous record total of 63,700,000 lb. produced in the first quarter of 1952.

Nylon held its position of pre-eminence among man-made fibres other than rayon and acetate. Demand for nylon continued to exceed production because of the increasing variety of uses discovered for nylon. Its chief use in hosiery and important uses in knitted fabrics, otherwise known as warp knit or tricot, and in woven fabrics was supplemented by the utilization of nylon to aid the U.S. defense effort, such as in the development of nylon armoured vests.

Total world production of rayon and acetate in 1952, it was estimated, would total 4,775,280,000 lb. of which 2,481,875,000 lb. was filament yarn and 2,293,405,000 lb. was staple. As compared with 3,957,470,000 lb. produced in 1951 composed of 2,119,400,000 lb. of filament yarn and 1,838,070,000 lb. of staple, 1952 estimates called for an increase of 817,810,000 lb. over 1951 production. United States, the largest rayon and acetate producer in the world, was expected to account for 44% of the filament in 1952, compared with 45% in 1951 and 50% in 1950, and 17% of the staple in 1952, compared with 18% in 1951 and 20% in 1950.

Germany, including east Germany and west Germany, was the world's second largest producer of rayon and acetate. In 1952 west German productive capacity was expected to rise to 445,000,000 lb. East Germany had a 215,000,000-lb. capacity, which placed Germany's estimated production in 1952 at 660,000,000 lb.

United Kingdom production was third in importance, following the United States and Germany. Its output of 369,400,000 lb. in 1951 was expected to rise in 1952 to 450,000,000 lb., an increase of 21.8% for the year. The United Kingdom was closely followed by Italy which had made phenomenal progress in rayon and acetate production since World War II. Italian productive capacity in 1952, it was believed, would rise to 443,000,000 lb., whereas only seven years earlier Italian production amounted to only 7,345,000 lb. France was fifth largest producer with an estimated productive capacity of 293,200,000 lb. in 1952, an increase of 28% over a capacity of 229,075,000 lb. in 1951. (See also TEXTILE INDUSTRY; WOOL.) (I. L. BL.)

Reclamation: see FORESTS; IRRIGATION; SOIL EROSION AND SOIL CONSERVATION.

Reconstruction Finance Corporation. The Reconstruction Finance Corporation was established by congress Jan. 22, 1932. Since that time its powers and duties have been periodically renewed and amended by the congress to meet changing national needs. The present statute extends its lending powers to June 30, 1954, and the life of the corporation to June 30, 1956. Its capital stock is \$100,000,000 all held by the United States.

Management and Organization.—Management and direction of the RFC is vested in an administrator and a deputy administrator, both appointed by the president, with the advice and consent of the senate. A loan policy board is composed of the following members: the administrator, as chairman; the deputy administrator, as vice-chairman; the secretary of the treasury, the secretary of commerce and the administrator of the Defense Materials Procurement agency. It establishes general policies (particularly with reference to the public interest involved in the granting and denial of applications for financial assistance by the corporation and with reference to the coordination of the functions of the corporation with other activities and problems of the government) which govern the lending operations of the corporation.

The corporation functions through a principal office at Washington, D.C., and loan agencies established in cities throughout the United States.

Functions.—The RFC is authorized by the RFC act, as amended, to make loans to business enterprises (including railroads and air carriers); to make loans to financial institutions; to subscribe for and make loans upon the nonassessable preferred stock of insurance companies and to purchase the legally issued capital notes and debentures thereof; to purchase the securities of and make loans to states, municipalities and other public agencies; and to make loans because of floods or other catastrophes.

Under the RFC act, as amended, the Defense Production act of 1950, as amended, and applicable executive orders and regulations, the corporation also makes loans (including bank participations) to business enterprises for the purpose of financing defense or essential civilian requirements. In addition, the corporation is authorized to purchase securities or to make loans (including participations therein or guarantees thereof) for the purpose of aiding in financing projects for civic defense purposes.

Other functions relate to the production of strategic and critical materials—synthetic rubber, tin and abacá (Manila hemp)—and the liquidation of certain defense plants and facilities.

Operations.—The principal lending activity of the RFC in the fiscal year 1952 consisted of loans to business enterprises (made directly or in participation with banks) for the purpose of aiding the production of goods or services necessary to meet either military requirements or essential civilian requirements. From June 30, 1951, through June 30, 1952, 2,218 applications for such loans, amounting to \$1,341,800,000, were received; and 777 loans were approved in the gross amount of \$329,600,000, including 175 for \$199,496,484 which were authorized under the provisions of section 302 of the Defense Production act of 1950, as amended. Approximately 90% of the total number of loans approved were for \$500,000 or less, and approximately 68% did not exceed \$100,000. In addition, the RFC had outstanding commitments to participate in 2,580 business loans made by banks, totalling \$74,633,000, of which the RFC's share was \$47,812,000. Other loans or purchases of obligations authorized during the fiscal year included 3,055 catastrophe loans aggregating \$21,656,382 and loans to states, municipalities and other public agencies totalling \$27,027,500.

Excluding loans approved under section 302 of the Defense Production act of 1950, as amended, at June 30, 1952, there were 5,794 business loans outstanding in the aggregate amount of \$383,885,261 of which RFC's share was \$365,651,877. In the Defense Production act category there were 101 loans outstanding for \$59,338,499. Loans and investments outstanding at June 30, 1952 (excluding Defense Production act) amounted to \$664,644,286, RFC's share.

Tin, Synthetic Rubber, and Abacá Activities.—The government-owned tin smelter at Texas City, Tex., constructed by the RFC in 1942 as a defense measure, continued in operation. In the 1952 fiscal year the RFC acquired or produced 60,184 long tons of refined tin.

Virtually all facilities for producing general-purpose synthetic rubber, known as GR-S, as well as the plants for the production of butyl, used chiefly in the manufacture of inner tubes, are government-owned and are operated for the account of the RFC. During the 1952 fiscal year, 800,000 long tons of synthetic rubber were produced, and sales amounted to \$416,000,000. As of June 30, 1952, 30 plants were in operation, representing an investment of approximately \$512,000,000.

The four abacá plantations located in Costa Rica, Guatemala, Honduras and Panamá yielded 32,041,250 lb. of fibre; 30,861,900 lb. were sold for a total of \$7,945,231 in fiscal 1952.

Liquidation Activities.—The RFC is required by law to liquidate its national defense, war and reconversion activities carried on through its subsidiaries, the Defense Plant corporation, Metals Reserve company, Rubber Reserve company, Defense Supplies corporation, U.S. Commercial company and War Damage corporation. The RFC is also responsible for liquidating the affairs of the Smaller War Plants corporation and those of the RFC Mortgage company, all the capital stock of the latter having been owned by the RFC.

During fiscal year 1952 the corporation continued the liquidation of assets acquired and liabilities incurred under terminated national defense and wartime programs. At June 30, 1952, there remained for liquidation assets at cost aggregating \$74,431,132, compared with \$89,650,643 at June 30, 1951, a decrease of \$15,219,511.

(H. A. Md.)

Red Cross. **United States.**—Disaster relief activities and services to the armed forces highlighted the work of the American Red Cross in 1952. Disaster relief operations were undertaken to aid sufferers from tornadoes in the south and flood victims in the Missouri and Mississippi river valleys. In these and in 289 other disaster relief operations from July 1951 to July 1952, the Red Cross met emergency needs and gave rehabilitation aid. Total expenditures on disaster relief and preparedness during the fiscal year 1951-52 were \$19,038,529.

With the continuing expansion of the armed forces, the Red Cross endeavored to bring its services to U.S. service men and women stationed throughout the world. Field directors were with the troops in the far east and Europe, on manoeuvres, and at all major military installations, covering smaller stations itinerantly. The extensive volunteer-based program in military hospitals continued, 95 such hospitals in the United States being served on July 1.

Except for increasing emphasis on volunteer work in all branches, Red Cross work in communities remained basically unchanged during the year. On July 1, 156 veterans hospitals were being served by extensive Red Cross volunteer programs. Chapter home service volunteer workers aiding servicemen, veterans and their families had given 1,459,000 hours to their work during 1951-52. There were 1,090,000 first aid certificates awarded as well as 813,000 certificates in the various swimming,



"MATCHBOX GAME" introduced by a Dutch soldier at a party for wounded U.N. troops. They were in a Swedish Red Cross hospital in Pusan, Kor., in 1952, and convalescents of the various nations were teaching each other parlour games popular in their own countries

lifesaving and small-craft handling courses and 255,200 certificates in the home nursing courses. Of all certificates awarded, 39% went to school and college students.

Promoted by a donor campaign undertaken by the U.S. department of defense and hundreds of national and community groups, Red Cross blood collections for defense increased, 2,440,000 pints being procured during the fiscal year. Collections for the civilian program, which supplies community hospitals with blood, continued adequate to meet needs, averaging 140,000 pints a month. A total of 18,500 units (100 c.c.) of serum albumin and 977,100 units (2 c.c.) of immune serum globulin, both blood derivatives important in the treatment of certain diseases, were distributed to state health departments.

In 83,000 schools throughout the country, Junior Red Cross members continued their community service and international understanding activities, the latter including during the year the second experimental project in recording American school music for export to schools overseas. In the 1951-52 school year, junior members packed 623,000 gift boxes for shipment to children in other lands.

On the international scene, the American Red Cross provided emergency and organizational aid to 24 other Red Cross societies, disaster aid to 7 societies, and technical and advisory assistance to 2 societies, as well as co-operating with the United Nations and its specialized agencies. The American Red Cross also participated in the 18th International Red Cross conference at Toronto, Can., in July. American Red Cross representatives helped set up the machinery for prisoner-of-war exchange in Korea, ready for operation when and if an armistice should be concluded; volunteers in the United States packed 11,000 prisoner-of-war food and medical packages that were being held ready in Korea.

(J. G. MA.)

World.—The 18th International Red Cross conference met in Toronto, Can., July 26-August 7, 1952, under the chairmanship of John Alexander MacAulay (Canada), with approximately 600 delegates and observers representing 49 governments, 55 national Red Cross and Red Crescent societies, the International Committee of the Red Cross, the League of Red Cross Societies and 30 international governmental and nongovernmental organizations. It was the largest and most representative gathering of its kind in the history of the Red Cross.

Most of the general debates centred around attacks by Communist governments against the United States for alleged bac-

teriological warfare in Korea and against the I.C.R.C. for alleged lack of impartiality. In March the United States government had invited the I.C.R.C. to investigate such charges and the I.C.R.C. had accepted, provided the North Korean government would permit entry of neutral teams of experts, which it refused. Resolutions finally adopted by the conference included: an appeal to governments to ratify the Geneva Conventions of 1949 (only 19 had done so) and the Geneva protocol of June 17, 1925, prohibiting bacteriological weapons, and to agree, within the framework of general disarmament, to a plan for the international control of atomic energy; an invitation to the governments involved in the Korean conflict to examine charges of alleged violations of the Geneva Conventions on the basis of a common agreement; an appeal to the North Koreans and Chinese to permit the I.C.R.C. to inspect prisoner-of-war camps in North Korea as it had inspected United Nations prisoner-of-war camps in South Korea since the start of the conflict; reaffirmation of the fundamental principles of the Red Cross, *i.e.*, impartiality, political, racial, religious and economic independence, universality of the Red Cross and equal rights of national societies; legal assistance to refugees; mutual assistance in case of national disasters; contributions toward famine relief; standardization of medical equipment; education of youth in the spirit of international fraternity, solidarity and the maintenance of peace.

Revised statutes of the International Red Cross and regulations of the International Red Cross conference, proposed by a subcommission of the Standing Commission of the International Red Cross after a two-year study, were adopted by a majority vote over opposition of the Communist bloc, which would have shorn the I.C.R.C. of its authority as a neutral intermediary. Political debates in future International Red Cross conferences were prohibited under the new regulations.

An invitation from the Indian Red Cross to hold the 19th International Red Cross conference in New Delhi in 1956 was accepted.

Elected as new members to the League of Red Cross Societies were the Red Cross societies of Ceylon, San Marino and the Federal Republic of Germany, bringing total league membership to 71 national societies, grouping more than 100,000,000 individual members.

In his report, the secretary general of the league, Count Bonabes de Rouge, stated that mutual assistance between national societies during the preceding two years was valued at \$10,000,000.

(H. W. DG.)

Reforestation: *see* FORESTS.

Reformed Church: *see* PRESBYTERIAN CHURCH.

Refugees. The liquidation of the International Refugee organization in the early months of 1952 signalled the end of mass movements of refugees out of Europe. During its lifetime of 4½ years of service to refugees in Europe the organization, a specialized agency of the United Nations, had provided care and maintenance for more than 1,000,000 refugees in camps in Europe, repatriated 72,834 to their countries of origin (chiefly in eastern Europe) and had moved 1,038,750 in resettlement to Argentina, Australia, Brazil, Canada, Chile, the United States, Venezuela and other countries. Eighteen member governments—Australia, Belgium, Canada, China, Denmark, the Dominican Republic, France, Guatemala, Iceland, Italy, Luxembourg, the Netherlands, Norway, New Zealand, Switzerland, the United Kingdom, the United States and Venezuela—had contributed \$406,867,295 to these efforts.

On terminating its operations on Jan. 31, 1952, the organization turned over 12,205 refugees for movement to the Provi-

ional Intergovernmental Committee for the Movement of Migrants from Europe, which had been organized at a conference on migration convened by the government of Belgium at Brussels in Nov.-Dec. 1951. This committee, starting with a membership of 15 governments, undertook the task of moving migrants from overpopulated countries in Europe and refugees to countries of immigration overseas. Capitalizing on the experience developed by the International Refugee organization and utilizing its ships and trained personnel, the committee maintained the previous volume of monthly movement out of Europe until July 1952, when changes in the immigration policies of the main receiving countries—Australia, Canada and the United States—resulted in a reduction in the flow of migrants out of Europe.

Contributing to this development was the final expiration of the United States Displaced Persons act of 1948, amended in 1950 and 1951, under which more than 340,000 refugees and displaced persons had been admitted from Europe to the United States. In Australia the development of unemployment and the reduction of government expenditures were accompanied in June by a cabinet decision to reduce the original quota of immigration for 1952 from 160,000 to 80,000. Canada likewise reduced its intake of immigrants for economic and political reasons.

In spite of these developments the Migration committee had succeeded by Sept. 1952 in moving 62,808 persons out of Europe. Included in this figure were 23,876 refugees. It was anticipated at the fourth session of the committee held in Geneva in October that more than 100,000 migrants and refugees would be moved out of Europe by the end of the year.

The committee was provisionally organized to conduct movement for one year in order to test the form of organization, its method of financing and the need for its services. At its fourth session the membership had grown to 21 governments—Australia, Austria, Belgium, Bolivia, Brazil, Canada, Chile, Denmark, France, Germany, Greece, Israel, Italy, Luxembourg, the Netherlands, Norway, Paraguay, Sweden, Switzerland, the United States and Venezuela. A unanimous decision was reached to continue the activities of the committee during 1953 and to expand its services closely related to the movement of migrants as provided in the resolution adopted at Brussels in 1951. The name of the committee was changed to the Intergovernmental Committee for European Migration.

Of the 62,808 migrants moved between Feb. 1 and Sept. 30, 1952, 34,578 came from Germany, 10,375 from Austria, 7,451 from the Netherlands, 6,011 from Italy, 753 from Trieste, 126 from Greece, 600 from the far east and 2,914 from other countries. The United States received 36,618 of the total, chiefly ethnic Germans from Germany and Austria; Australia, 10,702; Canada, 7,295; Brazil, 5,365; Venezuela, 627; Chile, 563; and Israel, 264. Hugh Gibson of the United States was elected director of the committee at its session in Washington in July 1952.

In Aug. 1952 Pres. Harry S. Truman appointed a six-man commission to study and review proposals for immigration legislation and to report its findings to him by Jan. 1, 1953. The McCarran-Walter act adopted by the congress in the spring of 1952, which codified existing United States immigration laws and retained the principle of national origins as a basis for establishing annual quotas of immigrants admissible to the United States, came under severe criticism during the presidential campaign in the fall of 1952 on the grounds that it discriminated against certain classes of immigrants and failed to give expression to United States interests in the problems of overpopulation and refugees in Europe because of its over-all restrictive features.

The office of the United Nations high commissioner for refugees was established at Geneva by the general assembly of the

United Nations on Dec. 14, 1950. G. J. van Heuven Goedhart, the Netherlands, was elected high commissioner for a three-year term. This office took over from the International Refugee organization the function of providing international legal protection for refugees until they acquire a new nationality. The office was also charged with the task of finding final solutions for the problems of refugees.

The general assembly of the United Nations at its sixth session in Paris in Jan. 1952 voted a budget for the office of \$718,000 for 1952 and adopted resolution 538B(VI) which authorized the high commissioner to appeal for \$3,000,000 in funds for the emergency relief of refugees under his mandate.

The high commissioner reported on Nov. 19, 1952, that he had received contributions and pledges totalling \$760,000 to the refugee emergency fund and had allocated all the funds received. The sum of \$650,000 had been spent or allocated for the needs of 4,500 refugees among the 7,500 European refugees still seeking opportunities for emigration from Shanghai. The balance had been allocated to meet the needs of refugees in Austria, Belgium, Germany, Greece, Italy and the near east.

Apart from the refugee emergency fund, the Ford foundation made a grant of \$2,900,000 in Aug. 1952 to be administered by the high commissioner to assist the integration and establishment of refugees in their countries of residence. Emphasis was to be placed in the use of the fund on efforts to assist the assimilation of refugees through youth educational and cultural activities. No restrictions were placed on the categories of refugees to be benefited by the fund.

The flow of German refugees from east Germany to west Germany through Berlin continued during 1952 at a rate of 15,000 monthly. A total of 250,000 had arrived in Berlin in 1951. This constant influx intensified the serious problems of unemployment and housing in western Germany. During the height of the movement in midyear, emergency efforts to absorb the refugees in western Germany failed to keep pace with the influx into Berlin.

The numbers of eastern European refugees entering Austria, Germany, Greece, Italy, Turkey and Trieste were smaller during 1952 than in previous years, because of tighter controls placed on the borders by the eastern European countries. On March 22, 1952, President Truman announced the initiation of a new effort of the United States government to assist these refugees under the provisions of the Mutual Security act of 1951. The stated objectives of the program, to be administered by the department of state, were to establish better facilities of reception for these refugees in the countries of first asylum, to supplement the care and maintenance already provided by those countries and by voluntary agencies, and to assist the new refugees either to emigrate abroad or to re-establish themselves in Europe.

United Nations efforts to resolve the problem of approximately 875,000 Arab refugees in Lebanon, Jordan, Syria, Gaza and Israel, resulting from the conflict in Palestine in 1948, continued during 1952. Emphasis continued to be given to the gradual reduction of direct relief expenditures in favour of the progressive development of projects which would result in the permanent integration of the refugees into the communities in which they might be settled. (See also IMMIGRATION AND EMIGRATION.)

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Relay Racing: see TRACK AND FIELD SPORTS.

Relief: *see* COMMUNITY CHEST; RED CROSS; SOCIAL SECURITY. *See* also the articles on the various states.

Religion. World meetings of several confessions were held during 1952. The Disciples fourth world gathering met in Melbourne, Austr.; the Lutherans sent 5,000 delegates to their World Federation at Hanover, Ger.; the Mennonites met in Basle, Switz.; the Quakers in Oxford, Eng.; and the Roman Catholics held their first International Eucharistic congress since World War II in Barcelona, Sp.

In China, Communists confiscated Confucian, Buddhist and Taoist temples, ousting priests. Mohammedans and Christians suffered in lesser proportions. With the elimination of foreign missionaries, some of whom were killed and many of whom were imprisoned, the persons most persecuted were those closely identified with them. Chinese independent churches were not seriously molested. Some thought that this was an indication of political rather than religious motives for the antireligious movement. Although greatly reduced, the Christians, both Catholic and non-Catholic, continued to carry on worship.

Accelerated widespread persecution of the clergy and laity wherever communism prevailed showed a pattern suggesting eventual nationalization of the church in "iron curtain" lands. Within Roman Catholic areas behind the curtain, 11,000 priests and 50,000,000 members were listed with 89 out of 284 sees vacant through imprisonment, expulsion or death of former incumbents.

In India, popular attention shifted from religion to social and economic problems. Indian churches showed increased concern for missions in neighbouring lands, the North India United Church promoting work in East Africa and the South India United Church enlarging its work in Papua. The Mar Toma Church planned to work in Nepal. Native states formerly closed were opened to missionary effort; but the rush of missionaries disturbed the government and a temporary stay in the granting of visas resulted.

In Korea, church work continued and large numbers of Communists, both Korean and Chinese, accepted Christianity and held vast dawn prayer meetings in Koje and other prison camps. Thus appeared the most significant movement anywhere of Communists toward Christianity. It underscored the desires of converts not to be returned to Communist hands.

In the Philippines, Trinitarians won a court appeal. Their bishop was declared legitimate supreme head of the largest native church, formerly Roman Catholic and later Unitarian.

In Australia a six-month Christian mission led by Methodists but also open to others was begun in September.

The United Nations high commissioner for refugees received a large grant from the Ford foundation and allocated it to religious agencies—the Jewish Joint Distribution committee, the Friends Service committee, the National Catholic Welfare conference and the World Council of Churches. Most of these had long been resettling refugees and had cared for many hundreds of thousands through church and synagogue activity.

During the German Catholic congress in Berlin, attended by 200,000, the Evangelical bishop, Otto Dibelius, welcomed the Roman archbishop of Munich to his home and opened the largest Protestant churches when Communist officials refused use of public halls. The final Berlin gathering met in the Olympic stadium and applauded Pastor Kreysing, Evangelical leader, when he declared that it was not mere accident that Catholics and Protestants had met under the shadow of the same 80-ft. cross that had been erected for the 1951 Berlin *Kirchentag* which rallied more than 300,000 Protestants. In the Saxony Bautzen cathedral, Catholics and Protestants both worshipped regularly.

This was in pleasing contrast to the attacks upon Protestants

by Catholic leaders in Spain. An outburst in Italy against Evangelicals was quickly ended but the "Osservatore Romano" subsequently officially reiterated a repudiation of religious freedom in Italy and claimed benefit of the discriminatory clauses of the "Lateran treaty."

The Turkish government granted permission to the nation's Jews to elect a new chief rabbi, reversing an 18-year ban.

An important study featured the North American Assembly on African Affairs at Wittenberg college, Springfield, O., under the auspices of the National Council of Churches. Many government officials as well as church representatives attended and joined in recommendations for improving conditions of the African peoples.

A survey of the distribution of missionaries from North America showed that of the 15,000 in service, an all-time high, 25% were in Africa, 25% in Latin America, 21% in east Asia, 14% in India, Ceylon and Pakistan, 7% in southeast Asia, 5% in the near east and 3% in the Pacific Islands. There were 5,000 Roman Catholic missionaries from the U.S.

Church membership in the U.S. continued to climb to all-time highs, both in actual numbers and in percentage ratio, which reached 62% of the population.

In New York state the Board of Regents, convinced of "the fundamental American belief in and dependence upon God," argued for the use of prayer in its public schools, and specified the text of a prayer approved by Protestants, Roman Catholics and Jews, *i.e.*, "Almighty God, we acknowledge our dependence upon Thee, and we beg Thy blessings upon us, our parents, our teachers and our country."

The United Church of Canada launched a radio mission similar to one conducted by the Church of Scotland. It began in September and was to continue for eight months. The Scottish assembly approved as religiously right the principle that the mother's life is more important than that of an unborn child.

The Scandinavian diaconate staffed a civilian hospital in Korea. Wide use of the film "King of Kings" was reported from Korea, where the interest of people in Christianity was at an all-time high.

In September the mothers general of religious orders for women met at Rome for an unprecedented re-examination of their discipline, procedure, dress and function. The Vatican's international commission on immigration under James Norris, a U.S. layman, revealed the grave concern of Catholics over immigration as a solution to Europe's tensions.

Pope Pius XII urged a world-wide Catholic crusade for return to Christ, and set up an organizational structure to initiate the movement.

(*See* also CHRISTIAN UNITY; CHURCH MEMBERSHIP; MISSIONS, FOREIGN [RELIGIOUS]; also under separate denominations.)

(H. S. LR.)

Religious Denominations: *see* CHURCH MEMBERSHIP.

Religious Education. Protestant and Orthodox.—In Feb. 1952, the United Christian youth movement in the United States reached the climax of its plans for what it termed "the Call." One of the goals was the enrolment of 1,000,000 young people in deeper Christian consecration. Although the goals were not achieved, it was declared that the favourable influence for interdenominational youth work in hundreds of local communities would be felt for many years to come.

The board of managers of the World Council of Christian Education and Sunday School association met in London, Eng., in July. Among the numerous matters considered were the reports of the two administrative committees.



RALLY in Washington, D.C., celebrating completion of the Revised Standard Version of the Holy Bible (R.S.V.), a new translation authorized by 40 Protestant and Eastern Orthodox denominations and published in 1952

The secretary of the British administrative committee had spent three months in India studying the situation in respect to the India Sunday School union and seeking to enlist added interest and support from the churches for the union.

The North American administrative committee reported that it had adopted a program for the years 1952-56. The stated purposes were as follows: (1) To aid in deepening and widening the concern of the principal Christian leaders for effective Christian education for children, for young people and for adults; (2) to stimulate and aid in the establishment of such nation-wide denominational and interdenominational organizations as were needed; (3) to aid the denominational and interdenominational organizations and leaders serving each country in their major tasks of Christian education; (4) to unite these denominational and interdenominational leaders in Christian education in world-wide fellowship, to encourage and enable them to draw from and contribute to that fellowship the fullest measure of inspiration and help, and always to see their individual responsibilities as part of the world-wide enterprise of education in the Christian faith and life. Six aspects and emphases were listed: (1) The foundations of Christian education; (2) the Christian education of all age groups; (3) Christian education in all institutions, including the church, the Christian home and the Christian school; (4) the preparation of suitable curriculum materials; (5) the development of adequate programs to prepare persons for service in Christian education; (6) education in the ecumenical ideal. Six channels of service were named: Publications, regional and world meetings, field visitation, correspondence, financial grants, and other organizations.

One of the most tangible and popular services which this council had under way was known as "Pictures for Children Everywhere." Thousands of Sunday schools and other agencies of Christian education had no Bible pictures at all. Through the efforts of denominational leaders of children's work in the United States and Canada, money was collected from children for purchasing pictures to send abroad. The World Council of

Christian Education was thus enabled to distribute more than 527,000 coloured Old and New Testament pictures for classroom use and more than 3,700,000 small pictures for the children. These were sent to more than 81 countries. (F. L. KP.)

Roman Catholic.—In 1952 there were 8,358 elementary parochial schools instructing 2,692,706 children, and 531 private elementary schools taught 84,151. The enrolments in 1,623 parish and diocesan high schools numbered 353,465, while 818 private high schools taught 205,025 pupils. 8,962 seminarians attended 73 diocesan seminaries, and 5,159 diocesan students studied at other seminaries. 351 religious-order seminaries or scholasticates had a student body of 16,867. There were 204,937 students in Catholic colleges and universities.

Sixteen Catholic school systems and 47 Catholic colleges or universities filed letters of intent with the Federal Communications commission for use of one of the 242 television stations assigned for noncommercial purposes.

Archbishop Joseph E. Ritter of St. Louis was elected the new president general of the National Catholic Educational association at the annual convention held in Kansas City, Mo. The theme of the convention was "Catholic Education and the American Community." Resolutions adopted at the convention stressed the following points: (1) Recent events have sharpened the community's awareness that all its activities, social, economic and political, should be guided by moral principles, the knowledge and practices of which must be developed in youth. (2) A community which understands its democratic heritage must recognize in its traditions an educational diversity that has fostered in our culture a living unity and not a dead uniformity. (3) Catholic schools should strengthen their desire to know and to meet the concrete needs of the community and fully to prepare themselves for the rapidly expanding school population.

The National Council of Catholic Men inaugurated a film information service to review and catalogue all 16-mm. religious films suitable for Catholic use in parishes and schools or on television. (J. LAF.)

Jewish.—The annual reports of the Jewish educational institutions in the U.S. indicated increased registration. Whether this represented heightened interest in Jewish values or was merely

the result of the growth in population was an unanswered question. Improved textbooks and educational aids continued to be produced in quantity for elementary and intermediary schools. The establishment of a new department of audio-visual aids by the Union of American Hebrew Congregations was an instance of such progress. Similarly, the number of all-day schools had multiplied and enrolment had increased.

A venture of great promise was that which the liberal wing of Jewry initiated at their newly acquired camp on Lac La Belle, Oconomowoc, Wis. Groups of youngsters and, at different times, older persons were afforded the opportunity of a week or two weeks' visit to the camp. A program of physical recreation, Jewish education and periods of worship and silent meditation was available. The adult program was not confined to the summer only, but included week-end retreats throughout the year.

In Israel, the concern for proper education of the children of new and old settlers continued to be of importance, equal to the problems of providing an adequate food supply for the growing population and the plan to irrigate the Negev. The compulsory education law had been accepted by even the Arab minority: 27,000 Arab children were enrolled in government schools and about 4,500 in mission schools. The increased attendance in public schools had overtaken the availability of quarters and teachers. (See also EDUCATION; LAW.) (B. H.)

Remón, José Antonio (1908–), Panamanian political leader, was born on June 1. Entering politics at an early age, he became national chief of police and by 1949 was the "strong man" of Panamá. In that year he forced the resignation of Pres. Daniel Chánis, Jr., despite a decision by the nation's supreme court affirming Chánis' legal right to the office. Again on May 10, 1951, Remón overthrew the administration of Arnulfo Arias Madrid and installed Alcibiades Arosemena in the presidency. In 1951 Remón himself campaigned for the presidency as the candidate of a national five-party coalition. In elections held May 11, 1952, Remón was elected by a large majority, receiving the largest number of votes in the nation's history. He took office as president on Oct. 1, 1952, for a four-year term.

Rent Stabilization, Office of. Extension of federal rent ceilings and protections against unjust evictions to approximately 150 critical defense housing areas in 45 states and Alaska, in addition to normal housing areas already under control, proved the principal development in the war against inflation on the rental front in the United States during 1952.

In the critical areas, rent levels applied to every type of housing rented for shelter, while in the normal or limited areas, hotels, motels, trailer courts and housing constructed or converted for rental after Feb. 1, 1947, were exempt. Approximately 5,500,000 people were living in controlled units in the critical areas and 13,800,000 people in controlled units in the normal areas.

The federal program, administered by the Office of Rent Stabilization, was in effect in every state except New York (which had its own rent control program) and in Alaska and Puerto Rico.

The critical areas were jointly certified as such by the secretary of defense and the director of the Office of Defense Mobilization after the federal Critical Areas Advisory committee decided a substantial influx of servicemen or defense workers into each locality had caused acute housing shortages and sharp rent increases.

James McInness Henderson became director of the Office of Rent Stabilization on Sept. 1, 1952. Two months before Hender-

son took office, the 82nd congress amended the Housing and Rent act to require local governing bodies in the normal or limited rental areas to decide by Sept. 30 whether they wished the federal rent program continued until April 30, 1953. Federal rent levels and eviction protections were to end on Oct. 1 in all normal or limited localities failing to request continuance. The program was to continue until April 30 in all critical areas then in existence and all critical areas to be created in the future.

Of 116 cities in continental United States of more than 50,000 population already under federal rent stabilization, 71 asked continuance. The rent program remained in such major cities as Chicago, Philadelphia, Pittsburgh, Boston, St. Louis, Newark, Jersey City, Camden, Cincinnati, Cleveland, St. Paul, Minneapolis, Duluth, Memphis and San Francisco.

Congress also removed the power of local governing bodies to re-control themselves, and it provided for public hearings conducted by the Office of Rent Stabilization in newly certified critical areas which had previously been decontrolled by action of the local governing body.

The membership of rent advisory boards, made up of unpaid residents in each controlled area who had volunteered their services, rose to 2,790 during the year. The number of active rent advisory boards reached 433 with 143 being located in critical and 290 in normal areas. The rent advisory boards gave equal representation to landlords and to tenants but the balance of power numerically was always held by members who represented the general public. All were appointed by the Office of Rent Stabilization from nominees suggested by the governors of the various states.

Landlords or tenants dissatisfied with area rent office decisions on individual rentals could ask their rent advisory board for a review. In addition, the rent advisory boards had the power to recommend any changes needed in the rent program in their localities, as well as to recommend decontrol of all or part of the rental units included in the program. (See also HOUSING; LAW.) (J. McI. H.)

Representatives, House of: see CONGRESS, UNITED STATES; ELECTIONS, U.S.

Republican Party: see POLITICAL PARTIES, U.S.

Research Libraries, Association of: see SOCIETIES AND ASSOCIATIONS, U.S.

Resins: see PLASTICS INDUSTRY.

Respiratory Diseases. The machinery set up by the World Health organization to study and cope with influenza epidemics had worked quite effectively. Epidemics wherever they occurred and were studied during 1952 were caused by a strain of virus that was closely related to the type B influenza virus. The year saw the first widespread epidemic of influenza B infection since 1945-46. This epidemic was not a serious one by the usual standards of influenza epidemics, at least with respect to mortality, and the morbidity rates were relatively low as pandemics go.

In the treatment of pneumonia with antibiotics, a number of studies were designed primarily to evaluate the relative effectiveness of the antibiotics which were generally available. Some of the studies were carried out under the auspices of the Medical Research council of Great Britain and others were conducted in the United States. The British were interested primarily in determining whether the so-called broad-spectrum antibiotics, namely aureomycin and chloramphenicol (Chloromycetin), are really sufficiently advantageous compared with what they termed the "standard" treatment, that is, penicillin and the sulfa drugs, to warrant the general use of the former in preference to the latter.

The broad-spectrum antibiotics are probably more expensive to produce than penicillin, and the sulfa drugs relatively are much cheaper. The great difficulty for the British, however, was not out of the fact that, whereas the patent rights for the drugs are held by United States manufacturers and must, therefore, be paid for in dollars which the British do not have, the Americans have no such problem with penicillin and the sulfa drugs since they can produce competitively. The U.S. investigators were interested, in part, in determining the relative efficacy of the different drugs. However, they also set out to determine whether much smaller doses of the broad-spectrum antibiotics than those generally employed would prove equally effective and would thus be more economical and perhaps produce less of the undesirable toxic effects.

The consensus seemed to indicate that penicillin is as effective for the great majority of cases of pneumonia as aureomycin or chloramphenicol. The British workers, who used relatively larger doses of the more expensive agents, found the cost of the average case to be about ten times as high for aureomycin and nine times as high for chloramphenicol as when penicillin was used. The U.S. investigators used about one-fourth to one-fifth as much aureomycin and chloramphenicol as did the British and obtained comparable beneficial effects, so that the differences in cost were not so striking. Moreover, the British found that the large doses of aureomycin and chloramphenicol which they used produced toxic effects more frequently and of greater severity than did the penicillin. The U.S. physicians, on the other hand, found that the toxic effects from the small effective dose which they employed were infrequent and of little importance.

In the British studies the sulfa drugs could not be evaluated since the collaborating physicians chose to use them so infrequently that there were not enough cases for comparison; they obviously preferred penicillin for their "standard" or "control" therapy. Moreover, the British study was not sufficiently extensive to produce a complete answer; the great majority of their cases were pneumococcal pneumonias which could be expected to respond equally well to all of the drugs they were testing. The study did not include a sufficient number of pneumonias arising from organisms which had been found to respond only to the broad-spectrum antibiotics and on which penicillin and the sulfa drugs are generally conceded to produce no beneficial effect. Indeed, the data in all of the studies were insufficient to give as any indication of the relative value of the various drugs with respect to pneumonias other than the most common ones, namely, those caused by the pneumococcus.

There were no developments of major significance in the field of nonbacterial ("viral") pneumonias. The status of the antibiotic treatment of cases of primary atypical pneumonia, which constitutes the bulk of the nonbacterial pneumonias, was brought up to date in a critical review. While uniformly favourable results were reported from large general hospitals in which the experience was primarily with patients of moderate or greater severity, a few reports, some of them in so-called "controlled" series, suggested that antibiotics were not having any significant effect on the course of this disease. Careful scrutiny of these reports indicated that the difficulty arose from the fact that mild cases, which are difficult to differentiate from the common colds or similar common upper respiratory tract infections, were involved in those groups of cases where the results are difficult to interpret. In cases of moderate or greater severity, the best evidence indicated that aureomycin is highly effective in primary atypical pneumonia and that terramycin is equally effective.

No sulfonamide or antibiotic agent thus far used or tested had any influence of importance on influenza, the common cold

and other simple, acute respiratory diseases. The importance of this group of infections lies in the fact that they predispose to serious pneumonias.

More cases of Q fever were constantly being recognized, particularly throughout European countries, and the disease was also being recognized in many new areas where it had not previously been known. There were several reports of the treatment of small numbers of cases of Q fever with aureomycin and terramycin, all of which indicated favourable responses. The results of the largest group to be studied carefully, the one from California, indicated that there was a small residual of cases of Q fever in which continued treatment even with large doses failed to bring about termination of the acute disease, and fever and even the presence of the invading rickettsia in the blood could still be demonstrated in spite of this therapy.

During the year a new and promising antibiotic, called erythromycin, was introduced by the workers in the Lilly Research laboratories under the trade name "Ilotycin." This antibiotic was highly effective, in test tube experiments, against a variety of bacteria which may cause pneumonia, notably the pneumococcus, the hemolytic streptococcus and the staphylococcus; it was moderately effective against some other bacteria, like diphtheria bacillus and the influenza bacillus and the causative organism of whooping cough; but it was essentially without effect against a large variety of other bacteria, particularly those involved in infections of the gastrointestinal or urinary tract. On the whole, the activity of this drug was very similar to that of penicillin rather than that of aureomycin or terramycin. The discoverers also claimed that it was effective against rickettsias and against some viruslike organisms such as those which cause psittacosis; just how effective it would prove to be against these nonbacterial micro-organisms remained to be determined.

The effectiveness of erythromycin against the staphylococcus in the test tube was of particular interest, since strains of this organism which had been isolated in many hospitals had proved quite resistant to penicillin and often to all other available drugs. Resistant staphylococci were also being encountered with increasing frequency as the cause of complicating infections in patients who had been treated, apparently with success, for infections caused by other organisms, such as the pneumococcal and urinary tract infections.

The importance of the staphylococcus as a potentially serious complicating factor in pneumonia caused by other organisms was well illustrated in two series of cases reported from the Boston City hospital in which a broad-spectrum antibiotic, terramycin, was used. In a series of 91 patients with pneumonia treated at that hospital, the bacteriological results and the immediate clinical effects indicated that terramycin was highly effective against pneumococcal pneumonia. In most of the other pneumonias in which the etiology was proved or suspected and in some cases of primary atypical pneumonia, the immediate effects of terramycin therapy were also favourable. However, the replacement of the flora of the sputum by staphylococci and the slow clearing of the lungs and the recurrence and persistence of other evidences of infection indicated that the beneficial effects of terramycin were in part vitiated in many of these patients by superinfections with the staphylococcus. A similar experience was reported from that hospital in a second series of patients treated with terramycin for urinary tract infections in which staphylococci were not often originally involved, but might invade the lungs during terramycin therapy.

Diarrhoea resulting from the terramycin occurred frequently and in many patients was quite severe. In many of the patients with terramycin-induced diarrhoea, the bacteria in the bowels were replaced by pathogenic staphylococci, and these staphylococcal infections of the gastrointestinal tract added considerably

to the morbidity of the patients who recovered. In five of the seven pneumonia patients who died, the toxic effect of the terramycin on the gastrointestinal tract may have contributed in a large measure to the fatal outcome, and staphylococci played an important role in the lungs of four of these patients. Moreover, in an extensive survey of staphylococci at the Boston City hospital, it was shown that the incidence of staphylococci that are sensitive to the available agents had been steadily decreasing.

For these reasons the new antibiotic, erythromycin, seemed worthy of study. The results of some experiences with the use of erythromycin in the treatment of small numbers of patients with various infections had already been published. These reports indicated that in patients with pneumonia or hemolytic streptococcal sore throats, the effects were dramatic and comparable in every respect with those obtained with penicillin or aureomycin. The bacteria, however, persisted somewhat longer with erythromycin than with penicillin. In the treatment of staphylococcal infections, the results unfortunately were not uniformly favourable. The failures in two serious cases of infection of the heart valve with staphylococcus were shown to be due to the fact that the bacteria became resistant to the antibiotic during treatment. In infections of the heart valves with streptococcus, there were failures that were likewise shown to be due to the development of resistance by the streptococci to erythromycin during treatment with that agent.

Erythromycin was well tolerated by patients and serious side effects had not yet been observed. What the ultimate place of erythromycin would be in the treatment of pneumonia or other infectious diseases remained to be determined by the results of further experience.

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Retail Sales: see BUSINESS REVIEW.

Réunion. This island in the Indian ocean about 420 mi. E. of Madagascar is a French overseas *département*. Area: 970 sq.mi. Pop.: (1946 census) 242,067 (97% French subjects); (1951 est.) 258,000. The inhabitants are mainly coloured (French creoles, Negroes, mulattoes, Indians and Chinese). Language: creole French. Religion: mainly Roman Catholic. Chief towns (pop., 1950 est.): Saint-Denis (cap., 39,057); Saint-Paul (27,585); Saint-Pierre (24,652); Saint-Louis (23,925). Prefect in 1952: Pierre Philippe.

History.—After Réunion became a *département* in 1946, most of its affairs were dealt with in Paris. This gave rise to delays, against which the general council made a protest by refusing to sit for a time during 1952.

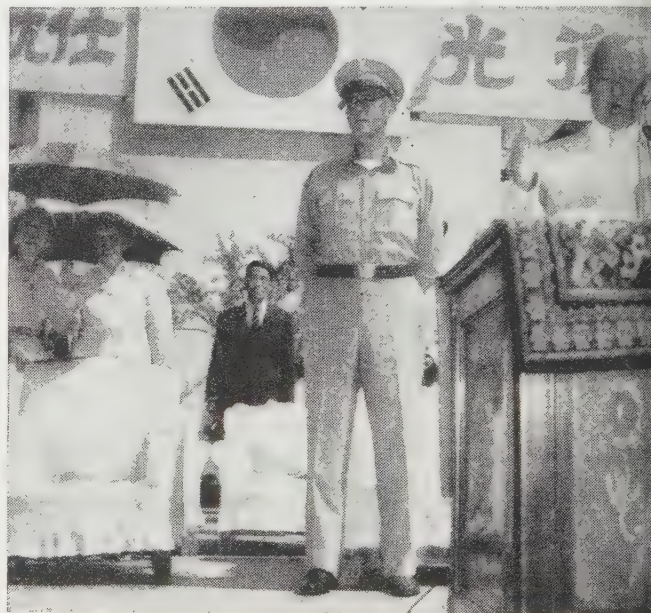
It was decided that planters and factory owners should henceforth meet in a consultative commission on agriculture, which would propose prices while the sugar-cane industry was being revived. The 13 sugar factories, each of which had its own distillery, were financed by the local banks. The price at which the island's sugar could be sold in France was still higher than that of beet sugar. Réunion consumed 20,000 hl. of rum and exported 60,000 hl.

A cold storage plant for fish was opened at the port by the Société de Pêche Malgache et Réunionnaise.

Education.—Nearly all children of school age go to school. There are two lycées.

Finance and Foreign Trade.—(1951) Imports 5,808,000,000 fr. C. F. A. (incl. 5,100,000,000 fr. C. F. A. from the French union); exports 4,500,000,000 fr. C. F. A. (incl. 4,300,000,000 fr. C. F. A. to the French union), mainly sugar (3,150,000,000 fr. C. F. A.), vegetable oils (77,000,000 fr. C. F. A.), rum (500,000,000 fr. C. F. A.). Monetary unit: franc C. F. A. (Colonies Françaises d'Afrique)=2 metropolitan francs. U.S. \$1=350 metropolitan francs. (Hu. De.)

Rhee, Syngman (1875–), Korean political leader. He was born on April 26 in Whanghai province, Korea. He received a classical Chinese education and then enrolled in a Methodist mission school in Seoul. Attracted to the ideals of democracy, he joined an independence club in 18



SYNGMAN RHEE delivering his inauguration address in Seoul, Aug. 15, 1948, after the first presidential election by popular vote in the Republic of South Korea. At left are Mrs. Mark Clark and Mrs. Rhee (holding umbrella). Gen. Mark Clark (foreground)

and founded the *Independent*, Korea's first daily newspaper. In 1897 he led a mass demonstration of students against the Japanese, was arrested and sentenced to life imprisonment, but was freed in a general amnesty in 1904. Meanwhile he had become a Christian convert and while in prison had written a book, *Spirit of Independence*. He went to the United States, studied at Harvard and Princeton, and returned to Korea in 1910 to organize resistance to the Japanese occupation. Discovered, he fled to Hawaii where he directed the Korean Christian institute until 1939. On March 1, 1919, a group of Korean patriots he signed a declaration of independence, set up an exile government in Shanghai, China, and elected Rhee president. He was regularly re-elected until 1941.

To win U.S. recognition of Korean independence claims, he went to Washington, D.C., during World War II. In 1945 he returned to Korea and was elected first president of the Republic of Korea July 20, 1948.

Rhee was the centre of a political storm with repercussions

the United States during 1952 when he clashed with his opinion in the national assembly over presidential election procedures. After he had declared martial law and arrested 12 of his opponents in the assembly late in May, President Truman sent him a message of protest. The dispute was settled on July 4 when Rhee agreed to hold a popular election and establish a unicameral legislature. He was re-elected Aug. 5 by an approximate 3-to-1 margin, and was inaugurated on Aug. 15 for a second four-year term.

Rheumatic Diseases. A significant decline in the incidence of infectious arthritis had occurred during the past decade. This was attributed to the generally effective use of antibiotics or chemotherapy to prevent and quickly suppress systemic infections, following which most instances of infectious arthritis occur as a complication. When encountered, supplemental appropriate antibiotic therapy usually promptly suppresses the arthritis caused by joint infection. Sometimes intra-articular installation of antibiotics aids markedly. During 1952, tuberculous infection of the joint, although benefited significantly by streptomycin, was more effectively suppressed by the combined use of one of the isonicotinic acid preparations. The latter alone was effective in some cases.

Among the forms of rheumatism, the greatest challenges to the patient, the physician and the investigator continued to be rheumatoid arthritis, osteoarthritis and rheumatic fever. Additional reports gave further support to the belief that cortisone and corticotropin (ACTH) as treatment for these illnesses were of limited usefulness. Prolonged use of these hormones in patients with rheumatoid arthritis failed to cure the disease, and little benefit resulted from the temporary suppression of activity of the disease and in palliation of symptoms. In properly selected instances, however, the use of cortisone for these purposes seemed wise. Routine use of cortisone for patients with rheumatoid arthritis was not considered wise because of therapeutic limitations and the potential complications arising from the nonantirheumatic effects of the hormone. Although improvements in prolonged-acting preparations of corticotropin were made during the year, the treatment of a chronic illness with this hormone was considered less practical than with an orally administered hormone.

Although often helpful in relieving pain in patients with osteoarthritis, cortisone or corticotropin used systemically were considered generally unsatisfactory.

An interesting development concerning treatment of rheumatic fever was the preliminary report of a co-operative study by a committee of investigators from Great Britain, Canada and the United States which indicated that, as the study was conducted (no individualization of treatment), results were essentially the same with salicylates, cortisone and corticotropin.

It was believed that a longer time for observation and some special studies would be needed before final evaluation of these forms of treatment for rheumatic fever could be made.

Patients with one of the diffuse collagen diseases, which include diffuse lupus erythematosus, polyarteritis such as pericarditis nodosa, scleroderma and angioneurodermatomyositis, had a much better prognosis since cortisone and corticotropin became available. As a group these illnesses could be well controlled and, although not cured, many patients were kept comfortable and their lives were prolonged by these hormones. Much progress was made in the diagnosis of diffuse lupus erythematosus by employment of the "L. E. phenomenon," by means of which recognition of the disease was made more certain by demonstration of a particular type of alteration of

cells in blood or bone marrow.

The use of hydrocortisone (the free alcohol, not the acetate salt) was studied in patients with rheumatoid arthritis, and preliminary reports suggested that this steroid had greater antirheumatic effects in proportion to other properties, so that smaller doses would suffice and fewer complications develop. Continued use of hydrocortisone acetate injected intra-articularly indicated that in well-selected cases this form of treatment was practical.

As a group, the patients with osteoarthritis were seldom helped sufficiently by intra-articular injections of hydrocortisone acetate to make this treatment practical.

A new drug, phenylbutazone (Butazolidin®) was found to possess excellent analgesic properties in patients with a variety of rheumatic disorders. It was particularly beneficial in aborting attacks of gouty arthritis and acute gouty and nongouty bursitis. In these conditions phenylbutazone had an anti-inflammatory effect; in other (usually chronic) rheumatic illnesses, such as rheumatoid arthritis or osteoarthritis, the only effect it was known to possess was that of analgesic. In many instances analgesia was greater from phenylbutazone than from other nonnarcotic, and nonhormone, drugs. Even though phenylbutazone might cause some undesired effects which would limit its general usefulness, it was believed that with careful supervision it might be a valuable additional treatment for various forms of rheumatism.

(See also CORTISONE, HYDROCORTISONE AND CORTICOTROPIN; HEART AND HEART DISEASES.)

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Rhode Island. A north Atlantic state of the United States, in New England, Rhode Island was one of the 13 original states; it is popularly known as "Little Rhody." Area: 1,214 sq.mi. (smallest of the United States), including 157 sq.mi. of water. Pop. (1950 census): 791,896, a gain of 11% since 1940. The principal cities, with 1950 populations, were: Providence (cap., 248,674); Pawtucket (81,436); Cranston (55,060); Woonsocket (50,211); Warwick (43,028); Newport (37,564); Central Falls (23,550).

History.—At its 1952 session the legislature enacted the following leading measures: an act appropriating \$48,842,002.68 for the support of the government for the fiscal year ending June 30, 1953; an act continuing for one year the temporarily increased tax rates of 2% on retail sales, 5% on corporate income, and 7% on pari-mutuel betting; an act centralizing the authority and responsibility for handling the nonjudicial business of the courts in an administrative judge assisted by an administrative clerk and staff; an act establishing a division of parks and recreation and a division of forests; an act changing the name of the state F.E.P.C. to the Rhode Island Commission Against Discrimination and strengthening the basic act to ensure all persons equal rights to all public accommodations; an addition to the motor vehicle code requiring the guilty to satisfy accident-caused damages and to present evidence of future financial responsibility; an act providing for the installation of a general records management program; an act providing statewide care for the instruction of the "exceptional child," i.e., any educable child, physically, mentally or emotionally handicapped to such an extent that normal educational facilities are insufficient for his needs; an act appropriating \$50,000 for a study productive of a master plan to guide the development of state institutions, particularly the hospital for mental diseases; an

act establishing a rigid program for the control of brucellosis (Bang's disease), the cause of undulant fever; an act increasing the state pension benefits of all retired teachers to a minimum of \$1,600 annually; a companion act increasing by 25% the annual pension of all state employees retired prior to June 30, 1947; and a series of acts requesting public authorization of bond issues totalling \$14,100,000, the largest of which was for self-liquidating bonds of \$7,500,000 for the extension of work to halt the pollution of Narragansett bay. The most interesting measure, an administration bill to create the Industrial Development corporation whose bonds would be backed both as to principal and interest by the state, passed the lower house but failed to pass in the senate. During the year, three cities and three towns took advantage of the 1951 constitutional home-rule amendment to formulate for the people's consent new charters, of which one provided for a city manager and council, two provided for a town manager and council, and the remainder provided for a strong mayor and council.

The chief executive officers of the state elected in November 1950 for 1951-52 were Dennis J. Roberts, governor; John S. McKiernan, lieutenant governor; Armand H. Coté, secretary of state; William E. Powers, attorney general; Raymond H. Hawksley, general treasurer. Edmund W. Flynn was chief justice of the supreme court.

Education.—During 1951-52 there were in the public elementary schools 68,421 pupils and 21,291 teachers; in junior high schools 16,294 pupils and 851 teachers; in senior high schools (three years) 11,746 pupils and 703 teachers; in senior high schools (four years and vocational) 4,965 pupils and 243 teachers. Pupils attending private schools numbered: elementary 28,815; junior high 4,328; senior high (three years) 1,189; senior high (four years) 5,814. The total number of teachers in private day schools was 1,408. Current expenditures for day schools were \$21,510,311.43 and for evening schools \$65,299.11. The commissioner of education in 1952 was Michael F. Walsh, working under the state board of education of seven members whose chairman was C. B. Collins.

Social Insurance and Assistance, Public Welfare and Related Programs.—The total number of persons receiving public assistance in all categories in Aug. 1952 was 27,918 or about 3.5% of the state's population. The total amounts paid out during the year Sept. 1, 1951, to Aug. 31, 1952, were as follows: old-age assistance \$5,379,186; aid to dependent children \$3,786,074; aid to the blind \$128,491; aid to the disabled \$159,827. As of June 30, 1952, there were 36,107 persons receiving old-age and survivors insurance at a monthly rate of benefits totalling \$1,374,890. During the calendar year ending June 30, 1952, 977,293 separate benefit payments totalling \$20,976,202 were made from the unemployment compensation fund, receipts amounted to \$16,512,865. In the same period, 267,684 payments totalling \$6,390,723 were made from the temporary disability fund, receipts amounted to \$6,754,445. There were 583 inmates in corrective institutions on Aug. 31, 1952, and 5,891 patients in charitable institutions and institutions for defectives, the number in the latter being 4,200.

Communications.—In Jan. 1952 the total highway mileage (excluding roads and streets under the control of the seven cities) was 1,812 mi. of which 848 mi. were state roads built and maintained by the state into and through the cities and towns. At the close of 1951, railroads were operating 185.29 mi. of track in the state.

Waterborne commerce of the state for 1950 was 8,379,590 tons, of which 827,800 tons were foreign commerce (imports 827,703 tons, exports 97 tons); 7,007,778 tons were coast-wise (receipts 6,396,421 tons, shipments 611,351 tons) and 138,648 tons were local.

On Dec. 31, 1951, there were four publicly owned (state) airports and seven privately owned airports or landing fields. There were also two naval air stations owned by the United States.

Banking and Finance.—There were 23 banking institutions in 1952. Resources of 17 banks under state supervision totalled \$959,667,088.56, and of 6 banks under federal supervision, \$212,237,156.14. Savings deposits (exclusive of club accounts) in savings banks and trust companies (the 17 state banks) amounted to \$512,215,351 on June 30, 1952. In addition, 6 loan and investment companies had resources of \$5,436,910.11; 7 building and loan associations \$103,471,370.69; 41 credit unions \$24,634,281.04. The state closed its fiscal year on June 30, 1952, with receipts totalling \$60,995,912.01 (including federal grants of \$9,101,580.18); expenditures and encumbrances \$56,728,537.42; surplus from operation \$4,267,374.59; free surplus \$4,095,461.56. The state gross debt was \$50,242,000; net debt \$44,605,995.14.

Agriculture.—The total acreage of principal crops harvested was 44,100 in 1952. Cash income from crops in 1951 was \$6,516,000; from livestock

and livestock products \$19,745,000; from government payments \$86,000; total gross farm income \$26,347,000. The estimated value of livestock on Jan. 1, 1952, was \$10,613,000.

On Jan. 1, 1952, the livestock population of the state included: 1,000 horses and colts; 20,000 milk cows; 7,000 other cattle; 7,000 hogs; 5,000 sheep and lambs; 651,000 chickens; 1,105,000 commercial broilers; 5,000 turkeys; and 2,000 colonies of bees. Livestock products in 1951 included 138,000,000 lb. of milk valued at \$9,248,000; 1,046,000 chickens valued at \$1,468,000; 3,511,000 lb. of commercial broilers, \$1,022,000; 51,000 turkeys, \$384,000; 9,000,000 doz. eggs, \$5,743,000.

Industry and Manufacturing.—The estimated number employed in the state in Aug. 1952 was 298,500, distributed as follows: manufacturing 140,466; trade (wholesale and retail) 51,500; government (federal, state and local) 34,500; service personnel, medical, legal, etc. 23,400; transportation and public utilities 16,500; construction 19,500; finance, insurance and real estate 11,800; miscellaneous 11,800. (Farmers, self-employed, domestics and armed services personnel are excluded.)

Employment in manufacturing in Aug. 1952 totalled 119,717 product wage earners and 20,749 nonproduction workers (salaried personnel). The weekly pay roll was \$6,910,877 for all manufacturing industries in Rhode Island according to the state department of labour. Wage earners were distributed among manufacturing industries as follows: textiles 5,498; jewellery-silverware 19,798; metals and machinery 36,359; rubber products 6,408; apparel 3,153; food 4,855; miscellaneous 19,395. The number of establishments employing four or more workers was 10,503 in Sept. 1952, and the estimated number of persons employed was 240,000 (Jo. C. M.).

Mineral Production.—Rhode Island's mineral production is limited mainly to building materials. In 1949 it included 398,487 short tons of sand and gravel (valued at \$378,896), 74,670 tons of stone (\$451,029), and other nonmetallics valued at \$98,760; total value \$928,685. In 1950 sand and gravel increased to 579,528 tons (\$580,322), and stone to 239,400 tons (\$798,186), while other nonmetallics dropped to \$47,000; total value \$1,425,508. Data for 1951 were not yet available.

Rhodesia, Northern. A British protectorate in central Africa. Area: 290,320 sq.mi. Pop. (1951 est.): 1,947,000 incl. (May census) 39,842 Europeans. Religion: pagan (about 80%) and Christian. Chief towns (European pop. 1950): Lusaka (cap. 4,615), Nkana-Kitwe (5,234), Luanshya (4,685), Mufulira (3,322), Ndola (2,962). Government in 1952, Sir Gilbert Rennie.

History.—The protectorate's favourable balance of trade for 1951 of about £31,600,000—a new record—was the result of an increase in world prices for base metals, which formed more than 95% of the territory's exports. The increase in copper prices doubled Northern Rhodesian revenue in the period 1951-52. During 1952 the development plan was again reviewed and its cost was now estimated to be £36,000,000 (previous estimate £19,000,000); £3,140,000 was earmarked for urban African housing. The number of houses built was almost up to schedule but still far short of needs. Plans for hydroelectric schemes at the Kafue and Kariba gorges were under consideration during the year, but no decision was reached.

On April 8 the government issued a draft statement on partnership containing proposals for more representatives of African interests in the next legislative council: Europeans and Africans must recognize each other's rights to a permanent home in Northern Rhodesia. It was intended that Africans should have equal representation with Europeans in the legislative and executive councils. The repeal of all differential legislation would not be in the Africans' best interests, but the government would propose amendments from time to time.

Henry Hopkinson, the British minister of state for colonial affairs, visited Northern Rhodesia in August in the course of an inquiry about the proposed central African federation. Also in connection with federation the Northern Rhodesian African congress announced that a small delegation would go to London at the end of the year. A strike of all African copper mine workers began on Oct. 20. The demand was for another 25% a shift, but many more complex issues were involved.

Education.—Schools (1951): government primary 55, pupils 25,600; government secondary 2, pupils 468; independent secondary, pupils 55.

Finance and Trade.—Monetary unit: Southern Rhodesian pound (£SR) £1 sterling). Budget (1952 est.): revenue £23,661,863; expenditure £23,746. Foreign trade (1951): imports £35,400,000; exports £67,000,000. Principal exports (1951 values): copper (blister and electrolytic) £3,036,423; lead £1,926,210; zinc £5,699,444; tobacco £1,638,523.

(W. H. Is.)

Leading Agricultural Products of Rhode Island

Crop	Indicated 1952	1951	Average 1941-50
Corn, all, bu.	294,000	287,000	314,000
Hay, all, tons	44,000	49,000	47,000
Alfalfa, tons	2,000	2,000	2,000
Potatoes, bu.	1,058,000	1,060,000	1,293,000
Oats, bu.	32,000	32,000	31,000
Apples (commercial), bu.	135,000	235,000	211,000
Peaches, bu.	15,000	21,000	13,000

Source: U.S. Department of Agriculture.

Rhodesia, Southern. A self-governing British colony in central Africa, Southern Rhodesia is separated from Northern Rhodesia by the Zambezi river and bounded northeast and east by Portuguese East Africa, south by Transvaal and southwest and west by Bechuanaland protectorate. Area: 150,333 sq.mi. Pop. (1951 census): 2,146,324 including 136,017 Europeans (as compared with 75,000 at the 1946 census), 4,343 Asians and 5,964 mixed. Chief towns (1951; European pop. only): Salisbury (cap., 40,510); Bulawayo (32,269); Umtali (5,762); Gwelo (5,115). Languages: English (official), Afrikaans and tribal dialects. Religion: Africans mainly pagan, Christian minority. Governor in 1952: Maj. Gen. Sir John Kennedy; prime minister: Sir Godfrey Huggins.

History.—A loan of \$28,000,000 for the Southern Rhodesian four-year plan, from the International Bank for Reconstruction and Development, emphasized the importance of industrial development during 1952. The Hunyani Poort dam, designed to enclose 55,000,000,000 gal. of water, was completed. Work started on the £4,500,000 southeast rail link to Lourenço Marques. The railway from Sinoia to Kafue (Northern Rhodesia), the next priority, was due to be started in 1956. Both lines would carry heavy mineral export traffic. A 30-mi. pipe line from the Zambezi to the Wankie coal fields, opened by the prime minister, Sir Godfrey Huggins, on Aug. 2, was the first tapping of the Zambezi for domestic and industrial water.

Coal output was expected to set a record. Monthly production of asbestos sometimes exceeded gold in value. Import controls on goods from nonsterling sources were rigidly imposed. In the budget of April 18 the income tax was raised by 6d. in the pound, but purchase tax proposals were dropped because of strong public opposition. In July it was announced that the net national income for 1951—£99,200,000—was more than double the 1946 figure.

Immigration quotas to ease the strain on accommodation and on the rail transport "bottleneck" cut the inflow (January-July) to 9,644 (1951: 17,561). The cost-of-living index rose to 127 in July, as compared with 100 in Oct. 1949. A £5,000,000 housing project for Africans near Salisbury and the creation of a commission on African higher education (chairman, Sir Alexander Carr-Saunders) were two important features in African development.

A contingent of the Rhodesian African rifles served in the Suez canal zone; in Malaya, the far east volunteer unit continued jungle operations. A new register of voters was closed in August when 46,682 names were on the common rolls as compared with 54,401 in Nov. 1951. (See also INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT; RHODESIA, NORTHERN.) (C. L. BK.)

Education.—European (1951): government primary schools 85, teachers 567, pupils 16,242; high schools 17, teachers 354, pupils 5,822; aided and recognized European schools 20, teachers 214, pupils 3,927; aided farm schools 9, teachers 9, pupils 143. Asian and mixed: government schools 12, teachers 69, pupils 1,974; other schools 6, teachers 36, pupils 984. African: government primary schools 11, teachers 8 European and 184 African, pupils 6,226; aided primary schools 2,142, teachers 274 European and 6,110 African, pupils 225,325; government postprimary schools 3, teachers 29 European and 31 African, pupils 889; aided postprimary schools 15, teachers 23 European and 16 African, pupils 686; aided teacher training schools 22, teachers 68 European and 14 African, students 961. There are also 3 aided schools for deaf and dumb and blind with 4 European and 9 African teachers, 151 pupils.

Finance and Banking.—Monetary unit: Southern Rhodesian pound (£SR=£1 sterling); circulation including Northern Rhodesia and Nyasaland less bank holdings (Aug. 1952) £12,945,000. Budget (1951-52): revenue £21,246,022, expenditure £23,219,025; (1952-53 est.) revenue £28,789,000, expenditure £28,125,685. National debt (March 1951) £105,810,235. National income (1951 est.) £98,900,000.

Transport and Communications.—Main roads (1951): 2,500 mi. plus 13,100 mi. hard surfaced. Railways (including Northern Rhodesia): 2,496½ mi.; (1951) passenger traffic 2,964,082; freight 6,689,264 tons.

Agriculture.—Tobacco (Virginia 1951-52): 97,205,254 lb. (farm weight).

Industry.—Fuel and power: coal (1951) 2,299,000 metric tons; electricity (year ended March 31, 1952) 354,799,124 units sold. Raw materials (1951): gold 486,907 oz.; asbestos 77,663 tons; chrome 330,989 tons.

Rice. The indicated 1952 U.S. rice crop of 47,730,000 bags (100 lb. each) again set a new record, 9% larger than the previous record of 43,805,000 bags (1951) and 45% larger than the 1941-50 average. The 1,956,000 ac. harvested approximated those of 1951 and the official rice acreage goal, but greatly exceeded the 1941-50 average of 1,569,000 ac. The indicated yield of 2,440 lb. per acre much exceeded the 2,250 lb. of 1951 and the 1941-50 average of 2,084 lb. As in 1951, Texas was the leading producer (13,402,000 bags), Louisiana second (12,320,000 bags), and California third (11,550,000 bags).

It was anticipated that about 26,000,000 cwt. of the crop would be required domestically, including 18,500,000 cwt. for food, thus allowing for much above normal rice exports. U.S. exports from the 1951 crop rose to an unprecedented 17,179,000 cwt. of milled rice, eight times larger than the prewar average. Prices during the harvest season of \$5.30 per hundredweight were favourable compared with \$4.00 per hundredweight a year earlier. The national minimum average support rate was \$5.04 per hundredweight. Export allocations of 7,280,000 cwt. of milled rice were announced for the period Aug. through Dec. 1952, about one-third of it to Cuba.

World-wide, a moderately favourable situation regarding the new rice crop was indicated for most areas, with acreage expanded about 10% compared with pre-World War II. A record crop of 176,000,000 tons was forecast, 8,000,000 tons more than during the previous year and 5% more than before World War II. The demand continued to be in excess of available export supplies.

Exports (1951) were 11,030,000 cwt., the largest in six years,

Rice Production of the Principal Producing Countries
(In millions of pounds; rough)

Country	1952-53*	1951-52	1950-51	Average, 1935-36 1939-40
China		98,000	103,500	110,372
India		75,000	70,000	74,740
Pakistan		26,046	27,560	24,340
Japan	26,300	24,800	26,443	26,791
Thailand		16,000	14,951	9,589
Java and Madura		—	14,200	14,126
Indochina		12,600	12,000	14,396
Burma		13,000	11,505	15,683

*Preliminary.

but only 55% of the prewar average. Prices in the autumn of 1952 were up by nearly 50% in some exporting countries. Two-thirds of the Burma exports were on a government to government basis, at a price of about 10 cents per pound. (J. K. R.)

Ridgway, Matthew Bunker (1895—), U.S. general, was born on March 3 at Fort Monroe, Va. He graduated from the U.S. Military academy at West Point in 1917, and was assigned as an instructor at West Point during World War I. He later saw service in China, Nicaragua and the Philippines, and at the outbreak of World War II was serving in the war plans division of the war department in Washington, D.C. He was given command of the 82nd infantry division, which was later converted into an airborne division, and which he led in invasions of Sicily in 1943 and Normandy in 1944. He was Gen. Dwight D. Eisenhower's representative on the United Nations Military Staff committee in 1946, U.S. Caribbean commander in 1948, and was serving as deputy chief of staff for administration when he was called to replace Lt. Gen. Walton H. Walker when the latter was killed in Korea, Dec. 1950. As commander of the U.S. 8th army, he engineered the U.N. forces' comeback against the North Koreans. When Pres. Harry S. Truman dismissed Gen. Douglas MacArthur, April 11, 1951, he named General Ridgway to succeed to MacArthur's commands in the far east. It was under General Ridgway that the prolonged truce talks began in July 1951.

On April 28, 1952, Ridgway was appointed supreme commander of Allied powers in Europe by President Truman to suc-

ceed Eisenhower. He formally took over his command at Rocquencourt, Fr., on May 30 and spent much of the rest of the year visiting NATO countries. On July 8 he was given command of all U.S. military, air and naval forces in Europe.

Rio De Oro: see SPANISH COLONIAL EMPIRE.

Rio Muni: see SPANISH COLONIAL EMPIRE.

Rivers and Harbours. In 1952 construction was executed on 170 regular river and harbour projects by the U.S. corps of engineers; of this number 15 were completed. Maintenance was performed on a total of 351 projects, including the extensive intercoastal waterways and Mississippi river system, the connecting channels on the Great Lakes, the 531 navigation locks and dams and 417 harbours, and also the channels and canals of the Ohio river system, the upper Mississippi river, the Illinois waterway, the hydroelectric generating plants on the Missouri river at Fort Peck, Mont., and the Columbia river at Bonneville, Ore. During the fiscal year ended June 30, 1952, \$192,657,613 of federal funds was expended for new work and maintenance of river and navigation projects and inland and coastal harbours.

The Rivers and Harbors act passed July 11, 1952, provided \$236,888,800 for maintenance and improvement of U.S. rivers and harbours. Of this total, \$158,435,800 was allotted to new construction work on 26 projects in 23 states, the District of Columbia and Alaska. Maintenance, operation and care were allotted \$73,458,900; advance planning \$405,000; examination, survey and other study programs \$825,000; and transfer to

MODEL of a section of the Niagara river built by Canadian engineers. It was used in 1952 to determine the most favourable place, on the Canadian side, for building a water intake to lead to a projected generating station



other federal and state agencies \$3,664,100. A special \$100,000 was allotted Niagara river investigations in New York state.

The river and harbour projects completed in fiscal year 1952 included Columbia river at Bonneville, Ore.; Depoe Bay, Ore.; Mianus river, Connecticut; Josias river, Maine; deepening of channel in Newark bay, Hackensack and Passaic rivers, New Jersey; deepening Ambrose channel, New York, harbour; Hudson river channel, New York; York Spit channel, New York; Harrison county shore protection, Mississippi; Georgetown harbour, South Carolina; Missouri river channel (excluding St. Anthony falls and Keokuk lock) at Clinton, Ia.; Calcasieu lock, Louisiana; Lorain harbour, Ohio; Morgantown lock and dam, Pennsylvania.

The important river and harbour projects allotted \$1,500,000 or more for construction work were: Arkansas river and tributaries, Arkansas and Oklahoma, \$4,000,000; Demopolis lock and dam, Tombigbee-Warrior rivers, Alabama, \$4,500,000; Jim Woodruff lock and dam, Apalachicola river, Florida, \$10,330,000; Intracoastal waterway, Jacksonville to Miami, Fla., \$2,000,000; Buford dam, Chattahoochee river, Georgia, \$3,000,000; Missouri river between Kansas City, Mo., and Sioux City, Ia., Kansas, Missouri and Nebraska, \$4,250,000; Missouri river, Kansas City to mouth, Missouri, \$2,300,000; McNary lock and dam, Columbia river, Washington and Oregon, \$63,000,000; the Dalles lock and dam, Columbia river, Washington and Oregon, \$20,000,000; Lock 2, Monongahela river, Pennsylvania, \$2,700,000; Cheatham lock and dam, Cumberland river, Tennessee, \$5,000,000; Old Hickory lock and dam, Cumberland river, Tennessee, \$10,000,000; Chief Joseph dam, Columbia river, Washington, \$15,000,000.

At the end of fiscal year 1952, congress had made an over-all total of 2,279 authorizations for river and harbour improvements since the program was adopted by the federal government in 1824. Of these, 1,721 projects had been completed; 189 had been placed under current construction; and 369 were not yet started. Total funds appropriated for construction and maintenance were \$4,144,000,000. Funds required to complete the authorized improvements totalled \$4,432,600,000. Total mileage of rivers and canals improved for modern navigation was 28,600, with 417 improved harbours.

At the Bonneville dam and reservoir, Oregon and Washington, the ten electric-power generating units were operated at their 518,400-kw. capacity throughout the year. At the Fort Peck dam on the Missouri river in Montana, the reservoir was operated throughout the year for maintenance of navigation on the Missouri river and for the secondary purposes of flood control and hydroelectric production. Operation of the generating units was continued during a major portion of the year at an 85,000-kw. capacity. (G. HB.)

Canada.—A contract was let for an 875-ft. extension to the Saint John dock terminal to increase handling capacity and speed shipping. The federal department of transport announced improvements to Quebec harbour to be started as early as feasible in 1953, including new harbour sheds and dredging of the estuary of the St. Charles river. Improvements to cost \$7,300,000 were also announced for Montreal harbour, to handle the enlarged traffic flow expected from the projected deepening of the St. Lawrence seaway. As a long-range plan, Toronto harbour commissioners took initial steps toward the creation of berths for a minimum of 12 ocean liners, for traffic expected when the seaway would be completed. (See also CANALS AND INLAND WATERWAYS.) (C. Cy.)

Roads and Highways. Despite adverse political and economic conditions throughout much of the world in 1952, there was general progress in high-

way improvement, and in some countries the progress was notable. Every country recognized the importance of highway transport in the development of a sound economy. The greatest obstacle to improvement was lack of funds, particularly in those countries that had to import highway construction equipment and materials.

United States.—The United States, with the largest system of improved highways and the greatest number of motor vehicles, continued to lead in the size of its annual highway program. It was estimated that expenditures amounted to \$2,900,000,000 for construction, \$1,600,000,000 for maintenance, and that 110,000 mi. were completed during the year. In greater part, this work consisted of modernization and resurfacing of old highways but in many instances the process of modernization required some relocation. Of the 2,990,000 mi. of rural road, approximately 1,755,000 mi. had a surface of some kind by the end of 1952.

Highway usage continued the phenomenal growth that began at the end of World War II and during the year reached a rate of 500,000,000,000 vehicle-miles annually. Congestion continued to grow on the principal arteries of all cities and on main inter-city routes. Public demand that highway improvement be accelerated became even more intense than in previous years but, in general, did not produce conspicuous results.

Many notable projects were completed or under construction during the year. New Jersey completed a 118-mi. north-south toll highway across the state, terminating at the George Washington bridge entrance to New York city.

Maryland completed a four-mile bridge across Chesapeake bay, described as the largest continuous, entirely over-water steel structure in the world. The bridge ties together two sections of the state separated by a wide body of water. An impressive feature of the year's work was the number of express highways being built in and near both large and medium-size cities. Most often the projects were sections of much more extensive improvements which, because of the cost, would have to be spread over a period of years. The Hollywood freeway in Los Angeles, Calif., is an example. The first section of this ten-mile artery was completed in 1940. The last section was nearing completion in 1952. Near the centre of the city, the highway was serving from 90,000 to 100,000 vehicles daily.

Federal-aid highway improvement was carried on with federal funds authorized at a rate of \$500,000,000 for each of the fiscal years 1952 and 1953. Federal and federal-aid projects completed during the fiscal year ending June 30, 1952, including work in national forests, national parks, other federal areas and miscellaneous federal projects, totalled 18,110 mi.

Canada.—The construction of the Trans-Canada highway, financed co-operatively by the federal government and the provinces, continued to attract wide interest. This 5,000-mi. \$300,000,000 highway scheduled for completion in 1956, was the largest east-to-west construction project since the Canadian Pacific and Canadian National railways were built. Eight provinces were spending about \$30,000,000 (including the federal government's contribution) on this route during the year. While this highway was the most spectacular activity, it was only a small part of the year's over-all program of \$240,000,000 for new construction. This program was well-balanced with work continuing on main provincial routes, secondary roads and urban extensions, despite material shortages. Work was begun on the Canso Strait causeway, a combination railroad and highway link between Cape Breton Island and the Nova Scotia mainland. This causeway crosses the strait at a point 4,000 ft. wide with the water reaching a maximum depth of 185 ft. The work was scheduled for completion in three years at an estimated cost of \$22,000,000.



AUTOMOBILES PLOWING through water on Chicago's outer drive, parallel to Lake Michigan, as high winds forced waves onto the roadway. Parts of the drive were being relocated on higher ground in 1952 to avoid recurrent flooding

Mexico.—The year's budget (an all-time high) amounted to \$63,000,000 for the completion of highways already under construction, including the Guadalajara-Nogales and the Veracruz-Coatzacoalcos roads. A unique method of financing secondary road construction was in use. Various industrial and commercial organizations, such as equipment dealers, tire manufacturers, oil companies, hotel associations and others, realizing the benefits to be gained through the expansion of highway transport, made substantial contributions to the financing of local roads.

Central and South America.—Work on the Inter-American highway continued in Costa Rica, El Salvador and northern Panamá. Considerable work remained to be done in completing the highway in Guatemala, Costa Rica and northern Panamá.

Guatemala began extensive work looking toward the completion of the highway extending northeasterly from the capital to Puerto Barrios, which is the Caribbean outlet for both Guatemala and El Salvador. This road would supplement the existing narrow-gauge railroad which had been the only means of land communication with the Caribbean coast.

Honduras was carrying out a program of pioneer road development to make truck travel possible to areas that had been accessible only over pack trails or by air. This program was complicated by the rugged mountainous terrain which made even pioneer road construction difficult and expensive. Transportation by truck, even over a low-type pioneer road, was so much less expensive than by pack mule that a rapid increase in agriculture was noticed in areas reached by new roads.

Colombia started work on a \$40,000,000 program aimed at connecting all of the major cities and the Pacific and Caribbean ports. Work on several sections was begun.

In Brazil the opening of the paved President Dutra highway linking the cities of Rio de Janeiro and São Paulo reduced the travel time by road between those cities from 11 to about 6 hr. Trucking rates were reduced by almost 50% and for the first time regular passenger bus service between the two cities was established.

Asia and the Far East.—In the Philippines, with the end of the large-scale road, street and bridge rehabilitation program, begun in 1946 with the assistance of the United States, the emphasis was shifted to development roads as an aid in the settlement of unpopulated but potentially rich areas in Mindanao. The road system in the Philippines, over-all, was the best in the far east but it fell far short of meeting the needs developed by the phenomenal increase in motor vehicle usage since World War II. The Philippine legislature considered basic changes in highway legislation to alleviate the situation.

Road construction in India was complicated by the lack of adequate supplies of asphalt, cement and, in some areas, even of stone. It was made more difficult, too, by the need for highways to accommodate both motor vehicles and bullock carts. The steel-tired carts were particularly destructive to asphalt road surfaces.

Pakistan proposed a six-year program to improve 13,167 km. of existing road (88% unsurfaced) and to construct 3,562 km. of new road costing (U.S.) \$12,000,000.

Ceylon's ambitious 20-year development plan was estimated to cost (U.S.) \$93,000,000, with \$28,000,000 for main trunk roads, \$50,000,000 for minor trunk routes, \$9,000,000 for local roads and \$6,000,000 for bridges.

Iraq was financing a four-year development plan from oil revenues. Included in the plan was the improvement of 3,400 km. of main road and the construction of about 8,000 km. of feeder roads. This work, to be carried on concurrently with irrigation development, was intended to increase the agricultural resources of the country.

Turkey's 1952 highway budget of approximately (U.S.) \$30,000,000 represented an increase of about 15% over the preceding year. Work was continued on the national highway system by a modern highway department established with technical assistance from the U.S. bureau of public roads.

Africa.—A series of international conferences had done much to co-ordinate highway construction activities in the various countries and to establish interconnecting road systems. The various countries were vigorously prosecuting their programs.

The Belgian Congo embarked on a ten-year plan for transportation improvements, in which highways played an important part. First priority was given to the construction of five main roads linking the major cities of the Congo with areas inadequately served by rail and waterways.

Great Britain allocated about \$4,000,000 in U.S. aid funds for highway construction in Tanganyika, Northern Rhodesia and Nigeria to supplement local revenues and normal home government allotments. (See also MOTOR TRANSPORTATION.)

(T. H. MACD.)

Rockefeller Foundation: see SOCIETIES AND ASSOCIATIONS, U.S.

Rockets: see JET PROPULSION; MUNITIONS OF WAR.

Rodeos: see SHOWS.

Roller Derby. The New York Chiefs won the championship for the third time in the four-year history of roller derby's world series competition by sweeping aside three rival teams in the season's climactic round-robin meeting at the Chicago coliseum. The defending champions, who previously had won in 1949 and 1951, went undefeated in the series, defeating the Jersey Jolters, 30-28; the Brooklyn Red Devils, 29-27; and the Chicago Westerners, 31-15 and 30-13. Sam Skobel paced the New Yorkers in the final-game rout of the Westerners with 11 points as Hank Goldberg tallied 5 and Charley Saunders accounted for 4. Bert Wall, who registered 5 points, was high man for the Chicagoans, who had edged out the Chiefs for the title during the regular league campaign. Wall

also won honours as the series high scorer with 39 markers in five games.

Saunders, who counted 27 points for the Chiefs in four contests, won the men's trophy as the most valuable player in the series; while Barbara Mateer, a Woodbridge, N.J., girl, who starred in a losing cause for the Westerners, annexed the most valuable player award for women. (T. V. H.)

Roman Catholic Church. In 1952 the College of Cardinals was reduced to 46 members by the deaths of Giovanni-Battista Cardinal Nasalli-Rocca di Corneliano, Alessio Cardinal Ascalesi and Michael Cardinal von Faulhaber.

Addressing the people by radio in February, Pope Pius XII appealed for a "return to Jesus Christ, the Church and the Christian way of life" as the only means of avoiding dangers that are threatening a world started on the road to ruin. To set an example of the sort of co-operation which he said is necessary, his holiness urged all well-intentioned persons in Rome, including municipal officials and private citizens, to join forces under the leadership of the acting bishop of Rome, Clemente Cardinal Micara. He said he hoped the Rome program would be imitated by dioceses near and far.

Speaking to the National Council of the Christian Union of Entrepreneurs and Managers, the pope urged management and labour to be guided by human sentiments in their mutual relations and to work together in harmony for the common welfare of mankind. The trouble with the present social order, said the pope, is that it is "not profoundly Christian nor truly human but purely technical and economic and that it does not rest at all on that which should be the base and solid foundation of its unity, namely the common character of men by nature and of sons of God by divine adoption."

Warning against the "new conception of Christian morality" based not on universal moral laws, such as the Ten Commandments, but on the real and concrete conditions or circumstances in which men must act, and according to which the conscience of the individual must judge and choose, Pope Pius gave three considerations or maxims to the international congress of the World Federation of Catholic Young Women: "The first: we grant that God wants first and always a right intention. But this is not enough. He also wants the good work. A second principle is that it is not permitted to do evil that good may result. But this new ethic, without perhaps being aware of it, acts according to the principle that the end justifies the means. A third maxim is that there may be situations in which a man and especially a Christian cannot be unaware of the fact that he must sacrifice everything, even his life, in order to save his soul."

A moral code for doctors was laid down by Pope Pius in addressing surgeons attending the first International Congress of Histopathology. He declared that three factors must be taken into account "to morally justify new proceedings, new attempts and new methods of medical research and treatment": the interests of medical science, the individual interest of the patient to be treated and the interest of the community. "It is an evident law that before applying new methods on living men, research on bodies should be performed or the method of experimenting on animals used," he said, adding that when this is impossible experiments on living men may be conducted on the basis of his code.

The church in Communist-controlled countries continued to suffer persecution. In China Bishop Francis X. Ford died in a prison hospital after having been under arrest for more than a year. Of the 1,435 Catholic missionaries still in China, 145 were in prison, including 17 bishops, 107 priests, 17 sisters

and 4 brothers. Pope Pius sent a letter to the clergy and people of China in January urging them not to lose heart in the face of persecutions and hardships and assured them that the church can be opposed and combatted but not conquered." Bulgaria passed a law nationalizing churches and forbidding them to have any contact with the outside world and sentenced a bishop and 3 priests to death; 24 other priests were imprisoned. The Vatican radio reported in March that at least six Rumanian bishops had died of Communist maltreatment leaving only four alive, all held in the U.S.S.R. An apostolic letter addressed to the Russian people called upon them to join his holiness in prayer for the bolstering and expansion of Christian faith in their nation and for that "just liberty which is the right of the human person." He asked them to resist, "if necessary unto death," the atheistic and materialistic features of communism. The pope's wishes for the U.S.S.R. and for all other countries, the message said, were that each people enjoy civil liberty inside its own frontiers, that each achieve a "just and reasonable material prosperity" and that each person be in a position to protect his own human dignity, enjoying the right to worship God openly.

In 1952 the Roman Catholic population of the United States, Alaska and the Hawaiian Islands was 29,407,520. This figure represented an increase of 772,642 since the year before. There were 29,241,580 Catholics in the continental United States. There were 24 archdioceses, 105 dioceses, and 1 vicariate apostolic, Alaska. There were 3 cardinals, 27 archbishops, 158 bishops, 38 abbots, 44,459 priests, 7,975 brothers and 156,696 sisters.

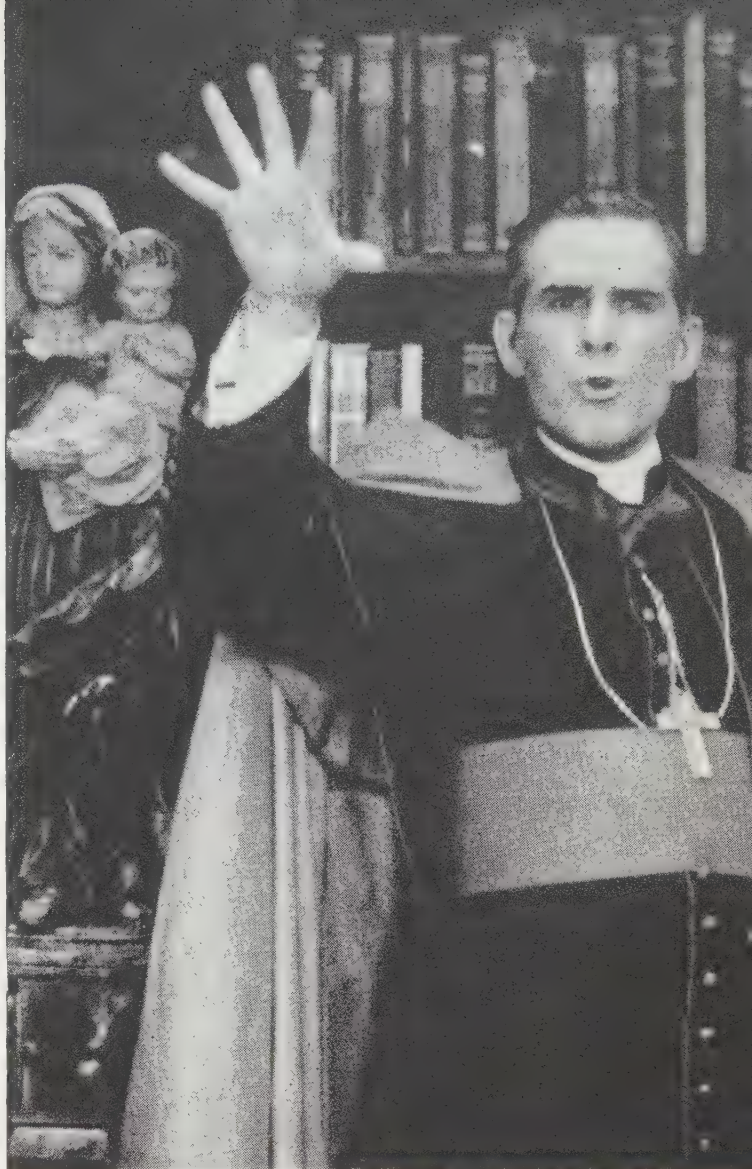
War relief services of the National Catholic Welfare conference reported 29,139,438 lb. of relief materials valued at \$12,40,638.75 were dispersed in the six-month period ending in May.

The National Council of Catholic Youth initiated *Vision*, a new monthly magazine in the field of Catholic youth. The new publication would concern itself with all matter directly or indirectly affecting young people, their problems and aspirations.

Among the awards given during the year was the Laetare medal, presented by Notre Dame university, Notre Dame, Ind., to a distinguished Catholic layman, Thomas E. Murray of New York city, a member of the Atomic Energy commission. Archbishop Karl J. Alter of Cincinnati, O., was honoured with the 1952 Rerum Novarum award "for outstanding contributions to the establishment of management-labor relations in accordance with the Papal Encyclical." Charles F. Vatterott, Jr., of St. Louis, Mo., past president of the Catholic Interracial Council of St. Louis, and Joseph J. Yancey, Negro founder and director of the Pioneer Athletic Club of New York city, received the James J. Hoey awards for "outstanding contributions to the cause of interracial justice." (See also CHURCH MEMBERSHIP; MISSIONS, FOREIGN [RELIGIOUS]; PIUS XII; RELIGIOUS EDUCATION; SOCIETIES AND ASSOCIATIONS, U.S.; VATICAN CITY STATE.) (J. LAF.)

On Nov. 29, 1952, Pope Pius XII named 24 prelates to become cardinals at a consistory to be held Jan. 12, 1953. The cardinals-designate were as follows:

Carlo Agostini, patriarch of Venice, It.
 Eusebio Costantini, titular archbishop of Theodosiopolis, secretary of the Sacred Congregation for the Propagation of the Faith.
 Augusto Elviro Da Silva, archbishop of San Salvatore della Baía, Braz.
 Gaetano Cicognani, titular archbishop of Ancyra, apostolic nuncio to Spain.
 Angelo Giuseppe Roncalli, titular archbishop of Mesembria, apostolic nuncio to France.
 Gaetano Valeri, titular archbishop of Ephesus, assessor of the Sacred Congregation for the Oriental Church.
 Pietro Ciriaci, titular archbishop of Tarsus, apostolic nuncio to Portugal.
 Francesco Borgongini Duca, titular archbishop of Heraclea in Europa, apostolic nuncio to Italy.
 Maurice Feltin, archbishop of Paris, Fr.
 Marcello Mimmi, archbishop of Naples, It.



BISHOP FULTON J. SHEEN, national leader of the Society for the Propagation of the Faith, during one of his TV broadcasts which began in 1952. The programs were largely monologues, aimed at relating faith to daily living

Carlo Maria de la Torre, archbishop of Quito, Ecua.
 Aloysius Stepinac, archbishop of Zagreb, Yugos.
 Georges François Xavier Marie Grente, archbishop-bishop of Le Mans, Fr.
 Giuseppe Siri, archbishop of Genoa, It.
 John d'Alton, archbishop of Armagh, Ire.
 James Francis McIntyre, archbishop of Los Angeles, Calif.
 Giacomo Lercaro, archbishop of Bologna, It.
 Stephen Wyszyński, archbishop of Gniezno and Warsaw, Pol.
 Beniamino de Arriba y Castro, archbishop of Tarragona, Sp.
 Fernando Quiroga y Palacios, archbishop of Santiago di Compostela, Sp.
 Paul Emile Léger, archbishop of Montreal, Que.
 Crisanto Luque, archbishop of Bogotá, Col.
 Josef Wendel, archbishop of Munich and Freising, Ger.
 Alfredo Ottaviani, assessor of the Sacred Congregation of the Holy Office.

Rotary International: see SOCIETIES AND ASSOCIATIONS, U.S.

Rowing. The XVth Olympiad on Meilahti gulf at Helsinki, Fin., was the most important event in rowing in 1952. Thirty-three nations with 107 entries competed in July over a 2,000-m. course. Seventeen of these reached the finals. The United States entered all seven events and won two: the eights and the pairs without coxswain. (See also OLYMPIC GAMES.)

Six nations shared in winning seven events. Great Britain, Germany, Poland, Belgium, Australia and Denmark went without firsts, but gained the finals one or more times. The Olympic rowing surprises were the U.S.S.R. and Argentina.



YALE VARSITY (left) finishing ahead of Harvard by a length during the 4-mi. upstream classic on the Thames river, Conn., in 1952. The occasion also marked the centenary of intercollegiate rowing in the U.S.

The United States entries were selected from 61 competitors in a three-day regatta on Lake Quinsigamond, Worcester, Mass. They were: singles—John B. Kelly, Jr., Navy, and Charles J. McIlvane, Jr., Vesper Boat club of Philadelphia, Pa., alternate; doubles—Bernard "Pat" Costello and Walter Hoover, Jr., Detroit (Mich.) Boat club; pairs without coxswain—Charles P. Logg, Jr., and Tom Price, Rutgers university; pairs with coxswain—Duvall Hecht, Jim Fifer and Jim Beggs (coxswain), Stanford university, Stanford, Calif.; fours with coxswain—University of Washington, Seattle; fours without coxswain—U.S. Naval academy, Annapolis, Md.; eights—U.S. Naval academy.

The U.S. Olympic tryouts were part of the National Association of Amateur Oarsmen's 78th championships. The ten non-Olympic events were contested on the Schuylkill river at Philadelphia, Pa. From these combined regattas the New York Athletic club emerged with the Barnes trophy for the greatest number of points. Actually the club was tied with Navy but had more firsts to its credit.

In the intercollegiate regattas Navy dominated the field, being undefeated in each of the 14 races it entered, including a sweep of the Intercollegiate Rowing association's regatta held for the first time on Lake Onondaga at Syracuse, N.Y., and the winning of the varsity, junior varsity and freshman races in the Eastern Association of Rowing Colleges' sprint championships on Lake Carnegie at Princeton, N.J. Princeton was second in the Intercollegiate Rowing association competition at three miles, and the University of Wisconsin, Madison, was runner-up in the sprint championship.

The 150-lb. varsity crew of the University of Pennsylvania, Philadelphia, led its field, retaining the Wright trophy and successfully defending the Thames Challenge cup at the English Henley.

Twenty-seven crews faced the starter in the Intercollegiate Rowing regatta (varsity and junior varsity at three miles and freshmen at two miles). The varsities finished as follows: Navy 15 min. 8.1 sec.; Princeton 15 min. 20.4 sec.; Cornell 15 min. 23.7 sec.; Wisconsin 15 min. 31.1 sec.; followed by California, Columbia, Washington, Stanford, Pennsylvania, Massachusetts

Institute of Technology and Syracuse.

Twenty colleges competed in the sprint championships 2,000 m. at Princeton, N.J. The results in the varsity were follows: Navy 6 min. 3.7 sec.; Wisconsin 6 min. 9.9 sec.; Harvard 6 min. 11.1 sec.; Cornell 6 min. 15.8 sec. Junior varsity: Navy 6 min. 11.8 sec.; Pennsylvania 6 min. 17.8 sec.; Harvard 6 min. 22.2 sec.; Princeton 6 min. 25 sec. Freshman: Navy 6 min. 15.7 sec.; Harvard 6 min. 16.3 sec.; Cornell 6 min. 18.1 sec.; Pennsylvania 6 min. 31.6 sec. In this latter regatta the Rowe cup totals for points were: Navy 24; Harvard 9; Wisconsin 6; Pennsylvania 5; Cornell 1.

In other college regattas Penn beat Rutgers on the Raritan river; Navy won the Adams cup from Penn at Cambridge, Mass.; Princeton the Carnegie cup from Yale and Cornell. Penn captured the Blackwell cup from Yale and Columbia on the windswept Harlem river and took the Childs cup for the third successive year from Princeton and Columbia on the Schuylkill. Navy beat Yale on the Housatonic and Princeton on the Severn river.

La Salle college of Philadelphia retained the Dad Vail trophy in the tenth regatta at Boston, beating Rollins college of Winter Park, Fla., by a few feet, followed by Dartmouth, Florida Southern, Marietta, American International college of Springfield, Mass., Brown and Tampa university. Wisconsin triumphed over California on Lake Mendota, and Yale won the only four-mile classic in U.S. waters over Harvard by a length. This 87th regatta between the pioneer rowing colleges commemorated the 100th year of collegiate rowing in the United States. Yale won the junior varsity race by three feet, but was easily beaten by the Harvard yearlings. Harvard won both Compton and Goldthwaite cups from Princeton and Yale, respectively.

On the Pacific coast, California swept the regatta with Washington for the first time in 42 years, and then won the Pacific coast sprint championships from Stanford.

Cornell beat Harvard in a late-season contest.

The 18th national Schoolboy championships on the Potomac river produced a new champion in the featured eight-oared shell event. Belleville (N.J.) High school won this in record time of 5 min. 0.8 sec. Lafayette High school of Buffalo, N.Y., was second in 5 min. 3.2 sec. and George Washington High school of Alexandria, Va., third in 5 min. 4.4 sec. Preston Janes, Lincoln Prep School, Philadelphia, Pa., won the championships singles and Walter Hoover, Jr., the junior singles.

In England, Oxford upset Cambridge at $4\frac{1}{4}$ mi. during a blizzard. The time was 20 min. 23 sec., which was $2\frac{1}{2}$ min. off the record because of conditions in the 98th running of this class.

At the Royal English Henley, Leander won the Grand Challenge cup from Australia in 6 min. 38 sec. by half a length. Pennsylvania retained the Thames Challenge cup, and Mervyn Wood of Australia defeated defending diamonds champion Anthony Fox of England in 8 min. 12 sec. by $2\frac{1}{2}$ lengths.

United States crews dominated the Royal Canadian Henley at Port Dalhousie, Ont. The Buffalo (N.Y.) West Side Rowing club won the Maple Leaf point trophy and the Ned Hanlon trophy for eights. Joseph Angyal of the New York Athletic club captured the single sculls championship from Gabby Beaudry of Lachine, Que. In all, the West Sides won seven firsts in the four-day regatta.

In April the world's professional sculling championships changed hands when Jim Saul, a little-known Australian sculler, defeated Evans Paddon on the Richmond river at Lismo, Austr., by a deck length.

(C. L. Bt.)

Ruanda-Urundi: see BELGIAN COLONIAL EMPIRE; TRUST TERRITORIES.

Natural Rubber.—The unrest and guerrilla warfare which had plagued some of the large rubber-producing areas continued during 1952. Over-all world production in the first half of 1952 as compared with the same 1951 period was down an estimated 122,500 long tons, in large part the result of a striking reduction in Indonesian small holders' output. The situation was dominated by a falling price structure which began in Feb. 1951. The average price of crude rubber in Jan. 1952 stood at about 48 U.S. cents per pound for dry rubber based on the Singapore market and rapidly settled to about 30 U.S. cents per pound at the end of May. There it stabilized and at the end of August the price stood at about 29 U.S. cents per pound. Despite this decline in price, the Rubber Industry Replanting board in Malaya recommended that the 4½ Straits cents tax per pound on rubber produced in and exported from the federation for the special purpose of facilitating the replanting of small holdings should continue to be levied.

In the U.S. the General Services administration announced an end to exclusive government importing and supplying of natural rubber to U.S. manufacturers, and trading in futures was resumed on the New York commodities exchange on March 3. All government restrictions on the purchase and use of natural rubber were lifted and free trading in the U.S. was officially restored on July 1. Latex production in 1951 in long tons was: Malaya 60,386, Indonesia 9,750 (estimated), Ceylon 1,426, Vietnam and Cambodia 856, Liberia 13,505, for a total production of 87,500 long tons (dry weight). Consumption of latex in 1951 totalled 83,500 long tons (dry weight) three-fourths of which was used in the United States and in the United Kingdom. Incomplete statistics indicated that the 1952 latex production would be about 60% of the previous year's, but with consumption standing near 90% of that of 1951 a tight supply was expected before the year's end. In the U.S. the General Services administration declared a free market on latex June 10, after disposing of the stocks it held. The price of latex at the end of August was about 40 U.S. cents per pound dry weight.

Synthetic Rubber.—World production of all types of synthetic rubber for the first six months of 1952 (excluding the U.S.S.R. and satellite countries) was 467,944 long tons, of which the U.S. produced 427,425 long tons. In the U.S. the General

Table III.—U.S. Imports of Natural Rubber, Including Latex

Year	Quantity in long tons	Value
1947	711,513	\$318,232,361
1948	735,340	309,208,730
1949	660,551	240,312,274
1950	802,203	458,241,415
1951	734,456	808,780,598

Services administration removed the limitations on the use of new GR-S rubber on Jan. 1 but retained those on butyl rubber; and on March 8 the Reconstruction Finance corporation announced a 3 cents per pound reduction in the price of GR-S rubber, which thereafter remained at 23 cents per pound (to Oct. 1). Congress passed on June 16 a 21-mo. extension of the Rubber act of 1948. This act continued government ownership of the U.S. synthetic rubber industry until March 31, 1954, but required the Reconstruction Finance corporation to report by March 1, 1953, to the president and to the congress on a program to dispose of the \$750,000,000 synthetic rubber industry. The president was required to put this program into the form of a legislative recommendation by April 1, 1953. The problem of an adequate rubber supply was considered at length in the report to the president by the President's Materials Policy commission (q.v.).

During 1952 announcement was made that polymerizations run at 122° F. using a class of diazotized aromatic amines, such as the sodium salt of *p*-nitrophenyl diazonium hydroxide (Nitrazole CF), produced rubbers which were the equal of standard production "cold" (41° F.) rubber, thereby eliminating the need for expensive refrigeration equipment. A new type of rubber appeared during the year under the name Hypalon. This was made by treating polyethylene, itself not a rubber, with chlorine and sulfur chloride. This treatment results in a rubbery polymer which can be milled, compounded and vulcanized. The resulting cured rubber shows excellent resistance to ozone and light. Another new rubbery material under the name Hydropol, still in the experimental stage, was made by hydrogenation of polybutadiene. In a typical example, emulsion type polybutadiene with a Mooney viscosity of 25 is hydrogenated in 5% solution in cyclohexane at about 225° C., 500 lb. per square inch pressure, to a residual unsaturation of 20% using a high catalyst (probably nickel) concentration amounting to 25% weight on

Table I.—Production of Natural Rubber in Principal Territories

(In long tons)								
	Malaya*	Indo-nesia*	Ceylon	Vietnam and Cambodia	India, Sarawak and Other Asia	Africa	Brazil	World Total†
First half 1951	307,891	437,210	48,500	19,858	104,191	35,250	12,290	970,000
Second half 1951	297,452	367,949	56,500	32,278	98,816	36,750	8,487	905,000
Year's total	605,343	805,159	105,000	52,136	203,007	72,000	20,777	1,875,000
First half 1952	279,025	360,810	41,000	21,862	96,173	32,250	13,619	847,500

*Production divided as follows:
 First half 1951: Malaya Estates 53%, Small holders 47%
 Indonesia Estates 22%, Small holders 78%
 First half 1952: Malaya Estates 56%, Small holders 44%
 Indonesia Estates 38%, Small holders 62%

†Estimated and includes other Latin America and Oceania.

Table II.—World Consumption of Natural Rubber

(In long tons)								
	U.S.A.	U.K.	France	Germany	U.S.S.R.*	Canada	China*	World Total†
First half 1951	35,478	18,746	9,607	6,447	2,500	2,284	—	112,500
July	36,506	15,649	5,598	6,119	4,000	2,832	—	105,000
Aug.	36,887	19,706	9,560	5,987	11,250	3,179	—	122,500
Sept.	37,407	23,879	11,004	7,071	10,000	3,264	5,000	135,000
Oct.	35,037	19,249	10,465	6,855	5,000	2,948	500	115,000
Nov.	33,256	15,910	9,983	5,285	1,250	2,940	—	105,000
Year's total	454,015	234,234	117,123	81,776	62,500	44,376	73,250	1,500,000
First half 1952	36,776	21,697	10,723	7,883	5,250	2,937	—	120,000
Jan.	34,642	17,710	10,297	7,215	13,750	2,912	500	122,500
Feb.	35,489	17,129	10,702	7,175	20,000	3,015	2,000	132,500
March	36,364	18,538	9,570	5,721	19,000	2,994	250	127,500
April	36,292	15,997	9,562	6,377	11,750	2,726	—	117,500
May	36,875	14,954	—	—	5,000	2,517	4,750	117,500

*Estimated net imports. †Estimated and includes all countries.

Table IV.—World Consumption of Synthetic Rubber

(GR-S or Buna S, Neoprene, Butyl, Nitrile rubbers or Buna N, in long tons)								
Last half 1951	U.S.A.	U.K.	France	Germany	Other Europe*	Canada	Total†	
July	61,419	290	630	337	750	1,862	65,000	
Aug.	67,260	299	389	340	750	1,944	70,000	
Sept.	68,460	284	685	365	750	2,281	72,500	
Oct.	68,923	436	1,036	489	750	2,369	75,000	
Nov.	65,403	410	985	501	750	2,388	70,000	
Dec.	60,421	427	941	388	750	2,488	65,000	
Year's Total	758,897	3,867	9,070	4,356	9,000	26,433	812,500	
First half 1952	69,430	440	1,058	694	750	2,528	75,000	
Jan.	65,667	455	1,072	622	750	2,854	72,500	
Feb.	68,744	392	1,069	659	750	3,164	75,000	
March	67,592	448	1,049	628	750	3,184	75,000	
April	66,439	408	1,023	632	750	3,139	72,500	
May	65,562	383	—	—	750	2,683	72,500	

*Estimated. †Estimated and includes all countries.

Table V.—World Consumption of Reclaimed Rubber

(In long tons)							
Last half 1951	U.S.A.	U.K.	Germany	Australia	Canada	Brazil	Total
July	25,500	2,319	1,492	776	1,155	322	31,564
Aug.	28,598	2,447	1,431	776	1,093	322	34,667
Sept.	26,226	2,424	1,333	777	1,105	322	32,187
Oct.	27,774	3,279	1,597	676	1,264	322	34,882
Nov.	24,509	2,648	1,592	676	1,077	322	30,824
Dec.	22,044	2,218	1,176	675	1,024	322	27,459
Year's total	346,121	30,991	20,561	8,265	15,823	3,862	425,623
First half 1952	26,553	2,680	1,816	—	1,126	490	33,360*
Jan.	24,518	2,451	1,724	—	1,108	490	30,990*
Feb.	24,797	2,185	1,627	—	1,204	490	31,000*
March	23,911	2,191	1,470	—	1,329	490	30,090*
April	22,314	1,922	1,722	—	1,207	—	28,550*
May	21,791	1,868	—	—	—	—	27,750*

*Estimated.

the rubber. Hydropol, which can be milled, compounded and vulcanized, hardens at low temperatures, as in liquid nitrogen, but unlike polyethylene at that temperature it is not brittle. Investigation of the polyester urethane rubbers and the polyester amide rubbers continued. These are made by reacting a diisocyanate with a hydroxyl terminated polyester prepared from a dibasic acid (such as adipic) and a glycol (such as ethylene glycol) resulting in the Vulkollan type rubbers of Germany; or by reacting a diisocyanate with a polyester amide prepared from a dibasic acid (such as adipic) and a hydroxylamine (such as monoethanolamine) resulting in the Vulcaprene type rubbers of England. The vulcanized Vulcaprene rubbers had been used primarily as bases for flexible lacquers for coating ordinary rubber articles and as impregnating agents. The vulcanized Vulkollan rubbers show unusually high tensile strength, modulus and resistance to abrasion and tear, all without the necessity of added reinforcing pigment. The resistance of both types to ozone and swelling in hydrocarbon oils is of a high order.

Reclaimed Rubber.—World production of reclaimed rubber in 1951 was 447,564 long tons. U.S. consumption through June 1952 was 143,884 long tons, compared with 191,500 long tons for the same 1951 period.

Rubber Manufacturing.—In 1951 the total new rubber consumed in all countries reporting was divided into 35% synthetic and 65% natural, whereas in the U.S. rubber consumption was 63% synthetic and 37% natural. In the U.S., manufacturers continued development work using some of the newer synthetic fibres in an effort to improve the strength and serviceability of their products. An all-nylon cord tire appeared, although the use of nylon as shock shield material was introduced a few years before. Consumption of nylon by the rubber industry in 1952 was running at an annual rate of about 12,000,000 lb. compared with more than 400,000,000 lb. for rayon. Dacron was finding uses in industrial products where high strength and low bulk were desirable, as in high-speed belts. Its high temperature properties were being explored. Most U.S. tire companies were doing experimental work with steel tire cord.

In the U.S., tire production held up well during 1952. Total shipments of pneumatic casings in 1951 were 85,154,000 units (61,678,000 passenger and motorcycle; 16,764,000 truck and bus; 5,018,000 farm tractor and implement; 1,340,000 industrial pneumatics; 354,000 aeroplane). Shipments for the first seven months of 1952 totalled 53,246,990 units (41,108,167 passenger and motorcycle; 8,349,854 truck and bus; 2,787,511 farm tractor and implement; 700,615 industrial pneumatics; 300,843 aeroplane) as compared with shipments during the same 1951 period of 51,143,287 units (37,530,849 passenger and motorcycle; 9,539,001 truck and bus; 3,069,900 farm tractor and implement; 771,575 industrial pneumatics; 231,962 aeroplane). Tire inventories at the end of July 1952 stood at a total of 12,630,327 units as compared with those of the same 1951 period of 4,078,693 units. (See also PLASTICS INDUSTRY; RECONSTRUCTION FINANCE CORPORATION.)

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Rugby: see FOOTBALL.

Ruiz Cortines, Adolfo (1891–), Mexican president, was born on Dec. 30 in the state of Veracruz. He first rose to national political prominence when he became governor of Veracruz in 1944. When Alemán was elected president of Mexico in 1946, Ruiz Cortines became one of his most influential political aides and was later named minister of the interior. On Oct. 13, 1951, he was nominated

by the Partido Revolucionario Institucional (P.R.I.) to succeed Alemán as president. After his nomination he declared that he would continue Alemán's domestic policy of increased industrialization and his foreign policy of close Mexican-U.S. amity. He startled the nation, however, by denouncing one-party government (actually the P.R.I.) and official curtailment of the opposition's political liberties. On July 6, 1952, he was elected president by a huge majority, receiving an estimated 70%–80% of the approximately 5,000,000 votes cast. He took office on Dec. 1 for a six-year term.

Rulers: see PRESIDENTS, SOVEREIGNS AND RULERS.

Rumania. A people's republic of southeastern Europe, Rumania is bounded north and northeast by the U.S.S.R., east by the Black sea, south by Bulgaria and west by Yugoslavia and Hungary. Area: 91,654 sq.mi. Pop.: (1948 census) 15,872,624; (1951 est.) 16,200,000. Language (1948 census): Rumanian 85.7%; Hungarian 9.4%; German 2.2%; Yiddish 0.9%; other 1.8%. Religion (1947 est.): Greek Orthodox 81%; Greek Catholic 9%; Roman Catholic 7%; other 3%. Chief towns (pop., 1945 est.): Bucharest or Bucuresti (capital, 1948 census, 1,401,807); Cluj (110,956); Jassy or Iasi (108,987); Timisoara (108,296); Ploesti (105,114); Braila (97,292); Galati (93,229). Chairmen of the presidium of the grand national assembly in 1952, Constantin Parhon and (from June 2) Petru Groza; premiers in 1952, Petru Groza and (from June 2) Gheorghe Gheorghiu-Dej.

History.—On Jan. 27, 1952, a currency reform was introduced. The new leu was to be tied to the Soviet rouble, "the most stable currency in the world." Funds of state enterprises, co-operatives and collective farms were to be exchanged at the rate of one new leu to 20 old. Sums in cash and in savings deposits were to be exchanged at rates graded according to the amount. Cash sums of more than 3,000 lei were to be exchanged at one new to 400 old, deposits of more than 3,000 at one new to 200 old. The effect of the currency reform was to take from the peasants most of their savings.

During the winter the food supplies of the cities had been barely adequate. The drive against kulaks and confiscation of stocks of food in the villages had not solved the problem. There were still very few collective farms in Rumania. At the time of the currency reform the "Socialist sector" in agriculture held nearly 13% of the arable land, and this was mostly accounted for not by collective but by state farms. The bad supply position was the result of defects of the administration in industry as well as in the countryside, as well as to mistakes taken in calculations by the political planners. The Rumanian failures were attributed to kulak sabotage, which could not have been so successful had it not received protection in high places. The problem was of such large dimensions that nothing less than a major purge would satisfy the taskmasters in Moscow.

The first step was the dismissal on March 6 of three assistant ministers of finance. Three days later the minister himself, Vasile Luca, one of the three most eminent Rumanian Communists, was removed from his post. On May 27 both Luca and the minister of interior, Teohari Georgescu, were removed from their positions as vice-premiers. Their places were taken by two veteran trade unionist members of the Politburo, Gheorghe Apostol and Chivu Stoica. A statement issued after a plenary session of the central committee, held on May 27–28, declared that Luca had surrounded himself in the ministry of finance with enemies of the people. Luca had kept farm prices high in order to enrich the kulaks. He had failed to provide working capital to industry punctually. He had failed to pay the wage bill in the first half of January, thus depriving the workers of their

Running: see TRACK AND FIELD SPORTS.

Rural Electrification. In 1935, when the Rural Electrification administration was established by congress, 10.9% of all U.S. farms had central station electric service. In 1940 the percentage was 30.4. REA estimated that nearly 90% of the farms were receiving service on June 30, 1952.

Total loans of \$2,592,629,925 had been made by REA at the close of the 1952 fiscal year on June 30, and 1,209,000 mi. of REA-financed lines were in operation. The borrowers were serving a total of 3,770,000 consumers. During the year the borrowers had added about 75,000 mi. of line and 223,000 consumers to their systems.

REA was authorized by congress in 1949 to undertake a similar loan program to provide for the expansion and improvement of rural telephone service. Loans in both programs bore 2% interest, and were to be repaid in 35 yr.

Telephone loan allocations approved by REA at the end of the 1952 fiscal year had reached \$82,000,000 to 110 commercial companies and 80 co-operatives. The loans enabled the borrowers to provide area coverage telephone service to 250,000 rural subscribers in 39 states.

During 1952 REA installed experimental radio-telephone equipment in two areas to provide tests of new developments under actual operating conditions. In each case radio beams link an isolated party line with a fully automatic exchange. Subscribers anywhere on the whole system can dial any other subscriber without the services of an operator, in spite of the fact that no wires connect one part of the system to the rest. In one of the installations the equipment provides full selective ringing. Although there are eight parties on the line served over the radio beam, the only telephone that rings is the particular party called. This, too, is fully automatic; no human attendant



TV ANTENNA above a farmhouse in the Ozark hills in Missouri, an example of the spread of central station electric supply which was serving almost 90% of all U.S. farms in 1952

last instalment of their wages before the currency reform. Georgescu had failed to take measures against Luca's gang of "speculators exploiting the workers and the working peasants." The statement also severely criticized Ana Pauker, until then perhaps the most eminent Communist in Rumania. She was accused of deviating from the party line in agricultural policy. She had apparently shown both too little and too much zeal. She was held responsible for the delays in the creation of peasant associations and collective farms. She had also infringed the principle of free consent on the part of working peasants, and allowed force to be used in creating collectives. The statement declared that Luca, Georgescu and Pauker had formed a clique of three within the party leadership, and had co-ordinated their resistance to the party line. Luca was sent before the party control commission, Georgescu was demoted and assigned to salutary work, while Pauker was for the time being allowed to remain in the central committee though no longer in the Politburo. On July 5, however, she was removed from her office of minister of foreign affairs and was replaced by Simion Bughici, till then ambassador in Moscow.

Gheorghiu-Dej's authority was increased on June 2, when he assumed the premiership. Groza, who for seven years had held the title but not the powers of premier, became president of the republic, while the former president, Parhon, retired.

On July 18 the press published the text of a new draft constitution. Its main significance was as a statement of the political and social principles of the regime. From this point of view it marked one more stage toward the Soviet model. The constitution of 1948 already introduced institutions closely copied from those of the Soviet Union. The new constitution made few changes of substance, but its language was more thoroughly Stalinian. The main specific innovation was the establishment of a Hungarian autonomous region, with its centre at Targu Mures, and comprising the Szekely counties in the southeast corner of Transylvania, whose population was almost exclusively Hungarian.

The most striking event in the industrial field was a trial for sabotage, held at the end of August, of engineers engaged in the construction of the Black sea-Danube canal. The accused persons confessed that they had been under the influence of the U.S. espionage service, though neither they nor the prosecution claimed that they had ever been in contact with U.S. agents.

From March onward large-scale deportations took place, first from Bucharest and then from other cities. The victims were mostly members of the former middle class. (H. S-W.)

Education.—Schools (1950–51): elementary c. 14,000, pupils 1,795,000; secondary and technical, pupils 323,000; institutions of higher education 11, students 57,000. Illiteracy (1951): 10.6%.

Finance.—Budget: (old lei, 1951 est.) revenue 433,900,000,000, expenditure 429,900,000,000; (new lei, 1952 est.) revenue 32,108,000,000, expenditure 30,608,000,000. Monetary unit: leu (pl. lei) revalued on Jan. 28, 1952, with official exchange rates of 2.80 lei=1 rouble (as compared with the previous exchange rate of 37.40 lei=1 rouble) £1=31.36 lei and \$1=11.20 lei.

Foreign Trade.—(1950) Imports U.S. \$213,000,000; exports U.S. \$239,000,000. Main sources of imports (1950): U.S.S.R. 49%; Czechoslovakia, Poland, Hungary and Bulgaria 33.3%. Main destinations of exports: U.S.S.R. 58.2%; four eastern European countries 30.4%.

Transport and Communications.—Roads (1945): 43,163 mi., including 1,150 mi. modernized in 1947. Licensed motor vehicles (Dec. 1950): cars 14,000; commercial 12,000. Railways (1949): 7,363 mi. Shipping (1948): merchant vessels 15, net registered tonnage 32,962. Telephones (1950): 135,000. Radio receiving sets (1949): 226,000.

Agriculture.—Main crops (metric tons): maize (1948) 5,279,000; wheat (1948) 2,600,000; barley (1947) 360,000; oats (1946) 280,000; rye (1947) 66,000; potatoes (1949) 1,090,000. Sugar, raw value (1951) 110,000. Wine production: (1951) 4,000,000 hl. Livestock: cattle (1950) 4,950,000; pigs (1950) 2,300,000; sheep (1948) 7,088,000; horses (1948) 939,000.

Industry.—Persons employed in industry (Oct. 1947): 462,300. Fuel and power (metric tons, 1950 est.): coal 264,000; lignite 3,150,000; crude oil 4,360,000; natural gas 3,300,000 cu.m.; electricity 1,033,000,000 kw.hr. Raw materials (metric tons, 1950 est.): pig iron 190,000; steel ingots and castings 270,000; lead 6,000; zinc 3,800; cement 740,000.

is required except for periodic checking and servicing.

REA's 1,014 electrification borrowers included 987 rural electric co-operatives, 42 public power districts, 26 other public bodies and 25 commercial power companies. Four new rural power systems went into operation in 1952.

Of the \$165,426,000 new electrification loans approved during the 1952 fiscal year, 37% was for generation and transmission purposes. The percentage in 1951 was 23. In 1952 loans for such purposes accounted for 19% of all REA loans.

Emphasizing the need for additional power sources was a 22% increase in kilowatt hour consumption. The 10,700,000,000 kw.hr. distributed by REA borrowers during 1952 was about twice that distributed in 1949, and about five times the 1946 figure. During the fiscal year, \$137,929,105 in loan funds was advanced to borrowers to pay for electric line construction. This brought loan funds advanced to a cumulative total of \$2,054,591,865.

Principal and interest payments on REA loans continued to run ahead of schedule. In 1952, advance payments totalled \$46,000,000. Since the start of the program, \$362,000,000 had been paid on principal and interest, nearly \$68,000,000 more than the total amount advanced by REA during its first six years.

The contribution of rural power lines to the nation's mobilization effort was increasing in importance. Although there was a growing shortage of farm labour, production goals for food and fibre were at their highest in history. (R. Sd.)

Canada.—In a report issued in 1952, and covering the 1941–51 period, the Ontario hydroelectric commission stated that the number of rural customers served by the commission had increased by 25,795 in the ten years, to reach a grand total of 318,606 by Dec. 31, 1951. Therefore nearly 73% of the total number of Ontario farms listed in the 1941 federal census had electrical service. Quebec increased its provincial aid to rural electrification from \$15,000,000 to \$20,000,000. Indicative of the spread of rural power on the prairies was the extension of electrical lines to 275 farms in Saskatchewan in 1952; lines were going up for the service of 137 additional farms. (C. Cy.)

Rural Rehabilitation Loans: see FARMERS HOME ADMINISTRATION.

Russell, Richard Brevard (1897–), U.S. senator from Georgia, was born on Nov. 2 in Winder, Ga. He studied at the Agricultural and Mechanical school at Powder Springs, at Gordon institute in Barnesville and at the University of Georgia, where he took his law degree in 1918. After serving in the U.S. naval reserve in World War I, he began practising law in Winder, was elected county attorney and in 1921 was elected to the Georgia assembly. He remained there for ten years, serving as speaker from 1927 until his inauguration as governor for the 1931–33 term. In 1932 he was elected to the U.S. senate to fill an unexpired term, and he was re-elected in 1936, 1942 and 1948. He was a leader of the senate states' rights group, chiefly southerners, and opposed such measures as the Fair Employment Practices bill, the anti-lynching bill and the anti-poll tax bill. He was well known as a proponent of economy in government, and as early as 1943 he was on record as saying that the U.S. post-World War II policy was ill defined and that a closer check should be kept on materials going to the Allies.

Russell was the southern bloc's choice to run for the Democratic presidential nomination in 1952. Prior to the convention at Chicago, Ill., in July he conducted a vigorous campaign in northern as well as southern states. At Chicago he received 268 votes on the first ballot, 294 on the second and 261 on the third before conceding the nomination to Adlai E. Stevenson,

whom he agreed to support.

Russell Sage Foundation: see SOCIETIES AND ASSOCIATIONS, U.S.

Russia: see UNION OF SOVIET SOCIALIST REPUBLICS.

Russian Literature. Criticism and self-criticism were particularly severe in the field of literature in 1952. Soviet writers were put in the dock during the Communist congresses of the 16 federated republics in September and were further reprimanded from the rostrum at the 19th Congress of the Communist Party of the Soviet Union (Moscow, Oct. 5–14).

The party continued to level the same reproaches at these "engineers of the spirit": they were not deriving sufficient inspiration from "soviet reality" or from the great achievement of the era of Joseph Stalin; they were idealizing the past, committing all kinds of ideological errors and lapsing into "bourgeois nationalism"; too many publications were commonplace or badly written or failed to respect "the truth of life"; novels and plays gave a one-sided and stereotyped view of present soviet society; too much concerned with technique, authors were forgetting man and neglecting to portray the conflicts and contradictions of his soul, the struggle taking place between the old and the new and between routine and progress. *Pravda* (in an article of April 7 on "The Backwardness of Drama") declared for the first time in recent years that there was room for satire in the country of socialism and launched a slogan that received much attention from the soviet writers' unions: "We need Gogols and Shchedrins!"

The Stalin prize jury emphasized this absence of good work: in March it found no play that deserved a first prize; and it awarded only one first prize for poetry (to Nikolay Tikhonov) and two for novels (to S. Zlobin for his historical *Stepan Razin* and to the Latvian author V. T. Latsis for his *To the New Shore*). As soviet authors fell short, the jury had for the first time to reward foreign writers, including the French Communist André Stil, a Hungarian and a Chinese.

Meanwhile the novels that got most praise from the party were: *The White Birch Tree*, by Mikhail Bubennov (the second volume of a work on World War II, covering the period between the checking of the Germans before Moscow and the Red army's victorious counteroffensive); *The Ninth Wave*, by Ilya Ehrenburg (a sequel to *Storm*, a vast survey of European history, 1948–51); *Bells of the Evening*, by Nikolay Virta (on Russian workers and peasants, showing how their revolutionary feelings were aroused at the beginning of the century); *Our Summer*, by Elena Uspenskaya (on student life); *The Zhurbins*, by V. Kochetov (on workers' life in a naval shipyard); *Birth of a Sea*, by Konstantin Paustovsky (the first novel on the artificial lake of Tsymlyansk and the building of the Volga-Don canal); and *The Metalworkers*, by A. Bylinov (a novel which readers in a Moscow factory found too technical and boring, according to the *Literaturnaya Gazeta* of Sept. 13).

More than 300 writers from all parts of the U.S.S.R. attended a conference on children's books (April 14–18). It was shown that there were about 250 writers for children and that since 1918 more than 39,000 works had been published, with a world total of 16,000,000,000 copies printed. The most popular writer, Samuil Marshak, had had 23,000,000 copies of his books printed, and they had been translated into 62 languages.

Works of literary history included: *Gogol*, by V. Yermilov; *Nikolay Dobrolyubov*, by V. Zhdanov (a work on the 19th-century democratic writer); *A History of 18th-Century Russian Literature*, by D. Blagoy; and some new books on Maxim Gorky, including A. Volkov's *Maxim Gorky and the Literary Move-*

ment at the End of the 19th and the Beginning of the 20th Century.
(A. PR.)

Rye. The smallest rye crop since 1870 was harvested in the U.S. in 1952. The 15,759,000-bu. crop was 26% below the 21,410,000 bu. of 1951 and 44% less than the average for 1941-50. The official production goal was 22,500,000 bu. Rye seeded for all purposes in the fall of 1951 was 3,164,000 ac., much below the 4,607,000-ac. average for the previous decade. Moreover, the 1,350,000 ac. retained for harvest in 1952 was the smallest on record, 22% below the previous year and only 43% of the planted acreage, compared with 51% normally retained. Heat and drought damage in the main producing area reduced average yields to 11.7 bu. per acre, compared with 12.4 bu. in 1951 and a 1941-50 average of 12.1 bu. South Dakota was the leading producer with about 3,300,000 bu. (6,656,000 bu. in 1951), followed by Minnesota, Nebraska and North Dakota.

The seeding goal for the crop to be harvested in 1953 was announced as 1,700,000 ac. An average yield of 12.4 bu. per acre would give 21,000,000 bu., enough for domestic requirements. Prices, supported at \$1.42 per bushel at the farm, averaged above \$1.75 per bushel.

Rye Production of the Principal Producing Countries
(In thousands of bushels)

Country	1952	1951	1950	Average, 1935-39
U.S.S.R.	114,000	119,450	910,000	885,000
Western Germany	24,911	17,647	13,333	9,191
Czechoslovakia	24,000	23,500	17,440	14,301
Canada	22,000	22,500	21,500	19,205
Turkey	20,810	18,030	16,570	20,394
Spain	19,500	20,000	24,000	29,993
Netherlands	18,300	18,100	17,240	20,611
France	15,759	21,410	22,000	44,917
Austria				
United States				

World rye production was preliminarily indicated at 1,565,000,000 bu., 5% below the 1,655,000,000 bu. of 1951-52 and 10% below the pre-World War II average of 1,732,000,000 bu. Much of the decline was attributed to the U.S.S.R.

(J. K. R.)

Saar. A German state (*Land*) united with France by monetary (from Nov. 20, 1947) and customs (from April 1, 1948) union. Area: 991 sq.mi. Pop. (1951 est.): 954,000. Language: German. Religion: Roman Catholic 75%, Protestant 24%. Capital: Saarbrücken (pop., 1939 est.) 135,000, (June 1947 est.) 97,752. High commissioner of the French republic, Gilbert Grandval; prime minister in 1952, Johannes Hoffmann.

History.—During 1952 the Saar became the hinge of Franco-German relations. On Jan. 27 Grandval became French ambassador to Saarbrücken. Although following logically from the conventions of 1950 the change caused an uproar in Germany where it was regarded as a French attempt to make permanent the political autonomy of the Saar. This autonomy made possible the economic union of the Saar with France upon which the French insisted as a condition of their participation in the Schuman plan, for only with the Saar mines and foundries did they feel that their own heavy industry could sufficiently counterbalance that of western Germany.

Elections to the Saar *landtag* fell due not later than Dec. 1952, and the Germans and pro-German Saarlanders hoped to make them into a pro-German demonstration against the autonomous regime. To prevent this, the existing *landtag* passed a law on March 17 forbidding the existence of political parties, such as the Democratic party (D.P.S.) suppressed in 1951, which were disloyal to the autonomous constitution.

Although the Saar Socialist party (S.P.S.) had left the Saar government in 1951, it seemed less and less able to retain support. In April the Saar T.U.C. (Trade Union congress) elected as its president a miner named Paul Kutsch, a rebel against

Industrial Production in the Saar

(In thousand metric tons)

Product	1936-38	1949	1950	1951	1952
Pig iron	2,280	1,584	1,692	2,368	1,248*
Steel	2,418	1,756	1,896	2,598	1,374*
Coal	12,500	14,236	15,096	16,281	7,910*
Cement	218.4	206.4	207.6	233.2	57.4†
Gas (million cu.m.)	—	1,344	1,320	1,510	517‡
Electricity (million kw.hr.)	1,260	1,524	1,500	1,722	752‡

*Six months. †Four months. ‡Five months.

the S.P.S. In May and August important groups of Socialists seceded, forming themselves into a new German Socialist party (D.S.P.) closely associated with the Social Democrats in Germany. On Sept. 7, with the possibility of imminent elections which the Germans now wished to postpone, the S.P.S. published a fresh program attacking the Franco-Saar conventions and declaring against tariff and passport barriers between the Saar and Germany.

The D.S.P. and a new pro-German Christian Democratic union (C.D.U.), founded in the Saar in June, more than once applied unsuccessfully to the minister of the interior for registration as parties. The Germans therefore complained to the Council of Europe that human rights were not respected in the Saar, but the complaint was rejected on Sept. 15.

The best hope for an agreed solution of the Saar dispute seemed to be to Europeanize the Saar territory within the European Coal and Steel Community. After abortive discussions in March, Franco-German conversations on this project began on July 25 in Paris and continued at intervals through August and September. The French, and naturally the Saarlanders, wished Saarbrücken to become the headquarters of the European Coal and Steel Community. (See also EUROPEAN UNION.) (E. Wl.)

Safety: see ACCIDENT PREVENTION; RAILROADS.

St. Christopher: see LEEWARD ISLANDS.

St. Croix: see VIRGIN ISLANDS.

St. Helena. British colony in the South Atlantic with dependencies of Ascension (34 sq.mi.; pop., 1946 census, 292; 1951 est., 170) and Tristan da Cunha (45 sq.mi. including islets; pop., 1951 est., 270). Colony: area, 47.3 sq.mi.; pop. (1951 est.), 4,700. Language: English. Religion: Christian (90% Anglican). Capital: Jamestown (pop. 1,547). Governor in 1952: Sir George Joy.

History.—The new British company which had taken over the hemp industry in 1951 adopted a policy of land conservation and agricultural reform. The price of hemp fell from £170 to £63 a ton and much of the season's crop could not be sold; some mills had to close and unemployment resulted. In Tristan da Cunha the new crayfish-canning industry had a difficult 1951 season but improvement took place early in 1952 and prospects were hopeful. The island had a doctor, a nurse and an agriculturalist as well as an administrator, and its own stamps (St. Helena overprinted). (K. G. B.)

Education.—Schools (1951): 11 primary and 1 secondary (total attendance 1,251); 1 domestic science centre.

Finance and Trade.—Currency: sterling. Budget (1952 est.): revenue £116,139; expenditure £116,139. Foreign trade (1951): imports £163,605, exports £241,537 (mostly flax, of which 1,130 tons were produced). Live-stock: 2,780 sheep, 2,216 goats, 996 cattle, 7,205 poultry.

St. John: see VIRGIN ISLANDS.

St. Kitts-Nevis: see LEEWARD ISLANDS.

St. Laurent, Louis Stephen (1882-). Canadian statesman, was born on Feb. 1 at Compton, Que. He was educated at St. Charles college, Sherbrooke, and Laval university, Quebec, Que., and practised law until Dec. 10, 1941, when he entered federal politics. He was minister of justice and attorney general, later secretary of state for external affairs, and on Nov. 15, 1948, became

the 17th prime minister of Canada. He was first elected to parliament as Liberal member for Quebec East on Feb. 9, 1942, and was returned in the 1945 and 1949 federal elections. In Dec. 1951, upon the tenth anniversary of his entry into federal politics, there were parliamentary and other expressions of appreciation transcending political lines, which was unique in Canadian affairs.

During 1952 St. Laurent led the government in one regular session of parliament commencing on Feb. 28 and a second session commencing Nov. 20. Important legislation passed during the first session included measures for the control and extirpation of foot-and-mouth disease, authorization of the establishment of a national library, and ratification of a peace treaty between Japan and Canada. At the end of the year he attended a commonwealth economic conference in London. (See CAN-ADA.) (C. Cy.)

St. Louis. St. Louis, Mo., had a population of 856,796 by the 1950 census, with an additional 824,485 in the adjacent metropolitan area. Mayor in 1952: Joseph M. Darst, Democrat.

The municipal government found itself in financial distress at the beginning of 1952. It ended the fiscal year April 7 with a \$2,707,723 net deficit, and faced a rapidly mounting debt because of increasing expenses and lack of substantial new revenue. A dire financial stringency which would have crippled services and cut deeply into government personnel (which had received pay raises totalling \$1,100,000 a year) was fortunately evaded by a city earnings tax which was belatedly enabled by the Missouri legislature and enacted hesitantly by the board of aldermen.

The tax, which would yield \$7,500,000 a year, went into effect Sept. 1, 1952. It levied one-half of 1% on gross earnings of individuals and net corporate profits. With this help the administration hoped to show a small operating surplus in the 1952-53 fiscal year, with estimated receipts totalling \$43,981,788 against appropriations of \$43,941,111.

An additional \$1,193,248 revenue came from real estate taxes. Mainly because of new construction, the assessed valuation increased \$25,804,100 to an all-time high of \$1,137,456,180. The tax rate was increased from \$2.85 to \$2.89 per \$100 valuation.

Fares of streetcars and buses, privately owned, were increased basically from 15 to 17 cents with optional 65-cent weekly permits plus 10 cents a ride. This, the sixth fare boost in five years, gave the company an estimated \$2,275,000 additional yield yearly and set the administration thinking about some form of publicly owned transit.

The school board voted a \$400 salary boost, plus a scheduled \$200 automatic raise, to 3,000 teachers and 1,200 nonteaching employees. Washington university opened its classes to Negroes for the first time. The board of aldermen extended rent control to April 30, 1953. Policemen surprisingly voted two-to-one against the establishment of a police merit system. The chamber of commerce of metropolitan St. Louis finished an industrial dispersion plan to counter possible enemy air attack, the first such plan brought to completion in the United States. A powerful Democratic political organization, known locally as the Callanan-Shenker-Hogan machine, was soundly thrashed in the 1952 primary election. (E. L. R.)

St. Lucia: see WINDWARD ISLANDS.

St. Pierre and Miquelon. This group of eight small islands off the south coast of Newfoundland constitutes a French overseas territory. Area: 93 sq.mi. Pop.: (1945 census) 4,354; (1951 est.) 5,000. Language:

French. Religion: Roman Catholic. Chief town, St. Pierre (pop. 1945, 3,636). Administrator in 1952: Irénée Davier.

History.—A new general council took office in 1952; the retiring senator was re-elected.

The Société de Pêche et de Congélation, which had been founded with state aid, was made responsible for the cold-storage plant. Some of the frozen fish were to be sold in North America. Progress was made on the fur farms. A seal-hunting company was founded. A specialist in lung surgery was put in charge of the campaign against tuberculosis. As a result of regular services by sea to and from Newfoundland, about 1,000 tourists were able to visit the islands.

Education.—Pupils (1952): primary 1,067; secondary and technical 118 Bursaries in France 11.

Finance.—Budget (1952 est.): balanced at 283,000,000 fr. C. F. A. Monetary unit: the franc (Colonies Françaises d'Afrique) is used; 1 franc C. F. A.=2 metropolitan francs. In 1952, U.S. \$1=350 metropolitan francs.

Foreign Trade.—(1951) Imports 410,000,000 fr. C. F. A. (incl. 108,000,000 fr. C. F. A. from France and 220,000,000 fr. C. F. A. from Canada); exports 128,000,000 fr. C. F. A. (incl. 75,000,000 fr. C. F. A. to the Antilles), mainly cod 98,000,000 fr. C. F. A. and silver fox skins 4,000,000 fr. C. F. A.

Communications.—(1951) Ships entered 163.

(Hu. De.)

St. Thomas: see VIRGIN ISLANDS.

St. Vincent: see WINDWARD ISLANDS.

Sales, Retail: see BUSINESS REVIEW.

Salt: see MINERAL AND METAL PRODUCTION AND PRICES.

Salvador, El. A republic on the Pacific coast of Central America, the smallest but most densely populated country on the isthmus, El Salvador has an area of 13,176 sq.mi. and a population (1950 census of the Americas) of 1,858,656; (1951 est.) 1,920,000. The capital is San Salvador (pop., 1948, 124,266). Other principal cities are: Ahuachapán (14,666), Chalchuapa (10,300), Cojutepeque (16,210), Nueva San Salvador (25,684), San Miguel (19,339), San Vicente (14,623), Santa Ana (51,351), Sonsonate (18,898), Suchitoto (10,619), Usulután (9,590) and Zacatecoluca (11,684). Language: Spanish. Religion: predominantly Roman Catholic. President in 1952: Lieut. Col. Oscar Osorio.

History.—The government's economic and administrative reform program continued throughout 1952. In elections for a new national assembly in May, the government's Revolutionary party was unopposed. More than 700,970 votes were cast. A new income tax measure which entered into force at the beginning of the year established levies up to 44% on incomes higher than \$60,000 and provided for a 5% tax on profits of all locally domiciled businesses. The national budget for 1952 came to \$53,000,000, of which \$14,000,000 was set aside for education and social welfare and \$8,000,000 for public works projects. (G. I. B.)

Education.—In 1950 there were 1,832 primary schools with 4,840 teachers and 145,226 pupils and 99 secondary schools with 7,231 students. The national university had 1,120 students and 147 faculty members in 1949. About 16% of the 1952 budget was allocated to public education. In 1951 there were 30 motion-picture theatres with seating capacity of 40,782.

Finance.—The monetary unit is the colón, valued at 40 cents U.S. currency in 1952. The 1952 budget was placed at \$53,000,000 (1951: \$44,000,000). In 1950 ordinary governmental expenditure was \$35,395,579; revenue, \$35,347,019. The public debt as of Dec. 31, 1951, was \$9,538,585, all of which was external. On Sept. 30, 1952, currency in circulation totalled 80,260,000 colones; demand deposits 67,860,000 colones; gold reserves \$29,470,000; foreign exchange \$30,930,000; time deposits 1,660,000 colones; government deposits 17,570,000 colones.

Trade and Communications.—Exports in 1951 totalled \$85,529,736; imports (preliminary figures), \$66,583,514. Leading exports were coffee (89%), sugar, balsam, gold and silver. Principal customers were the U.S. (86%), Honduras (2%), Nicaragua (2%) and Italy (2%). The U.S. supplied about 62% of the imports; other important suppliers were Honduras, Nicaragua and the United Kingdom.

The two principal railroads have 385 mi. of main-line track, all narrow gauge. In 1950, 3,403,261 passengers and 458,760 short tons of freight were carried. National highway mileage (1950) was 1,693, of which 934 mi. were all-weather. The two international air lines made 3,535 flights into El Salvador.

Agriculture.—In the 1950-51 season coffee production totalled 1,111,855 bags of 132 lb. each; exports in 1951 were 1,086,214 bags, most of which went to the U.S. Centrifugal sugar production (plantation) was 29,000 short tons in 1950-51; sesame seed 4,600 tons; maize 156,000 tons; cotton (ginned) 6,500 tons; tobacco (1951-52) 1,900,000 lb. Exports of balsam, of which El Salvador is the chief source, were 152,000 lb. in 1951. There were an estimated 800,000 cattle, 350,000 pigs and 22,000 sheep and goats in 1950.

Mineral Production.—In 1951, 27,100 troy oz. of gold and 351,800 oz. of silver were produced. (J. W. Mw.)

Salvation Army. The Salvation Army, a religious and charitable organization, operated during 1952 in 87 countries and territories throughout the world. Its 26,747 officers and cadets, assisted by several hundreds of thousands of lay members, preached the Gospel of Christ in more than 80 languages and dialects. The international leader of the Salvation Army was Gen. Albert Orsborn, whose headquarters were in London, Eng.

The activities of the Salvation Army in the United States were directed by Commissioner Ernest I. Pugmire, national commander, and four territorial (area) commanders. Local leadership was given by more than 5,000 commissioned officers. There were 1,340 corps, or centres of evangelism and religious instruction for young people.

During the year, the Army's disaster service units were called into action in such catastrophes as the West Frankfort, Ill., mine explosion, the Arkansas tornado, and the Bakersfield, Calif., earthquake. Salvation Army canteens, manned by officers and volunteers, were usually on hand a short time after disaster struck, ready to supply the traditional hot coffee, sandwiches and donuts to victims and to rescue workers. Salvationists throughout the country also contributed money and supplies for the relief of hurricane, flood and war sufferers in other parts of the world.

As one of the member agencies of American Relief for Korea, Inc., the Salvation Army participated in numerous clothing campaigns and other drives for the collection of relief supplies to be sent to that country. Developments in Korea were also responsible for increased activity in the Salvation Army's Service to the Armed Forces program. As one of seven member



MEMBERS of the Seekers group, a self-help organization sponsored by the Salvation Army, operating much like Alcoholics Anonymous. A member is shown "testifying" on his former way of life and the means by which he was able to cure himself of alcoholism

agencies of the United Service Organizations, Inc., the Salvation Army responded to servicemen's spiritual and leisure-time needs by providing U.S.O. clubs and other facilities in more than 30 communities throughout the U.S. and Hawaii. In addition, the Salvation Army had extended its Red Shield program to include more than 50 drop-in centres and canteens for the use of the men and women of the armed forces.

In recognition of its religious and recreation program in more than 140 veterans hospitals throughout the country, the Salvation Army was presented in May 1952 with the award for meritorious service, by the VA administrator, Maj.-Gen. Carl Gray, Jr.

During the year, the Salvation Army in the U.S. held 97,732 street-corner meetings which attracted almost 1,000,000 persons. In its social service program, 19,609 persons were treated in seven clinics and dispensaries; 9,200 patients were admitted to the five general hospitals; 1,658 missing relatives and friends were located by the four missing persons bureaus; 34 maternity homes and hospitals cared for 16,300 women and infants; more than 50,000 mothers and children were sent to summer camps; and the four employment bureaus assisted 47,734 people in finding jobs in other than Salvation Army institutions. A total of 107 men's social service centres provided shelter and work for 30,155 men.

In the field of prison work, 7,842 prisoners were assisted on discharge and given employment; 2,092 prisoners were paroled in care of the Salvation Army, whose officers devoted 7,671 hr. to prison visitation. (See also CHURCH MEMBERSHIP.)

(E. I. P.)

Samoa, American. The Samoan Islands extend from lat. 13° 26' to 14° 22' S. and from long. 168° 10' to 172° 48' W. and are about 2,700 mi. E. of Australia and 2,200 mi. S. of the Hawaiian Islands. American Samoa consists of the inhabited islands of Tutuila, Tau, Olosega, Ofu and Aunuu, and the uninhabited coral atoll Rose Island. Swains Island, 210 mi. N.W. of Tutuila, was made a part of American Samoa in 1925. Total area of American Samoa is 76 sq.mi. and total population on Aug. 1, 1952, was estimated at 17,600, a reduction from the previous year's count resulting from the migration of about 1,000 natives to Hawaii. About four-fifths of the population lives on the main island of Tutuila. Pago Pago, on Tutuila, is the capital.

History.—American Samoa is an unorganized United States possession administered until July 1, 1951, by the U.S. navy. By order of Pres. Harry S. Truman, administration of American Samoa was transferred to the jurisdiction of the department of the interior on July 1, 1951. On Feb. 23, 1951, Phelps Phelps, former New York state legislator, was appointed governor. He resigned in 1952 and was succeeded by John C. Elliott, who had been secretary of American Samoa. Leland P. Draney was appointed secretary in 1952.

American Samoa has a bicameral legislature consisting of the house of representatives, with 54 members popularly elected for two-year terms, and the house of *Alii*, with 12 members. The legislature has advisory powers. The governor also has an advisory council consisting of from five to seven Samoans. Each of the three administrative districts has a native governor appointed by the governor of American Samoa. They in turn appoint village chiefs. The judiciary consists of a high court, district courts and village courts.

Education.—Education is compulsory for all children from 7 to 15 years of age, inclusive. It was estimated in 1950 that 93% of all persons 10 years of age or older were literate. As of June 30, 1952, there were 3,861 children enrolled in 53 public schools with 179 teachers, principals and other school personnel, and 1,255 children enrolled in 7 private schools with 35 teachers. Of the public schools, 46 were elementary, 5 junior high, 1 senior high and 1 vocational.

Production and Trade.—The economy of American Samoa is basically on a subsistence level. The main products of American Samoa are copra and

native handicraft, principally pandanus mats and rugs woven from grass. Principal crops, with estimated 1950 production, were copra (2,403 metric tons), breadfruit (7,700 metric tons), bananas (19,492 metric tons) and taro (2,900 metric tons). There were approximately 200-250 cattle and 200-250 horses in American Samoa in 1951. Imports in the fiscal year ending June 30, 1952, totalled \$1,110,563, of which the United States was the source for about 55% and Australia and New Zealand for about 40%. Exports totalled \$366,106, of which two-thirds were copra. Total revenues collected during the 1951-52 fiscal year amounted to \$648,173, in addition to a United States government appropriation of \$563,104; expenditures amounted to \$1,324,327. The Bank of American Samoa, which is a government institution, operated by the American Trust company, San Francisco, Calif., is American Samoa's only banking institution. As of June 30, 1952, it had a capital of \$50,000, a surplus of \$65,000, and undivided profits of \$33,665. Its gross earnings in the 1951-52 fiscal year totalled \$36,306.

Transportation.—Tutuila has 65 mi. of roads, 50 mi. of footpaths, and a 6,000-ft. coral-surfaced airstrip, no longer in use. (S. Nr.)

Samoa, Western: see NEW ZEALAND; TRUST TERRITORIES.

San Francisco. The population of the city and county of San Francisco on April 1, 1950, according to the 1950 U.S. census, was 775,357, compared with 634,536 in 1940. Estimates for the population of the city of San Francisco on Jan. 1, 1953, ranged between 795,000 and 800,000. The mayor in 1952 was Elmer E. Robinson, elected for a four-year term commencing Jan. 8.

San Francisco business activity appeared to be on the road to achieving a new annual high during 1952, based on industrial development, retail trade, financial transactions, consumption of electrical energy, water and industrial and commercial gas, air traffic and intercity vehicular traffic through the San Francisco gateways.

New industries and expansions were making rapid strides. The San Francisco bay region registered \$100,000,000 in outlays for industry during the first eight months of 1952. This amount exceeded any previous similar period and was well on the road to an estimated \$150,000,000 for the full year.

A whole series of service developments including public utilities, schools, churches, transit facilities, communications and street and highway improvements was under way during the year. The people of San Francisco had authorized \$189,000,000 in bond issues since Aug. 1945, and the municipal properties had expanded in value by \$120,000,000. The city planning department early in 1952 listed proposed projects of \$180,000,000 for the next six years. These municipal improvements were in addition to approximately \$400,000,000 which had been authorized in private construction in San Francisco since Aug. 1945. Of the private construction, about \$181,000,000 was new residential providing 21,000 dwelling units; nonresidential construction accounted for about \$120,000,000 and the balance came under additions, alterations and repairs, divided approximately one-third for residential and two-thirds for nonresidential.

The San Francisco tax rate for the fiscal year 1952-53 was \$5.67 per \$100 assessed valuation. The assessment roll amounted to \$1,825,291,170. Estimated fiscal year revenues amounted to \$169,085,667, of which \$69,452,475 came from city taxes. The San Francisco bonded debt limit as of June 30, 1952, based on the 1952-53 assessment, amounted to \$219,034,940. Bonds outstanding not matured on June 30, 1952, amounted to \$187,743,000. The margin for future bond sales amounted to \$109,729,940. Bonds authorized but unsold as of June 30, 1952, amounted to \$50,160,000.

(R. B. KR.)

San Marino. A small republic in central Italy, San Marino is entirely surrounded by the province of Emilia and is situated on the slopes of Monte Titano, 14 mi. S.W. of Rimini. Area: 38 sq.mi. Pop. (June 30, 1951, est.): 12,969. Language: Italian. Religion: Roman Catholic. San Marino is governed by two *capitani reggenti* appointed every

six months by a grand and general council of 60 members elected by universal suffrage every four years.

History.—On Feb. 5, 1952, the government asked the United Kingdom government to settle a claim for £420,000 in compensation for war damage caused in June 1944 by an air raid allegedly carried out by the royal air force. On June 3 the British foreign office, through its vice-consul at Florence, It., sent a reply denying any British responsibility, but offering an *ex gratia* payment of £26,000 to be accepted by July 3. On June 25 the regents Domenico Morganti and Mariano Ceccoli wrote directly to Queen Elizabeth, in Latin, protesting against the £26,000 offer as "mortifying and inadequate." On Aug. 21 the foreign office replied that although the *ex gratia* offer of £26,000 had lapsed, the San Marinese government could apply for it again if they wished.

Luigi Gozi, San Marino's treasurer, revealed on July 3 that the republic's deficit amounted to 500,000,000 lire (about £285,700). It was also reported that civil servants had not been paid for 15 weeks.

Finance.—Budget (1951-52 est.): provisionally balanced at 570,411,538 lire. San Marino uses Italian currency.

Santo Domingo: see DOMINICAN REPUBLIC.

São Tomé: see PORTUGUESE OVERSEAS TERRITORIES.

Sarawak: see BRITISH BORNEO.

Saskatchewan. Central of the three prairie provinces of Canada. Saskatchewan was created in 1905 by act of parliament. Area: 251,700 sq.mi. of which 13,725 are water. Pop.: (1951) 831,728. Capital: Regina (pop. 1951) 69,928.

History.—The 4th session of the 11th provincial legislature was used largely as a pre-election sounding board by both the Co-operative Commonwealth (Socialist) government and the Liberal opposition. The most significant legislation of 1952 included the approval of a new five-year federal-provincial tax agreement, abolition of the fiat previously required before a person could sue the crown and upward revision of the legal wage requirements. When the votes of the June 11 general election were counted, the C.C.F. had materially improved its legislative position: it had 42 seats compared with 31 upon dissolution; the Liberals had only 11 compared with 19; 2 independents failed to get returned.

The 12th legislature had 53 seats compared with 52 for the 11th, because the 1951 Redistribution act added a new northern constituency.

Education.—A federal survey revealed that Saskatchewan was spending 15.8% of its income on education. It was the smallest percentage of all the ten provinces.

Health and Welfare.—The same federal survey revealed that Saskatchewan was spending 32% of its total income on health, which was the largest provincial percentage. The Workmen's Compensation act was extended to include tuberculosis, brucellosis and Newcastle disease as occupational diseases.

Transportation.—The government reported that in the 1944-51 period it had built 735 mi. of hard-surface roads. Total expenditures on highways during the period were \$45,460,907. In 1952, 778 mi. were graded, 1,000 mi. were gravelled and 229 mi. were hard-surfaced, bringing the total hard-surface mileage to 1,044. There were 85,000 telephone subscribers, an expansion of nearly 50% since 1947.

Finance.—The budget for 1952-53 estimated \$65,922,580 in revenue and \$65,873,390 in expenditures. In the 1944-51 period the province had undertaken capital expenditures totalling \$78,071,794. On Dec. 31, 1951 the provincial debt stood at \$151,639,999.

Agriculture.—In 1951 Saskatchewan farms yielded an all-time high of \$622,000,000 of cash income. Intensive drying efforts, aided by a warm 1952 spring, saved about 285,000,000 bu. of grain which had been caught by early autumn snowfalls in 1951.

An outbreak of foot-and-mouth disease disrupted the Saskatchewan cattle industry.

Forestry.—An interim report of a forest survey committee indicated there were not less than 16,000,000 cords of readily available black and white spruce pulpwood in northern Saskatchewan, instead of the 2,500,000 cords previously estimated. The survey was only 60% complete in 1952 and the expectation was that when it was finished in 1954 about 30,000,000 cords of pulpwood would have been found.

Industry.—The government reported that its 15 crown companies made a

gross profit of \$4,405,000 in 1951. In 1952 about \$350,000,000 of new industrial capital was invested in Saskatchewan. With the employment index at 100 in 1939, and average weekly wages at \$24.18, industrial activity had increased until in July 1952 the index was 161.2 and wages were \$51.03.

Minerals.—The appointment of an oil and gas conservation board revealed the extent of the 1951–52 petroleum boom. In 1951, 85 companies spent \$20,000,000 on exploration and development; in 1952, 70 companies spent \$30,000,000. In 1951, 1,250,000 bbl. of crude oil were produced, compared with 1,000,000 bbl. in 1950. More than 700 claims were staked and recorded in the uranium rush at Beaverlodge and Black lakes in northern Saskatchewan. (C. Cy.)

Saudi Arabia. This is an independent Arab kingdom covering three-quarters of the Arabian peninsula. Area: c. 597,000 sq.mi. excluding the Rub' al-Khali desert covering c. 193,000 sq.mi. Pop. (no census ever taken; 1951 est.) 6,000,000. Chief towns: Riyadh (cap., 60,000); Mecca (150,000); Medina (45,000); Jedda (40,000); Hufuf (31,500). Ruler, King 'Abd-al-'Aziz ibn 'Abd-al-Rahman ibn Sa'ud; viceroy of Nejd and commander in chief, Amir Sa'ud, crown prince; viceroy of Hejaz and minister of foreign affairs, Amir Faisal, the king's second son.

History.—In Jan. 1952 King Ibn Sa'ud addressed Egyptian King Farouk and Mustafa el Nahas Pasha (then the Egyptian prime minister), suggesting means for the solution of Anglo-Egyptian differences; later Saudi Arabia, as a member of the Arab league, ratified the Arab security and economic pact.

In February the Arabian American Oil company announced that it was transferring its operating headquarters from New York city to Dhahran in Saudi Arabia. The output from the company's oil fields in the Hasa province of Saudi Arabia, which had been stepped up to offset the loss of supplies from the Anglo-Iranian oil fields, was maintained in 1952 and showed an increase over the 1951 production figures of approximately 25%.

In July the Saudi Arabian government set up an official monetary agency in Jedda. Its objects were to strengthen and stabilize Saudi Arabian currency and to fix its foreign exchange rates, and to help the finance ministry by centralizing government receipts and by controlling budget expenditure. Its authorized capital of 500,000 gold sovereigns was to be provided by the government and its board of control would be appointed by the king on the nomination of the minister of finance. It was announced in August that George A. Blowers, U.S. finance expert, had been nominated as its first governor.

In May it was announced that the king of Saudi Arabia had ordered that the existing railway from Dammam on the Persian gulf to Riyadh, the capital (556 km., which were covered in nine hours), should be extended westward from Riyadh to Medina and on to Jedda. The extension would be of 1,200 km. Construction, it was estimated, would take four years. This trans-Arabian service was expected to assist pilgrim traffic from the far east considerably.

Other projects announced during 1952 included an irrigation scheme using surface water in the district of the Hejaz province of Saudi Arabia and the exploitation of newly discovered wells in central Arabia to supplement the water supplies at Riyadh. A tannery was to be erected in Jedda under British management. (O. M. T.)

Savings Banks: see BANKING.

Sawyer, Charles (1887–), U.S. secretary of commerce, was born on Feb. 10 in Cincinnati, O. He studied at Oberlin college, Oberlin, O., and at the University of Cincinnati, and was admitted to the bar in Ohio in 1911. The same year he was elected to the Cincinnati city council. From 1921 on he was a member of the law firm of Dinsmore, Shohl, Sawyer and Dinsmore. He served as lieutenant governor of Ohio beginning in 1933, and won the Demo-



LOCUSTS SWARMING over the headquarters of the Arabian American Oil company in Dhahran, Saudi Arabia, as employees used homemade noisemakers to beat off the pests from lawns and shrubs. The 1952 locust plague in the middle east extended from Libya to Pakistan

cratic nomination for governor in 1938, but was defeated in the election by John W. Bricker. In 1944–45 he served as U.S. ambassador to Belgium and minister to Luxembourg. He became secretary of commerce on May 6, 1948.

In 1951 Secretary Sawyer was under the fire of Sen. Herbert R. O'Connor (Dem., Md.) on charges that Sawyer had not halted exports to red China until O'Connor's senate commerce subcommittee had virtually forced him to do so. He was also the centre of legal action to force him and other U.S. officials to return the American President lines to the R. Stanley Dollar interests, he having been instructed by Pres. Harry S. Truman not to do so. (The case was settled out of court June 10, 1952, by an agreement providing for public sale of the company's stock.)

Sawyer technically was operator of the \$7,000,000,000 U.S. steel industry from April 8, 1952, when it was seized by the government, until June 2, when the seizure was ruled unconstitutional by the U.S. supreme court.

Schuman, Robert (1886–), French statesman, was born in Luxembourg. June 29, of a Lorraine family. Called to the bar in Metz before World War I, he was elected deputy for the recovered *département* of Moselle in 1919 and was afterward continually re-elected. On March 21, 1940, he was appointed undersecretary of state in the Paul Reynaud cabinet (a post which he kept after the armistice) and was responsible for the refugees from Alsace-Lorraine. When the Germans in Sept. 1940 started the expulsion of Lorrainers from the Moselle, Schuman was arrested by the gestapo and sent to Germany in April 1941 for protesting, but he escaped in Aug. 1942 and went into hiding in France. Again elected deputy of the Moselle in Oct. 1945, and later re-elected, he joined the M.R.P. (Mouvement Républicain Populaire). He was minister of finance in the Georges Bidault (June–November 1946) and Paul Ramadier (Jan.–Nov. 1947) cabinets. On Nov. 22,

1947, he was nominated by the national assembly to form a new government. He resigned on July 19, 1948, and joined the André Marie cabinet as foreign minister. On Aug. 31 he was again the head of a government that lasted only seven days. On Sept. 11 he became foreign minister in the Henri Queuille cabinet and was reappointed to this post in seven following cabinets. In a statement published on May 9, 1950, he launched what was described as the Schuman plan, which was aimed at the formation of a European Coal and Steel Community; on April 18, 1951, the plan became a treaty and he signed it on behalf of France. On May 26, 1952, at Bonn, Ger., he signed the "convention on relations between the three powers and the Federal Republic of Germany" and the next day, in Paris, a treaty establishing the European Defense Community.

Schuman Plan: see EUROPEAN UNION.

Scotland: see GREAT BRITAIN & NORTHERN IRELAND, UNITED KINGDOM OF.

Scrap: see SECONDARY METALS.

Sculpture. In view of its unexpected repercussions, the outstanding event of the year in sculpture was the exhibition "American Sculpture, 1951," presented by the Metropolitan museum, New York city, through Feb. 1952. This exhibition was the sequel to a similar large survey of current American painting held the previous year, which also generated controversy. It included 101 sculptures selected from about 5,000 photographs of work by approximately 1,100 sculptors. Awards totalled \$8,500. First prize went to Minna Harkavy for "Two Men," second prize to Rhys Caparn's "Animal Form I," third prize to Abbott Pattison's "Striding Man" and fourth prize to Joseph L. Greenberg, Jr., for "Eve."

Although the method of jurying and the personnel of the jury were carefully planned, the exhibition pleased few. It was condemned by the New York art press for its complement of dull or banal academic work, especially well illustrated by the inclusion of Paul Manship's gigantic study of two young soldiers, "Buddies," and also for the selection of numerous "modern" works which were superficial, derivative and incompetent in craftsmanship. (See also Lloyd Goodrich in *Art Digest*, March 1, 1952.)

The trend toward open-work sculpture continued in 1952, and also the use of metals and welding, as in "direct steel" sculpture. Such artists as Jacques Lipchitz, Alberto Giacometti, Alexander Calder, Henry Moore, Theodore Roszak and David Smith were among the most highly honoured and frequently exhibited and imitated.

At the Venice (It.) Biennale, the major sculpture exhibition of the year in Europe, the American section presented Calder alone, who won the President's prize for sculpture and proved a feature attraction. The French stressed Lipchitz and Émile-Antoine Bourdelle. The Italian sculptors Marino Marini, Alberto Viani and Luciano Minguzzi won prizes. At the U.N.E.S.C.O. (United Nations Educational, Scientific and Cultural organization) conference in Venice, accompanying the Biennale, which was dedicated to a study of measures to assure the freedom of the artist, Henry Moore led the section on sculpture.

One of the major American exhibitions of the year was "Sculpture of the Twentieth Century," organized by the Museum of Modern Art, New York city, with the collaboration of the Philadelphia (Pa.) Museum of Art and the Art Institute of Chicago (Ill.). Presenting more than 90 works from Auguste Rodin to the present, it opened in Philadelphia in October and was to continue in Chicago and New York city during most of 1953. In an earlier exhibition at the Museum of Modern Art, entitled "Fifteen Americans," the open-work metal sculpture



"GIRAFFE," a combined stabile (the sheet-metal body) and mobile (the light-as-air tail) by Alexander Calder, who was given first prize as the best foreign sculptor at the 1952 international art show in Venice, It.

of *avant-garde* artists Richard Lippold and Herbert Ferber was presented, and wood construction by Frederick J. Kiesler.

Among the many vigorous Italian sculptors, Marino Marini had been known and admired in America for several years. In 1952 Pericle Fazzini was given his first one-man show in New York city and made a hit with his small bronzes in a multitude of awkwardly graceful poses.

At the Pennsylvania Academy of the Fine Arts' 147th Annual Philadelphia, the first prize in sculpture went to Lipchitz, "Prometheus Strangling the Vulture." Like the Metropolitan exhibition, the other large annual surveys of American sculpture were not generally well received.

(See also ART EXHIBITIONS.)

(L. D. L.)

Great Britain.—Much interest was aroused by the position of Jacob Epstein, who received a retrospective exhibition during 1952 at the Tate gallery, London. His most recent work, the *maquette* for the large-scale "Madonna and Child" for the Convent of the Holy Child Jesus in Cavendish square, London, indicated that Epstein was continuing his attempt to convey general ideas in sculptural form. If this was not to be rated as one of his most successful works, the exhibition as a whole stressed that he remained one of the most powerful of modellers. In particular, his sculpture of Negroes demonstrated his solid appreciation for richly contrived figures, as well as his affection for firmly worked material. Henry Moore showed dissatisfaction with the plain statement of fact and a determination to reveal some of the inner meanings of existence, though he made no important contribution during the year. It was apparent in his art that he wished to enliven the ponderous forms of his human figures by an examination of some of the passions that direct existence. His sense of the evil within nature, which had appeared of late, related him to the painter, Francis Bacon. This trend lay less in the route of the now fashionable realism, and more toward symbolism.

Although men such as Lynn Chadwick, F. E. MacWilliam, R. Butler, Kenneth Armitage and William Turnbull proceeded along different paths, certain similarities of style and approach were noticeable. All these sculptors tended to avoid the treatment of the human form in the round and to fasten on its outline. Their favourite mediums proved to be iron, stone, wood and wire. With a few exceptions they avoided the monumental, concentrating on small figures or constructions, which rarely yielded pleasure to the touch. Their statements were linear rather than colouristic; cerebral rather than sensual. MacWilliam showed in certain of his works a return to naturalistic portraiture; in his dancing figures he attempted to convey the shock of the impact of two bodies. If the movement as a whole was still in reaction against Rodin, the investigation of movement, in terms of solid or nearly solid figures (as shown by MacWilliam's sculpture) no less than the symbolical content, suggested a feeling for the French master. Their sculpture proved well suited to the expression of states of mind: one critic called their figures and forms "waifs," and the sculptors' sense for desolation and poverty was translated in the material, which was often thin and gray. A similar lack of feeling for material (which may in part be attributed to the economic conditions of the time) was shown in France, where Germaine Richier proved successful with her gaunt, dramatic figures, which stemmed from Alberto Giacometti. Certain other sculptors—Alberto Viani in Italy, Emilio Greco in Greece and Marina Nuñez del Prado in Latin America—adhered to a more Mediterranean style and showed a warm affection for their material. A feeling for the surface play of objects, especially in wood, was displayed by Barbara Hepworth, and in her concern to give the silhouette form—memory of objects seen in nature—the touch of the hand was confirmed and retained.

This same sense for the properties of stone marked certain experiments in ornamentation undertaken by the painter Nicolas de Stael, who in his selection of material and in his work upon it showed the influence of Romanesque sculpture. (D. Sn.)

SEC: see SECURITIES AND EXCHANGE COMMISSION.

Secondary Education: see EDUCATION.

Secondary Metals.

The recovery of secondary metals for re-use supplies a large and growing

Table I.—Secondary Nonferrous Metals Recovered in the U.S.

(In thousands of short tons or fine ounces)

	1945	1946	1947	1948	1949	1950
Copper—tons						
As metal	112.9	136.9	303.1	284.0	250.1	260.7
In alloys	875.0	647.4	639.8	671.2	448.2	699.1
In compounds	18.7	19.2	18.8	17.6	14.8	17.4
Total	1,006.5	803.5	961.7	972.8	713.1	977.2
From old scrap*. . .	497.1	406.5	503.4	505.5	383.5	485.2
Lead—tons						
As metal	61.1	73.7	111.5	131.9	152.6	129.3
In alloys	301.9	319.1	400.5	368.2	259.6	353.0
Total	363.0	392.8	512.0	500.1	412.2	482.3
From old scrap*. . .	309.8	344.5	444.6	432.7	364.1	427.5
Zinc—tons						
As metal	83.9	81.4	97.1	102.2	84.2	104.1
In alloys	234.6	174.2	158.2	173.5	116.2	178.2
In compounds	41.9	45.0	55.5	49.0	37.4	43.7
Total	360.4	300.7	310.8	324.6	237.8	326.0
From old scrap*. . .	91.3	77.2	75.0	74.2	51.7	74.1
Tin—tons						
As metal	3.7	2.9	3.2	3.5	3.9	4.0
In alloys	30.9	24.3	26.4	26.0	20.7	30.7
In compounds	0.5	0.4	0.5	0.6	0.6	0.7
Total	35.1	27.7	30.1	30.1	24.9	35.5
From old scrap*. . .	24.0	17.6	19.0	20.1	16.5	24.2
Aluminum—tons						
As metal	2.1	2.1	5.1	2.4	0.3	2.1
In alloys	295.4	275.4	339.3	283.9	180.0	241.2
Total	298.4	278.1	344.8	286.8	180.7	243.7
From old scrap*. . .	27.3	90.5	163.8	95.6	44.6	76.4
Magnesium—tons						
Total (in alloys) . .	9.2	5.1	9.5	7.6	6.0	7.3
From old scrap*. . .	0.8	1.2	4.6	4.2	2.9	5.0

Table I.—Secondary Nonferrous Metals Recovered in the U.S. (Cont.)

(In thousands of short tons or fine ounces)

	1945	1946	1947	1948	1949	1950
Nickel—tons						
Total	6.5	8.2	9.5	8.9	5.7	8.8
From old scrap*. . .	2.2	2.7	2.8	2.9	1.9	4.8
Antimony—tons						
Total	17.1	19.1	23.0	21.6	18.1	21.9
From old scrap*. . .	15.1	16.1	19.2	18.0	15.0	18.8
Platinum—ounces . . .	58.9	40.4	54.2	58.5	41.7	33.9
O.P.M.†—ounces . . .	37.2	32.3	32.9	35.4	41.8	24.2
Gold—ounces	886	1,314	1,407	1,290	1,147	1,050
Silver—ounces	58,361	36,647	27,866	23,897	22,660	45,247

*Secondary metal recovered from old materials, the remainder having come from the reworking of new plant scrap. †Other platinum group metals.

Table II.—Scrap in the U.S. Iron and Steel Industry

(In thousands of short tons)

	Pig iron output	Steel output	Plant	Scrap consumption Purchased	Total
1939	34,895	46,079	19,622	16,705	36,327
1945	53,224	79,702	30,861	25,230	56,091
1946	44,842	66,603	26,134	23,350	49,484
1947	58,327	84,894	31,579	29,285	60,864
1948	60,073	88,640	32,420	32,544	64,964
1949	53,323	77,978	29,166	25,172	54,338
1950	64,810	96,836	32,094	29,403	61,497
1951	70,487	105,200	34,696	33,822	68,518

percentage of current consumption requirements and thus conserves the supply of primary metals. The latest production data available are shown in Table I, as reported by the U.S. bureau of mines.

Iron and Steel Scrap.—Since about half of the charge of the modern steel furnace is scrap, the scrap supply is usually short in periods of heavy demand for steel. In general, about half the supply is new metal, produced in the plant, and the other half is purchased scrap, recovered from broken, worn-out or obsolete equipment. Roughly, about one-fourth of each year's steel output represents scrap collected from the pool of metal in use.

(G. A. Ro.)

Secret Service, U.S. The major functions of the U.S. secret service, under direction of the secretary of the treasury, are protection of the person of the president of the United States, members of his immediate family, of the president-elect and of the vice-president at his request; the detection and arrest of persons committing any offenses against obligations and securities of the United States; the detection and arrest of persons violating certain laws relating to the Federal Deposit Insurance corporation, federal land banks, joint-stock land banks and national farm loan associations, as specified in 18 U.S.C. 3056; and the detection and arrest of any persons violating any laws of the United States directly concerning official matters administered by and under direct control of the treasury department.

The secret service also directs activities of the White House police force, which protects the executive mansion and grounds; and of the uniformed force, which protects the treasury building and other buildings housing treasury department activities, and the currency and other obligations and securities of the United States in production, storage and transit.

Although counterfeiting took a downward trend during the fiscal year ending June 30, 1952, as the result of several arrests of counterfeiters in Chicago, the public lost \$374,002 in counterfeit bills and \$5,860 in counterfeit coins passed on unsuspecting merchants and cashiers. In addition, the secret service captured \$393,802 in counterfeit bills and \$267 in counterfeit coins before they could be circulated, and arrested 279 persons for violating the counterfeiting laws. Agents seized nine plants responsible for the manufacture of 17 issues of counterfeit bills.

The forgery and fraudulent negotiation of government checks continued to be more than a \$2,000,000 racket. The secret

service received 28,586 forged checks for investigation and completed 30,091 forged check cases involving \$2,385,750.50. Special agents arrested 2,144 persons for check forgery.

Forgeries of stolen savings bonds added to the enforcement burden of the secret service, which received 4,227 forged bonds for investigation and closed 4,900 cases representing \$379,208.85. There were 105 persons arrested for bond forgery.

In addition to counterfeiters and forgers, the secret service arrested 159 persons for other crimes, making a total of 2,687 persons arrested. There were 2,422 convictions, representing 98% of convictions in cases that went to trial.

Prison sentences totalled 2,884 years and additional sentences of 2,538 years were suspended or probated. Fines in criminal cases prosecuted totalled \$23,734.02.

Cases of all types received for investigation, including counterfeiting and forgery cases, aggregated 39,884, and although 42,464 cases were completed during the year, there were 9,952 cases still awaiting investigation as of June 30. (U. E. B.)

Securities: *see* BANKING; STOCKS AND BONDS.

Securities and Exchange Commission.

A bipartisan, quasi-judicial agency of the U.S. government, the Securities and Exchange commission (SEC) administers several laws in the general field of securities and finance enacted for the protection of the investing public.

Securities Act of 1933.—This law prohibits fraud and deceit in the sale of securities generally, and requires disclosure of financial and other information concerning securities offered for public sale.

Prior to such public offering of securities, they must be registered with the commission through the filing of a statement containing prescribed data, and a prospectus summarizing the salient information must be delivered to investors. At the end of the fiscal year 1952, \$75,400,000,000 of securities had been so registered, a record of \$9,500,000,000 during that year.

Registration of securities does not guarantee against loss in their purchase. It merely seeks to provide investors with information upon which they may make an informed analysis of the securities and prudent investment decisions based thereon. Nor is registration a warranty of the accuracy of the facts disclosed, but investors who suffer losses in the purchase of registered securities have important recovery rights if material facts are misrepresented.

Securities Exchange Act of 1934.—Issuers of securities listed for public trading on national securities exchanges are required by this law to register and file annual and other periodic reports providing disclosure of data essential to investment analyses.

At the end of fiscal 1952, 3,588 security issues of 2,192 companies were so registered. The volume of trading therein during the fiscal year was \$19,500,000,000.

Holders of listed securities also must be provided with pertinent information when their proxies are solicited on corporate matters. In addition, management officials and large stockholders of listed companies must report their transactions in the equity securities of their companies and are accountable to the issuer for short-term trading profits therein—measures designed to curb misuse of "inside" information. During the fiscal year, 1,818 proxy statements and 21,026 insider trading reports were filed.

The law further provides a system for the regulation of securities markets designed to eliminate all impediments to free and open markets truly reflective of the law of supply and demand and the composite judgment of the investing public as

to the worth of securities. Exchanges as well as persons or firms engaged in an over-the-counter securities business must register and conform their business practices to standards designed for the protection of investors. Sixteen exchanges and 3,997 brokers and dealers were so registered at the end of fiscal 1952, as was one association of brokers and dealers organized for self-policing purposes in the over-the-counter markets.

Provisions of this law and the Securities act prohibiting fraud and deceit, manipulation and other abusive practices in the purchase and sale of securities are buttressed by SEC powers of investigation into securities violations and enforcement of strict sanctions which provide a means of punishing offenders and which also operate as a deterrent to defrauding of investors.

Public Utility Holding Company Act of 1935.—This law provides for the regulation of holding company systems of electric and gas utility companies in the interest of protecting investors and consumers against any recurrence of the evils which gave rise to its enactment, such as pyramiding of holding companies with complex corporate structures and multiple-security capital structures containing disproportionately large amounts of senior securities and resulting in a concentration of control in a few individuals and companies over large segments of the utility industry; issuance of securities against fictitious and unsound values; mismanagement and exploitation of operating companies by holding companies through excessive service charges, excessive common stock dividends, upstream loans and other extortionate intercompany transactions; and similar abuses. The law also calls for major overhauling of holding-company systems and their capital structures to the end that the operations of each system shall be confined to an integrated group of utility properties within a limited area and that pyramided corporate and complex capital structures shall be simplified and voting power redistributed among security holders on an equitable basis.

The readjustment process to June 30, 1952, resulted in a reduction in the number of registered utility holding company systems from 54 to 40; of holding companies from 77 to 57; of utility subsidiaries from 751 to 192; and of nonutility subsidiaries from 644 to 188. This was effected through the divestment by the various systems of companies and properties unrelated to their respective principal systems of integrated properties; by the liquidation and dissolution of useless and uneconomic companies; and by mergers, consolidations and reorganizations. The aggregate assets of the 40 remaining systems were only slightly less than the \$14,000,000,000 valuation of the original 54 systems, despite divestments aggregating \$10,500,000,000. But these figures do not present the full picture, for an additional 259 companies with assets aggregating \$6,200,000,000 had been divested by system companies but, because of their acquisition by or relationship to other holding companies, remained subject to the commission's jurisdiction under the law.

The existing size of the remaining 40 registered systems was attributable largely to the tremendous growth of the utility industry during recent years. In this connection, since 1947 the commission had passed upon the issuance and sale of \$5,500,000,000 of utility securities, the bulk of the proceeds of which were used for plant expansion. Before authorizing the sale of such securities, the commission must satisfy itself that they meet certain minimum statutory standards designed to protect the financial stability of the issuing company and to safeguard the rights and interests of investors and consumers. There was no doubt that the operation of this law was responsible in no small measure for the strong financial condition of the utility industry and its ability to carry out its vital role in the postwar industrial expansion and the defense program.

Upon completion of the integration and simplification pro-

gram, it was expected that about 20 holding company systems with assets of approximately \$7,000,000,000 would continue subject to the commission's jurisdiction under the law.

The commission also administers the Trust Indenture act of 1939, the Investment Company act of 1940 and the Investment Advisers act of 1940 and serves as adviser to federal courts in corporate reorganization proceedings under Chapter X of the Bankruptcy act. (D. C. Ck.)

Seeing Eye, Inc.: see SOCIETIES AND ASSOCIATIONS, U.S.

Seismology. Normal earthquake activity continued during 1952 with no great cataclysms and few shocks of unusual scientific interest. Popular excitement resulted, however, from the July 21 Arvin-Tehachapi shock, among the five strongest in California history. Twelve persons died, many were injured, and more than \$50,000,000 damage resulted in Kern county alone, Tehachapi sustaining almost complete destruction of its business district. In Bakersfield an oil refinery burned. State highways were blocked by landslides and several railroad tunnels were wrecked. Hundreds of aftershocks followed, mostly minor, although one on Aug. 22 near Bakersfield killed 2, injured 32, and damaged at least 100 buildings. This series of disturbances occurred over the little-known White Wolf fault system, south of Bakersfield and not related to the San Andreas fault.

The Chinese radio on Jan. 4 reported a hitherto undescribed quake of Dec. 21, 1951, as having killed 300 persons in western Yunnan, injured 1,537 and rendered 100,000 homeless. A quake struck the vicinity of Erzerum and Hasankale, Turk., on Jan. 3, collapsing 600 huts, killing 62 persons and injuring 250. Hokkaido, Japan, experienced a shock on March 4, among the strongest in Japanese history, which killed approximately 30 and made 2,800 homeless. Effects included derailed trains, inundation of 14 villages by tidal waves and the loss of 515 boats.

Quakes also occurred on March 19 near Mt. Etna, It., with 3 dead and 1,500 homeless; on June 10 at San Juan, Arg., where 2 died and 150 were injured; and on July 4 at Johannesburg, U. of S.Af., where 7 natives died in a mine rockburst. The scene of a devastating 1950 quake in the Toledo-Arboledas-Cucutilla area of Colombia was reshaken on April 19 with some damage. Numerous strong shocks spent themselves harmlessly in uninhabited areas of the world.

Under sponsorship of the United Nations Educational, Scientific and Cultural organization, two Pakistan seismograph stations were established at Quetta and Lahore, and a Jesuit station at Baguio, P.I., destroyed during World War II, was re-established.

Scientific interest was stimulated by publication of many technical papers. These dealt with such problems as earth-wave mechanics, the release and dissipation of earthquake energy, regional earthquake-wave travel speeds and the use of micro-seisms in hurricane detection. Engineering seismology held major interest. In this field of study, two symposium meetings were addressed by eminent seismologists and structural engineers. The larger of these, held at Los Angeles, Calif., was attended for three days by 350 engineers from all over the United States. Theoretical and practical papers indicated that solutions of some aspects of the complex problems of earthquake-resistant design were in sight.

The coast and geodetic survey, besides observing and analyzing strong earthquake motions for engineering purposes, continued to plot and report the locations and nature of observed quakes everywhere, and to map the seismicity of world areas for use by insurance companies in setting rates, for construction engineers in evaluating earthquake hazards and for scientists in



MAIN STREET of Tehachapi, Calif., on July 22, 1952, the morning after an earthquake, which centred on the town, destroyed about 150 houses and killed 12 persons. The tremor was felt over a 100,000 sq.mi area

attacking geophysical problems. (See also COAST AND GEODETIC SURVEY, U.S.; DISASTERS.) (E. B. R.)

Selective Service, U.S. The armed forces called on Selective Service for approximately 415,000 men during the calendar year of 1952, bringing the total of those called since passage of the draft legislation in June 1948 to approximately 1,150,000. Actual inductions were about 1,200,000.

Eighty thousand of the inductees were assigned by the department of defense to the marines, the others to the army, none to the navy or air force.

Calls are issued by the department of defense monthly in accordance with requirements of the armed forces. When the director of Selective Service receives a call, he apportions it among the states on the basis of the number of men available for service—that is, those in classification I-A, examined and found acceptable by the armed forces, with credit for those already in the armed forces. The states apportion their calls among their local boards on the same basis.

The end of the year 1952 saw a manpower pool which was draining rapidly; it became apparent that if the monthly calls continued at the rate to be reasonably expected—that is, somewhere in the neighbourhood of 50,000—it would be necessary to do one or both of two things: (1) tighten the deferments provided for in the basic law, which would require congressional action; (2) tighten the deferments provided for by regulation under authority of the law, which would require an executive order of the president.

In the autumn of 1952, Selective Service reports showed the classifications listed in the table on page 630.

Scrutinized especially were student and dependency deferments provided for by regulation. There were almost 200,000 of the former, not including about 320,000 R.O.T.C. deferments and about 1,000,000 dependency deferments. Congressional ac-

*Availability and Classification of Registrants,
United States and Territories, 1952*

	Number
Total living registrants	13,464,174
Total classified	12,852,458
Classifications	
I-A and I-A-O, examined and acceptable	249,128
I-A and I-A-O, not examined	918,214
I-A and I-A-O, induction postponed	23,216
I-S, statutory (high school)	45,649
I-S, statutory (college)*	6,281
I-O, examined and acceptable	2,072
I-O, not examined	4,931
I-C (inducted)	946,479
I-C (enlisted or commissioned)	1,379,721
I-C (discharged)	250,782
I-C (reserve)	153,289
I-W (at work)	58
I-W (released)	—
I-D* (reserve or student taking military training)	337,018
II-A (app.)	66
II-A* (occupation)	32,970
II-C* (agriculture)	99,620
II-S* (student)	177,440
III-A* (dependency, hardship)	1,040,743
IV-A (completed service, sole surviving son)	1,491,153
IV-B* (officials)	17
IV-C (alien)	10,808
IV-D (minister or divinity student)	61,746
IV-F* (rejected, unfit)	1,492,109
V-A (over liability age)	4,128,948

*May include some 26 and over liable up to 35.

tion would be necessary to lower the number of R.O.T.C. deferments. Dependency and student deferments could be lowered by amending regulations through executive order of the president.

The first of the third nation-wide series of Selective Service college qualification tests was held Dec. 4, 1952, at 1,000 testing centres. The second was scheduled for April 23, 1953, and it was estimated that the total number of students taking the test would reach 500,000 on that date. Local boards use the test scores, or class standing of students, to determine eligibility for consideration for deferment.

To be eligible to apply for the college deferment test a student must (1) intend to request deferment as a student; (2) be satisfactorily pursuing a full-time course of instruction; and (3) must not previously have taken the test.

At the beginning of 1953, criteria for deferment as an undergraduate student were either a satisfactory score (70) on the Selective Service college qualification test or specified rank in class (upper half of the male freshman class, upper two-thirds of the male sophomore class or upper three-fourths of the male junior class).

Students accepted for admission or attending a graduate school prior to July 1, 1951, satisfied the criteria if their work was satisfactory. Graduate students admitted or attending after July 1, 1951, must have been in the upper half of their classes during their senior year or have a score of 75 or better on the test. It was not mandatory for local boards to follow the criteria in classifying students, but all registrants had the right to appeal their classifications under established procedure.

There were indications near the end of the year that the criteria would be made more strict. In the first series of tests 63% of the students achieved a score of 70 or better. In the second series 58% of the students made 70 or better. The tests in all three series were equivalent in difficulty.

At the end of the year Selective Service had been called on for a total of approximately 2,500 physicians and 1,200 dentists by the department of defense under provisions of the Doctors' and Dentists' Draft law.

This law provides for division of physicians, dentists, veterinarians and allied specialists into four priorities and was passed by congress because of urgent need of physicians and dentists by the armed forces and because of a widespread feeling that young men who had been deferred during World War II to continue their professional education, or were professionally educated after entering the armed forces at government expense, had an unfilled obligation.

In priorities I and II were those physicians, dentists and veterinarians under 51 years old who were deferred to continue their professional training or were trained professionally at government expense after entering the armed forces and who subsequently served less than 90 days (priority I) or 21 months (priority II). In priority III were physicians, dentists and veterinarians under 51 who saw no active service after Sept. 16, 1940, and in priority IV were those who had been in service since Sept. 16, 1940.

The law contained ample provisions to protect communities against being stripped of essential medical and dental services, and its purpose was to encourage acceptance of reserve commissions by men qualified, without resorting to induction by Selective Service.

How well the law was fulfilling that purpose is attested by the fact that near the end of the year only 6 physicians and 14 dentists had actually been inducted; whereas approximately 5,000 physicians and 2,500 dentists had voluntarily accepted reserve commissions and then been called to active duty as reservists.

One inducement for volunteering for a commission was a flat \$100 additional monthly pay; those who waited for induction did not receive this additional amount.

Inauguration of a project under which apprentices in approved training programs could be deferred was one of the high lights of the year. Another was the launching of a program to meet requirements of the law for placing registrants classified as conscientious objectors opposed to any kind of military service in jobs considered essential to the national health, safety or interest. Both were put into effect by executive order of the president on recommendation of the director of Selective Service. (See also LAW.) (I. W. H.)

Selenium: see MINERAL AND METAL PRODUCTION AND PRICES.

Senanayake, Dudley Shelton (1911-), Ceylonese statesman, was born at Colombo June 19 and was educated at St. Thomas's college, Colombo, and at Corpus Christi college, Cambridge. When only 24 years old he was elected to the Ceylonese state council, becoming its youngest member. When his father became prime minister of Ceylon in Sept. 1947, Dudley succeeded him as minister of agriculture and lands. On March 22, 1952, his father died from a riding accident, and four days later Lord Soulbury, the governor general, called on him to succeed his father as prime minister, minister of defense and minister of external affairs. He announced his government on the same day. On March 31 he went to Kandy, where he knelt before the Sacred Tooth relic, dedicating himself to the cause of Ceylon. He was unanimously elected president of the United National party, and immediately asked the governor general for a dissolution of the house of representatives. He conducted a strenuous election campaign in which he made at least six speeches daily, and was re-elected in his own constituency of Dedigama. The elections (May 24-30) resulted in a majority for the United National party, and Senanayake reformed his cabinet on June 2. He attended the commonwealth prime ministers' conference in London Nov. 27-Dec. 11.

Senate: see CONGRESS, UNITED STATES; ELECTIONS, U.S.

Senegal: see FRENCH UNION; FRENCH WEST AFRICA.

Seventh-day Adventists. The two most prominent events in the life of this church in 1952 were: (1) The centenary of the Sabbath school department. In 1852 in Rochester, N.Y., James White, one of

the founders of the church, prepared the first Sabbath school lessons for less than 1,000 members. The world Sabbath school membership at the end of 1951 was 1,034,060. (2) The Bible conference held in September at the international headquarters, Washington, D.C., to which delegates came from all over the world. This conference, first of its kind since 1919, restudied and reaffirmed the doctrines of the church. The world membership of the church—baptized members only—at the close of 1951 was 803,720. The membership in the United States and Canada on June 30, 1952, was 264,969. For the year 1951 this North American segment of the membership contributed \$41,000,000 to the church. The autumn council, the major annual assembly of the church leadership, voted a budget of \$18,562,822 for the year 1953, most of which was to go for the maintenance and expansion of overseas missions and none of which was to be used to meet the operating expenses of churches in North America. This budget was the largest in the history of the denomination, being \$1,500,000 higher than that for 1952. Important measures voted by the autumn council included the following: to create a Legion of Honor to rally the youth of the church against degrading literature, movies, sports, etc.; to endeavour, through education and legal action, to repeal city ordinances that prevent the free circulation of literature from home to home; to intensify the program, initiated a year earlier, to conduct an evangelistic mass meeting in every major city in North America; to place a certain piece of evangelistic literature in at least one-fourth of the homes in North America in 1953; to expand greatly the campaign against liquor; to hold a Pan-American youth congress in the summer of 1953 for the youth of North and South and Inter-America; to publish a weekly journal for Adventist juniors. (See also CHURCH MEMBERSHIP.) (F. D. N.)

Seychelles. British colony and dependencies, 92 islands (Mahé being the largest) in the Indian ocean. Area: 156 sq.mi. Pop.: (1947 census) 35,232, mainly Negro; (1951 est.) 37,000. Language: English, French creole patois. Religion: Christian (c. 66% Roman Catholic). Capital, Victoria (pop. 1947: 9,478). Governor in 1952: Frederick Crawford.

History.—In 1952 a fall in the price of copra from £95 to £48 a ton caused a setback to development and a revision of government expenditure, and gave added importance to the current policy of diversifying the colony's agricultural production. The Colonial Development corporation's fishing experiment had to be abandoned because there were not enough fish. A small outbreak of poliomyelitis occurred in April. (K. G. B.)

Education.—Schools (1951): 23 primary (3,965 pupils); 2 modern (129 pupils); 2 secondary (188 pupils); 1 technical training centre.

Finance and Trade.—Monetary unit: Seychelles rupee, valued in 1952 at 21 cents U.S. Budget (1952 est.): revenue Rs. 4,802,154; expenditure Rs. 4,997,241. Foreign trade (1951): imports £407,000; exports £838,000. Production (1951): copra 6,571 tons, cinnamon oil 99,332 kg.; cinnamon bark 207 tons; vanilla 484 kg. Livestock (1950 census): 2,112 cattle; 2,328 pigs; 1,200 goats; 40,000 chickens.

See F. D. Ommanney, *The Shoals of Capricorn* (London, 1952).

Shamun (Chamoun), Camille (1899–), Lebanese statesman, was born at Deir el-Kamar, Lebanon. He was a member of an ancient family of Christian (Maronite) Arabs, was sent to a French Roman Catholic secondary school at Beirut, and later obtained a law degree at the French university there. After World War I he joined the Beirut bar and took an active part in political life. He was elected deputy in 1934, was constantly re-elected and from 1938 served as minister of finance of the regional Lebanese government under the French mandate. In 1943 he sided with those who supported Lebanese independence and was appointed minister of the interior in the first Riad Solh cabinet (1943–45). From 1945–47 he served as minister to

Great Britain. Returning to his country he became minister of finance in the third Solh cabinet. He resigned in 1948, opposing the re-election of Sheikh Bishari al-Khuri as president of the republic for a second six-year term. He was instrumental in forcing al-Khuri's resignation three years before his term of office was to expire. His election as president of the republic on Sept. 23, by 74 votes to 2, in a chamber in which al-Khuri's supporters were in great majority was a personal triumph for Shamun, who was universally respected for his character and integrity.

Sheep: see LIVESTOCK.

Shipbuilding. The world tonnage of merchant vessels (each of 1,000 gross tons or more) registered as of June 30, 1952, was distributed as follows among the principal maritime nations:

Country	Number of vessels	Gross tonnage (in thousands)	Country	Number of vessels	Gross tonnage (in thousands)
United States*	3,441	25,627	Greece	211	1,176
British Commonwealth	3,006	18,795	Finland	193	526
Norway	961	5,532	Brazil	182	684
Sweden	594	2,157	China	143	414
France	559	3,276	Argentina	141	902
Panamá	550	3,730	Turkey	109	387
Netherlands	496	2,866	Portugal	93	419
U.S.S.R.	477	1,456	Belgium	75	428
Italy	517	3,048	Honduras	79	425
Japan	497	2,378	Liberia	99	942
Denmark	312	1,259	Yugoslavia	53	225
Spain	268	982	Other Countries	413	1,581
Germany	319	1,001			
Total				13,788	80,216

*Excludes vessels operating on the Great Lakes.

The total of 80,216,000 gross tons of vessels in the world fleet represented an increase of 2,792,000 gross tons since June 30, 1951. However, the United States fleet during the same period decreased by 36 vessels, aggregating 142,000 gross tons. The remainder of the world gained approximately 2,934,000 gross tons of shipping.

The Shipbuilders Council of America reported as of July 1952 that 1,829 vessels (each of 1,000 gross tons or more), aggregating 15,858,472 gross tons, were under construction in the various maritime countries of the world, excluding the U.S.S.R.

The gross tonnage total of 15,858,472 was an increase of 4,119,209 since July 1951. With the exception of Trieste, which showed a slight reduction in gross tonnage from that of July 1951, all countries showed an increase shared in fairly equal proportion.

United States.—On Jan. 1, 1952, 80 seagoing commercial vessels (each of 1,000 gross tons or more), aggregating 1,074,320 gross tons, were under construction or under contract for construction in the private seaboard shipyards of the United States. These consisted of 1 passenger vessel, 35 cargo vessels, 3 navy transports, 37 tankers, 3 lake ore carriers and 1 river ore carrier.

At the same time there were contracted for or under construction in the Great Lakes shipyards 16 vessels (each 1,000 gross

Merchant Ships under Construction in the World, July 1952

Country of Building	Number of vessels	Gross tonnage (1,000 gross tons or more)
Great Britain	721	6,372,144
Sweden	193	1,778,265
Germany	245	1,722,726
United States	102	1,364,370
Netherlands	135	1,106,600
Japan	64	700,750
Norway	83	578,259
France	92	859,688
Denmark	63	408,434
Italy	33	294,620
Belgium	23	233,671
Canada	14	125,000
Spain	35	174,437
Trieste	7	59,700
Australia	17	77,508
Ireland	2	2,300
Total		15,858,472

tons or over) aggregating 176,870 gross tons. These consisted of 2 large passenger railway ferries, 1 large passenger auto ferry and 13 bulk ore carriers (including 2 self-unloaders).

There were 21 new vessels delivered in the United States in 1952 up to Oct. 1 as follows: 1 passenger vessel, 6 tankers, 9 lake ore carriers, 1 river ore carrier, 2 navy transports, 1 passenger auto ferry and 1 passenger railway ferry.

Of special interest was the delivery of the passenger ship the S.S. "United States," the largest and fastest commercial vessel ever built in the United States, which was put in service by the United States lines in July 1952.

The first nine months of 1952 witnessed the launching of 11 cargo vessels of the Maritime administration's program of 35 "Mariner" class ships. These were the largest and fastest cargo ships afloat, each having a capacity of 12,900 dead-weight tons. Construction of these vessels, which were 560 ft. 10 in. long over-all and had a speed of 20 knots, was divided among seven of the United States shipyards.

During the year 1952 up to Oct. 1, contracts for 21 vessels were awarded, all tankers, with the exception of 1 lake ore carrier.

As of Oct. 1, 1952, there were 96 merchant vessels (of 1,000 gross tons or over), aggregating 1,314,780 gross tons, under contract for construction in the United States of which 9, aggregating 102,300 gross tons, were for construction in the shipyards on the Great Lakes, and the remainder in seaboard shipyards. In addition to the somewhat inadequate allocation of steel in the early part of the year, the steel strike further retarded construction, which in general was from four months to one year behind original schedules.

During the year 1952 the U.S. navy continued its program inaugurated in 1951 of reactivation, modernization and new construction, resulting in the award to private shipyards of contracts for a second nuclear-powered submarine and for mine sweepers, fleet oilers, tank landing ships and an icebreaker, as well as patrol and other service boats. This work, in addition to a number of contracts for small vessels including landing craft, harbour tugs and floating cranes awarded by the navy for the army, was widely distributed to shipyards throughout the United States.

The volume of repair work in the United States yards remained fairly steady throughout the year, with no appreciable change in employment. There was, however, a heavy return to preservation status of commercial vessels which had been pulled out of reserve for operation under the jurisdiction of the National Shipping authority. This reduced the possible number of maintenance and voyage repairs, but the situation was balanced by navy conversions and other work for which the navy awarded contracts, as well as by the continuation of the T2 (tanker) strengthening program. (H. G. S.)

Great Britain.—Outstanding features of shipbuilding in Great Britain during 1952 were the high proportion of the total volume of work represented by oil tankers and the insufficiency of steel. Besides not securing all the steel they needed, builders were troubled by the irregularities of supplies.

The ability of the shipyards to absorb larger quantities of raw materials was emphasized by the considerable volume of work proceeding and by the number of orders, which was the heaviest ever recorded. The volume of shipping under construction in the yards of the United Kingdom throughout the year according to returns of *Lloyd's Register*, ranged between 2,000,000 tons and 2,270,000 tons gross. At 2,062,482 tons gross the amount under construction on Sept. 30 represented a decline as compared with 12 months previously of more than 200,000 tons gross. This was a reflection of the insufficiency of steel.

In reply to urgent representations the allocation for the last quarter of the year was 8% more than for the third quarter, and on Oct. 22 the civil lord of the admiralty announced that the allocation for the first quarter of 1953 would be higher by 9% than that for the last quarter of 1952.

During the first nine months of 1952 orders were received by British builders for a little more than 1,000,000 tons gross of new British shipping. There were on Sept. 30 nearly 7,000,000 tons gross in the order books of the builders, which represented a current value of about £670,000,000. Work for owners abroad represented 34% of the total. Oil tankers constituted more than 56% of all orders on the books, cargo liners 22% and cargo tramps 12%. There were comparatively few passenger liners under construction. (Ct. M.)

Shipping, Merchant Marine. The U.S. merchant marine consisted of 3,347 ocean-going vessels of 1,000 gross tons and more on Sept. 30, 1952. A total of 45% of this fleet was in active service. The active vessels numbered 1,495, divided between 978 dry-cargo ships, 71 combination passenger and cargo vessels and 446 tankers; 85% of the active fleet was privately owned; the rest were government-owned vessels.

This was in sharp contrast with the situation existing on Jan. 1, 1952, when the active fleet numbered 2,009, of which 36% were government-owned ships. The drop in active government-owned ships was caused by a partial reversal of the conditions which had brought about the withdrawal of large numbers of government ships from the reserve fleets shortly after the outbreak of war in Korea.

At that time there were not enough privately owned vessels available to carry the troops and military supplies needed to support the United Nations in Korea, and the best and fastest ships, mostly of the Victory type, were withdrawn by the Maritime administration from its reserve fleets for use by the military sea transportation service. In addition, severe shortages of coal and grain in Europe and Asia made it necessary to obtain emergency supplies from the United States. The Maritime administration therefore withdrew many of the slow but capacious Liberty ships from reserve to supplement the privately owned vessels carrying these supplies abroad.

The National Shipping authority had been set up within the Maritime administration of the U.S. department of commerce in March 1951 as part of the mobilization effort to direct government-controlled shipping in programs of national interest. Government ships were operated under the direction of this agency by private companies serving as its general agents. In the year following its establishment, the NSA appointed 48 companies as general agents, withdrew about 460 vessels from reserve and directed the shipment of 13,500,000 tons of non-military cargo overseas, in addition to making tonnage available to transport military supplies.

By the early part of 1952, however, there was a falling off in demand for foreign-aid cargoes. A mild winter in Europe and increased production capacity abroad lowered the requirements for imports of coal and grain from the United States, and a rapid addition of new vessels to foreign fleets increased the number of ships available to carry the cargoes. Consequently, on the first anniversary of its establishment, the NSA announced that 120 ships were being withdrawn from service to avoid competition of government-owned with privately owned ships. By Oct. 1, 1952, 543 government ships had been returned to reserve by general agents, and only 93 were still in operation, all engaged in carrying military supplies.

In addition to the vessels under general agency, there were a few government-owned vessels under charter to private com-

panies to help provide service in trades considered important to the national interest, for which privately owned vessels were not available or were not available at reasonable rates and conditions. These charters had also been steadily declining, however, from 217 on Jan. 1 to 65 on Oct. 1, 1952. The need for these few was being challenged by tramp ship owners, who were finding it difficult to keep their own ships in operation in a steadily falling freight market. At the end of September the Federal Maritime board was reviewing the necessity for these charters.

There were about 100 large vessels under construction or on order in United States shipyards throughout the first nine months of 1952. Thirty-five of these vessels were of the "Mariner" type, ordered by the Maritime administration in 1951 to provide a group of 20-knot cargo vessels of 12,900 tons cargo capacity, especially designed to meet the competition of improved foreign vessels built since the end of World War II and to provide the armed services with auxiliaries suited to modern high-speed warfare. By Oct. 1, 1952, 11 of these vessels had been launched. The first two were delivered early in October, and were assigned under general agents to carry military supplies.

A total of 85% of the other large vessels under construction in United States yards on Oct. 1, 1952, were tankers ordered by private operators. In June 1952 the largest and fastest passenger liner ever built in a United States shipyard, the S.S. "United States," was delivered into service. On her maiden voyage across the North Atlantic, this 53,000-gross ton vessel broke all speed records for merchant ships, at times exceeding 34 knots. (A. W. Gv.)

Great Britain.—Conditions affecting the employment of both ordinary cargo ships or tramps and passenger and cargo liners underwent great changes in Great Britain in 1952. An early intimation that the British government did not propose to import further large quantities of coal from the United States was a considerable influence in the freight markets, for the purchases of more than 1,000,000 tons of coal during 1951 had been an important factor in the rise in freight rates generally. There was also not the same urgency about the arranging for the importation of timber and grain as had stimulated the freight markets in 1951.

Freight rates began to decline early in 1952 and, with the exception of one small upward movement during May, they continued to fall till autumn was well advanced.

In March the Australian government announced a drastic cutting down of imports. Australia had been importing throughout 1951 on an unprecedented scale, and the liner companies had been unable to carry the immense volume of merchandise which Australian importers wanted. The lines had therefore been chartering tonnage freely, and the declaration of the Australian government that imports were excessive and must be curtailed found the regular lines with more tramp tonnage chartered than they could employ.

Imports of all kinds of manufactures to New Zealand had also been rising and the regular lines had found it necessary to charter additional ships to supplement their own sailings. Imports were restricted in the spring of 1952 by limitation of credit and other means and the chartering of additional ships was no longer required. This cessation of chartering for the Australian and New Zealand trades withdrew one of the main supports of tramp shipping.

The marked changes in the freight situation which began with the outbreak of war in Korea were indicated in the freight index numbers of the Chamber of Shipping of the United Kingdom. These figures were based on 100 as the average of the monthly numbers for 1948. In May 1950 the figure was 71.4. This rose sharply with only one check until 203.8 was reached in May

1951. Then with certain interruptions a downward movement began and in Jan. 1952 the figure was 163.9. Following a slight recovery during May 1952, the number declined until in August 79.2 was reached, which was below the figure for Aug. 1950 of 86.6. Meanwhile expenses had risen sharply, particularly of oil fuel. The wages of British seafarers had been increased, and freight rates which would have left a profit before the Korean war began became unremunerative. Some owners, both in Great Britain and in other European countries, decided to lay up their ships and many others kept ships in port, with skeleton crews on board, in the hope that freight rates would before long take a turn for the better.

Those owners were fortunate who had modern oil-burning steamers or motor ships in their service, for it was found that only efficient, economical ships could cover their expenses or earn small margins of profit at the ruling rates. The newest ships, however, were at a disadvantage because although economical to operate they had cost so much to build that allowance for depreciation at the traditional rate of 5% and interest on the large capital invested imposed a heavy charge on earnings.

The decline in tramp rates emphasized the claim of British owners that high taxation absorbed too much of their earnings and, one after another, spokesmen for shipping companies urged the need for some provision that earnings set aside for replacement should not be taxed. Failing such treatment, owners foretold the gradual diminution of fleets of dry-cargo ships. Although in total volume the tonnage of the British mercantile marine before World War II had been regained, this recovery was partly the result of a great increase in oil-tanker tonnage. Some of the best-known British cargo fleets were only a fraction of their prewar size.

In the autumn there was some expansion of the demand for cargo shipping. Among the influences was a strong demand for ships to carry grain from North America to India and Pakistan. Generally the demand for shipping became widespread, and there was some competition between different markets for tonnage, a state of affairs which is always favourable to owners.

Subject to the falling off of shipments in the Australian route, cargo liners continued to be well employed. Demands on the passenger accommodation continued heavy. The passenger season in the North Atlantic opened unusually early in the spring and closed exceptionally late in the autumn. (Cr. M.)

THE "FLYING ENTERPRISE," storm-damaged merchant ship, being towed (from off left) toward a British port in Jan. 1952. Capt. Henrik Kurt Carlsen, who remained with the U.S. freighter until the tow line snapped and it sank, was knighted for his courage by King Frederick IX of Denmark



Shoe Industry.

During 1952, shoe manufacturers in the United States maintained steady production from 60% to 100% of plant capacity, and it was estimated that year-end totals would show about 500,000,000 pairs of shoes manufactured, as compared with 469,599,000 pairs in 1951. Military shoes accounted for 20,000,000 pairs in 1951 and approximately 5,000,000 or 6,000,000 pairs in 1952.

There were several factors that contributed to this position. Leather was in good supply. Prices had been readjusted downward and reflected the sharp declines that had taken place in the hide and skin market. Inventories were kept in line and manufacturers concentrated their efforts on quality, construction, materials and attractive new features.

Some of the highlights that were given prominence were: soft construction and more femininity in women's shoes; the bare minimum shoe, achieved with very narrow strippings; the Spanish and Italian influence in the banded shoe with one or two wide or narrow bands placed strategically to hold the shoe firm on the foot. Foam cushioning in the sole or throughout the entire bottom of the shoe was a new feature to give added comfort. Colourful casuals, with flat or wedge heels, accounted for a good proportion of shoe production. In children's shoes, colour was a dominant factor, and navy and red took precedence over the generally accepted black and brown. Children showed a preference for styling that approximated adult shoes. Nylon mesh and the casual slip-on types of men's shoes gained in favour and acceptance during 1952.

On Sept. 23 the Office of Price Stabilization suspended price controls on shoes at the manufacturing, wholesale and retail levels. All types of shoes and slippers were included, with the exception of all-rubber shoes (overshoes, galoshes and tennis footwear). In the all-rubber category, the manufacturers' ceiling was retained.

Shoe Production in the United States

	1951*	1952†
Men's shoes	105,949,000	67,659,000
Boys' shoes	14,497,000	12,040,000
Women's shoes	206,302,000	160,979,000
Misses' and children's shoes	54,817,000	42,126,000
Infants' and babies' shoes	33,911,000	24,272,000
All others	54,123,000	33,700,000
Total	469,599,000	340,776,000

*Includes 20,000,000 pair military shoes.

†Production for first eight months; includes 5,000,000 pair military shoes.

In retailing, clearance sales in January and early February weeded out odds and ends and brought inventories into a more reasonable ratio to consumer demand. Unit-wise, more shoes were sold during the first six months than in the same period of the previous year. Dollar-wise the return was less. This decrease was accounted for by a drop in shoe prices estimated at 15% at the retail level.

A drastic decline in hide and skin prices early in the year was attributed, to some extent, to unloading of heavy inventories by some packers. Recovery in the raw materials market began to be felt early in May and fluctuations up or down were in ratio to demand.

Leather was in a more competitive price bracket with substitute materials, and a broad educational program was launched by the Leather Industries of America, sponsored by the tanners and leather manufacturers of the United States, to inform the consuming public of the quality ingredient of leather. (See also LEATHER.)

(E. G. AN.)

Shooting.

The 53rd Grand American tournament, major event of trapshooting, attracted a field of more than 1,800 crack marksmen to Vandalia, O., in Aug. 1952, and when the long competition had ended, the Grand American handicap prize for men was in possession of Orval E. Voorhees

of Grand Island, Neb., who broke 98 of 100 targets from 18 yd. to defeat Ned Lilly, Stanton, Mich., who scored 97 X 100 from 25 yd. Marjorie Miller, Newton, Ia., took home the Grand American handicap trophy for women with a tally of 91 X 100 from 18 yd. Myrtle Wiese, Seattle, Wash., with 90 X 100 from the same distance, was the runner-up.

Rudy Etchen, Sun Valley, Ida., won the North American clay target crown with 200 X 200 after a shoot-off with F. D. Daily and Kenneth S. Houck. Etchen also took the high-over-all laurels with 961 X 1,000 and was the all-around champion with 381 X 400. Mrs. Frances King, Atlanta, Ga., annexed three of the top prizes for women, winning the clay target event with 197 X 200, the all-around laurels with 361 X 400 and the high-over-all with 919 X 1,000.

A. M. Perkins, Shreveport, La., took the North American clay target money for professionals, scoring 200 X 200, the pro Grand American handicap being captured by Don Flewelling of Harvey, Ill., who had 90 X 100 from 25 yd. Vic Reinders, veteran from Waukesha, Wis., was crowned champion of champions, but only after a three-way shoot-off with Arnold Riegger, Seattle, and M. D. Clark, Woodbury, Conn. Mrs. Julius Petty, Stuttgart, Ark., won similar honours for women after an extra shoot with Mrs. Frances King and Iva Pembridge, Phillipsburg, Kan. Cliff Doughman, Morrow, O., was the professional all-around victor with 370 X 400. David Brooks, Kewanee, Ill., triumphed in the junior Grand American handicap although Bob Autry, Atlanta, was the North American clay target, national doubles, high-over-all and all-around champion in the junior division. Mercer Tennille, Shreveport, won the national doubles; Iva Pembridge annexed the women's and Doughman the pro doubles.

The invitation amateur championships of America were held at Pelham Manor, N.Y., in May and Walter Ostrom, Orangeburg, N.Y., with 199 in the 200-target test, was among the victors. Other major winners were Mrs. W. L. Battersby, Philadelphia, Pa., 100-target women; E. E. Gardner, Bernardsville, N.J., 100-target seniors; Dick Baldwin, Danbury, Conn., 200-target junior and invitation, and H. L. McKinley, Harrisburg, O., 100-target preliminary and doubles.

Lewis Gordon, Texarkana, Ark., scoring 540 X 550, took the high-over-all title in the championships of the National Skeet Shooting association at Dallas, Tex. Major Harry B. Trimble of Hickam air force base, Honolulu, T.H., annexed all-gauge honours with 250 X 250 and the service individual laurels. Grant Ilseng, Houston, Tex., was the champion of champions and D. W. Conway, Clint, Tex., triumphed in the 20-gauge group. Jimmy Clark, Bartlesville, Okla., made a near sweep of the junior prizes, being high-over-all, all-gauge, 20-gauge and sub-small-gauge victor. He also teamed with David White, Tulsa, Okla., for the open small-gauge two-man award. Joseph M. George, Sudlersville, Md., captured the high-over-all and J. H. Frost, Sr., San Antonio, Tex., the all-gauge titles for seniors. Nancy Burrus, Dallas, won two major prizes for women, the high-over-all and the all-gauge and Mrs. Alphonso Ragland, Jr., Dallas, was the 20-gauge victor.

A new world record long run of 614 straight targets with a 20-gauge gun was set by Tom Sanfilipo of San Francisco, Calif., in the San Joaquin, Calif., open skeet shoot, May 3-4. The mark bettered by 168 targets the former standard set by Dick Shaughnessy of Dedham, Mass.

National rifle champions for the year included Robert Perkins, Fresno, Calif., small bore; Major Robert A. Dawson, Barstow, Calif., high-power service rifle, and Lieut. Col. Walter Walsh, Arlington, Va., high-power match rifle. Betty Ingleright, Buchanan, Mich., won with the small-bore gun among the women and Alice Bull, Seattle, triumphed with the high-power match

weapon. William T. Toney, Jr., El Paso, Tex., captured national pistol laurels for men and Maria Hulseman, Towson, Md., was queen of the women. (See also OLYMPIC GAMES.) (T. V. H.)

Shows. This article covers horse and dog shows, livestock exhibitions and such travelling shows as circuses, carnivals, ice skating shows and rodeos. For musical and dramatic events of 1952, see the articles MOTION PICTURES, MUSIC, THEATRE and DANCE.

Horse Shows.—The two largest and most representative horse shows in the United States in 1952 were those of the International Live Stock exposition in Chicago, Ill., Nov. 29 through Dec. 6, and the American Royal Horse show in Kansas City, Mo., Oct. 18 to 25. Both were among the oldest established horse shows in the country and were outstanding in the quality, number and variety of pleasure horses that they featured. They included exhibitions of three- and five-gaited saddle horses, harness horses and ponies, roadsters and hunters and jumpers. The International also featured creditable competitive exhibitions of three draft horse breeds, which were fast disappearing from the show scene. The 1952 International included for the first time a national cutting horse contest in which 16 top western riders and their mounts, for the most part quarter horses, competed for substantial purses and the honour of taking part in the year's final contest, held annually at the Grand National show in November at San Francisco, Calif.

Two of the year's largest competitive showings of quarter horses, a breed increasingly popular in ranch and farm work, so named for its reputation as the fastest horse over a distance of a quarter of a mile, were seen at the National Western Stock show in Denver, Colo., Jan. 11 to 19, 1952, and at the Southwestern Exposition and Fat Stock show in Fort Worth, Tex., Jan. 28 to Feb. 3.

The Kentucky state fair, Sept. 5 to 13, at Louisville, was one of the year's leading competitive saddle horse shows; and the year's top exhibition of hunters was at the National Horse show, Nov. 4 to 11, in Madison Square Garden in New York city.

Other prominent horse shows of 1952 were the Harrisburg, Pa., show; the Devon Horse show, Devon, Pa.; and those held in conjunction with the Indiana, Kentucky, Illinois, Minnesota, Missouri, Ohio and Wisconsin state fairs.

Livestock Shows.—Denver, Colo., with its January National Western Stock show, opens the livestock show year in the United States. Chicago, in its December fixture, the International Live Stock exposition, is annually the final event. The Denver show is traditionally the country's largest exhibition of purebred Hereford cattle, the dominant breed of the range country.

Another important January event is the Southwestern Exposition and Fat Stock show in the Will Rogers Memorial auditorium in Fort Worth, Tex. This is the oldest livestock exhibition in the United States. It is one of the country's largest competitive exhibitions of purebred Brahman cattle, and is also noted for its exhibits of purebred Hereford cattle and, to a lesser extent, of Aberdeen-Angus and Shorthorns. Immediately following the Fort Worth event is the Houston, Tex., Fat Stock show in early February, a growing exhibition of the major beef breeds as well as of Brahmans. Both shows include rodeos as entertainment features.

After a lapse of several months during the spring and early summer, important showings of all breeds of farm animals resume again at the late summer state fairs. In most states, they are preceded by county fairs, which are held through July and August. State fairs continue in consecutive weeks in circuits through the eastern, midwestern and western states. Some of the largest livestock exhibitions of the 1952 show season were

seen at the Illinois, Indiana, Ohio, Iowa, Minnesota and Wisconsin state fairs. The largest in point of attendance was the state fair of Texas at Dallas, Oct. 4 to 11, which also included the national show of purebred Holstein cattle for 1952. The largest exhibition of this breed during the year was at the Wisconsin state fair, Milwaukee, Aug. 16 to 24. The National Dairy Cattle congress was held at Waterloo, Ia., Sept. 27 through Oct. 4, 1952.

The earliest of a series of sectional exhibitions, which follow after the state fairs, was the Eastern States exposition, held in Springfield, Mass., Sept. 14 to 20. There emphasis was on the exhibition of top dairy show herds from the eastern states. Another large show of this class, but with the beef breeds dominant, was the Ak-Sar-Ben Livestock and Horse show, which was held in Omaha, Neb., Oct. 3 to 12. The leading show of the northwest was the Pacific International Live Stock exposition in Portland, Ore., Oct. 4 to 11, followed later the same month by the Grand National Live Stock exposition in the San Francisco, Calif., Cow Palace Oct. 31 to Nov. 9. Among the relative newcomers in the sectional show field, but of growing national stature, was the Eastern National Live Stock show at Timonium, Md. It was held Nov. 15 to 20, and was distinguished by strong showings of purebred Aberdeen-Angus and Hereford cattle from prominent eastern herds.

One of the country's longest established major livestock shows was the American Royal Livestock show, which took place Nov. 14 to 22 at Kansas City, Mo., and which was marked by an outstanding exhibition of purebred Hereford cattle and one of the nation's top horse shows.

Chicago brought the 1952 show year to a close with the 53rd annual International Live Stock Exposition and Horse show, topping all shows of the year in number of livestock entries with 11,011 head of beef cattle, horses, sheep and swine from the leading stock farms of 37 states. It was held in the International amphitheatre and a large area of the adjacent stockyards, Nov. 29 through Dec. 6. Its sale of meat animals totalled \$1,419,176.34.

Canadian stockmen usually make important contributions to the cattle and sheep competitions at Chicago, but in 1952 there were no Canadian exhibits because of an embargo against Canadian livestock resulting from an outbreak of foot-and-mouth disease in northwestern Canada in the spring of 1952.

Chicago was also the setting of the country's largest exhibition and sale of feeder cattle in 1952, when 446 carloads were exhibited by producers in nine western states and sold at auction to corn belt and eastern cattle feeders for the record-breaking total of \$1,339,260.31. This event was the eighth Chicago Feeder Cattle show and sale and was held at the Chicago Union Stock Yards, Oct. 30 and 31.

The two principal livestock exhibitions of Canada were the Canadian National exhibition, Aug. 22 to Sept. 6, and the Royal Agricultural Winter fair; Nov. 14 to 22. Both were held in Toronto.

The world's largest showing of purebred shorthorn cattle in 1952 was brought out at the Palermo in Buenos Aires, Arg., in August. The oldest established stock show in the world, the Highland of Scotland, celebrated its 113th anniversary in June, followed by the British Royal show in early July, marking its 104th renewal under the sponsorship of the English Royal Agricultural society. (W. E. O.)

Dog Shows.—During 1952 an estimated total of \$320,000,000 was spent in the United States by dog owners and dog breeders for the ownership, breeding and showing of dogs, etc. Of this the food bill, principally for canned dog food or dry biscuit food, amounted to an estimated \$236,000,000.

The dog population of the country remained at about 15,000,-

ooo, of which approximately 3,500,000 were purebred.

Registrations for the year ending Oct. 31, 1952, in the leading stud book, that of the American Kennel club, totalled 249,896. Adding the numbers of several other minor stud books, approximately 280,000 dogs were registered. The first ten dog breeds in order of popularity, based on these registrations, were in order: (1) cocker spaniel; (2) beagle; (3) boxer; (4) collie; (5) dachshund; (6) Chihuahua; (7) Boston terrier; (8) German shepherd dog; (9) Pekingese; (10) Pomeranian.

The largest dog show of the year was that of the Morris and Essex Kennel club at Madison, N.J., a one-day outdoor show on May 24, with 2,519 dogs present and competing. The best-in-show winner was the wire fox terrier Champion Wyretex Wyn's Traveller of Trucote, imported from England.

In obedience trials, in which dogs are judged on performance entirely, there were 292 official point trials and 162 sanction trials, for a total of 454.

Dog shows continued to be popular. There were 637 championship point shows, of which 370 were for all breeds and 267 for one breed. Added to this were 652 informal or sanction shows, for a grand total of 1,289 conformation shows (based on type and physical perfection).

The winner of the 1952 national field trial for retrievers was John Olin's labrador, King Buck. Among springer spaniels, the champion of the year was W. T. Gibson's Stubblefield Ace High. J. W. Lipop's silver gray pointer, Bitsu von Basha, took the top title at the championship trial of the Weimaraner Club of America, and J. H. Williams' Brittany, Juchoir's Martin, was awarded top placing at the annual pointing spaniel championship event. The highest greyhound award, winner of the United States challenge cup at Abilene, Kan., was C. E. Evans' Red Flag.

(W. Jv.)

Circuses, Carnivals, Rodeos and Other Travelling Shows.

—The 1952 season was a difficult one for most outdoor shows. Small circuses were especially hard hit. Poor management, inclement weather, high taxes and licence fees, and the presidential election all were advanced as reasons. Of about 40 small truck circuses, two closed early in the season, six closed in September, and the others set unusually early closing dates. The Clyde Beatty circus, one of the two railroad shows on the road, had an unprofitable season and closed a month earlier than usual. The Ringling Brothers-Barnum & Bailey circus, after a tremendous opening stand of 39 days in Madison Square Garden, New York city, and favourable business in Boston, Mass., Washington, D.C., and Philadelphia, Pa., encountered nearly a month of poor business in the industrial towns of New England, New York and Ohio, but throughout the middle west and south drew large crowds. Cole Bros. circus, a railroad show which had disbanded a year before, was purchased by Arthur Wirtz and associates, of the Chicago stadium, but was discontinued as a railroad show. Two small units were formed, one playing fair dates, the other on a carnival midway. The results were poor.

European circuses had a better than average season, especially good in the Scandinavian countries. Circus Moreno, Circus Schumann, Circus Miede and others played long engagements in Copenhagen, Den., Circus Barlay, Belli Bros., Circus Baruk, Willi Holtzmueller circus, and Busch-Berlin circus did well in Berlin, as did Krone circus in Bavaria and the Franz Althoff-Buglione circus in southern Germany. Gock and his tent shows did well in northwestern Germany. In England, the Bertram Mills circus and Tom Arnold's Mammoth circus topped all others. Circuses playing England, France, the Netherlands and Belgium had a good season. Trolle Rhodin's Zoo circus had a profitable season in Iceland. Many circus acts played Helsinki, Fin., during the Olympic games. John Duffy & Sons

circus in Dublin, Ire., and Circus Jose Mullens, Circus Schmidt Bros., Circus Scott, Circus Louis and Circus Benneweis on the continent all reported good business.

Indoor circuses in the United States continued to increase in popularity. Among the established shows playing the principal cities were the Hamid-Morton circus, playing mainly in the east and Canada; Polack Bros. circus, eastern and western units, Shrine dates; Orrin Davenport's circus; and Tom Packs' circus.

Carnivals had one of the most unprofitable seasons in several years, because of unfavourable weather, industrial conditions and restrictions imposed on games. More and more towns were banning the chance games that are a part of most carnivals. Carl Sedlmayr's Royal American show again held top place. Its 1952 route included the five Class A fairs of western Canada and most of the large state fairs of the midwest and south, and the show chalked up a profitable season. Of the three other railroad carnivals, the World of Mirth, playing eastern towns, had a profitable season, but the Amusement Company of America and the Cavalcade of Amusements fell far below 1951. Of the truck shows, Craft's 20 Big on the west coast and the James E. Strates shows in the east were most successful. The 260 or more small truck shows had a poor season.

Interest of the public in rodeos continued to decline. The Madison Square Garden rodeo in New York city drew sizable crowds and showed a profit on its Sept. 24 to Oct. 19 engagement. But of the hundred or more small rodeos staged east of the Mississippi river, few made a profit. Western rodeos continued to hold public interest. High in prize money and attendance were the Calgary (Alta.) Stampede with \$22,260 prize money, and the Cheyenne (Wyo.) Roundup with \$19,200. Other leading rodeos were those at Edmonton, Alta.; Billings, Mont.; Pendleton, Ore.; Pueblo, Colo., and the Will Rogers Memorial rodeo at Vinita, Okla.

Half a dozen automobile thrill shows, units specializing in crashes, roll-overs and other spectacular stunts had a fair season.

Competition among ice skating shows was exceptionally keen during 1952. The leading shows, Shipstads & Johnson's *Ice Follies*, the Sonja Henie *Revue of 1953*, and Arthur Wirtz's *Hollywood Ice Revue* featuring Barbara Ann Scott, all were tremendous spectacles, beautifully costumed, and costing huge sums to produce. Business, on the whole, was good. John Harris' *Icecapades*, George Tyson's *Hollywood on Ice*, and Harris and Tyson's *Icecycles*, medium-sized shows, playing intermediate cities, had only a fair season. The one roller skating show on the road, *Skating Vanities*, never a paying venture, added a large part of the Olsen and Johnson revue late in 1952, and early attendance results indicated a decided upward swing. (NA. G.)

Siam: see THAILAND.

Sierra Leone: see BRITISH WEST AFRICA.

Sikkim. An Indian-protected state, Sikkim is bounded north by Tibet, east by Bhutan, south by India and west by Nepal. Area: 2,745 sq.mi. Pop. (1951 census): 135,646, mostly Nepalese; also Bhotias of Tibetan extraction (10,980) and Lepchas or Rongpa (13,060) of Indochinese origin. The state religion is lamaistic Buddhism, but most Nepalese are Hindu. Capital, Gangtok. Ruler (from 1914), Maharaja Tashi Namgyal; premier, J. S. Lal.

History.—In May 1952 Jawaharlal Nehru, prime minister of India, visited Sikkim, underlining the Indian government's close interest in the progress of this strategically important border state. At Gangtok Nehru met separately the leaders of the three political parties represented in the provisional government formed in Nov. 1951.

Sonam Chering, leader of the Nationalist party, asked for a

revision of the protectorate treaty signed on Dec. 5, 1950, and put forth a demand that the maharaja of Sikkim should be the supreme constitutional and administrative head of the state. Tashi Chering, leader of the Sikkim Congress party, wanted the maharaja to enjoy the same status as that of an Indian governor of a class A state. The spokesman of the Rajproja Sammelan party demanded that the state administration should be headed by a commissioner appointed by the Indian government.

Finance.—Budget (1951 est.): balanced at Rs. 2,100,000, including the subsidy of Rs. 300,000 from India. Monetary unit=Indian rupee, valued in 1952 at 21 cents U.S.

Silk. Japanese production of raw silk in the first eight months of 1952 was 156,705 bales (of 132 lb. each), compared with 125,044 bales produced in the corresponding period in 1951. For the entire year, world production of silk was expected to reach 55,000,000 lb., an increase of 11,000,000 lb. over 1951 production.

At the third International Silk congress in London in Sept. 1951, the Japanese agreed to a proposal by the important silk-consuming nations that the price of raw silk be stabilized, and in Feb. 1952 the Japanese government established a maximum price of 230,000 yen per bale (\$4.83 per pound) for grade 20/22 A silk, f.o.b. Japan. By June silk prices broke through the ceiling. In early July the Yokohama Raw Silk exchange decided to refrain voluntarily from transactions at prices higher than 240,000 yen per bale. Later in the month the government established 240,000 yen (approximately \$5.10 per pound) as the "prohibition price" (the price above which transactions were illegal) for all grades of silk.

Efforts to promote the use of silk on an international scale continued through the medium of the International Silk association with headquarters in France. In 1952 Japan provided a \$200,000 fund for the promotion of silk in the major consuming countries, while for 1953 the Japanese ministry of international trade and industry asked for an appropriation of \$300,000. The United States was spending \$1,500,000 annually, and Great Britain, Switzerland and France were together contributing another \$500,000 for the same purpose. (See also RAYON AND OTHER SYNTHETIC FIBRES; TEXTILE INDUSTRY.)

(I. L. BL.)

Silver. The silver outputs of the world's major producers are shown in Table I, as reported by the U.S. bureau of mines.

United States.—Mine production dropped 7% in 1951 as compared with 1950, to 39,463,661 oz., and continued at about the 1951 level in the first eight months of 1952, with a total of

26,050,181 oz.

Canada.—Silver production rose from 22,386,456 oz. in 1950 to 24,244,949 oz. in 1951.

Mexico.—The world's leading silver producer is Mexico, where the output was 49,141,445 oz. in 1950 and 43,797,734 oz. in 1951. (See also MINERAL AND METAL PRODUCTION AND PRICES.)

(G. A. Ro.)

Singapore. Singapore is a British island colony off the southern end of Malay peninsula with the dependency of Christmas Island in the Indian ocean. Area: Singapore and adjacent islets 220 sq.mi.; Christmas Island 62 sq.mi. Pop.: Singapore Island (1947 census) 938,144, (mid-1951 est.) 1,041,933; Christmas Island (1951 est.) 1,522. Capital, Singapore city (pop. 1947, 769,000). Governors (1952): Sir Franklin Gimson until April, and John Nicoll. U.K. commissioner-general in southeast Asia, Malcolm MacDonald.

History.—Singapore was virtually free of terrorist incidents in 1952, but the authorities suspected that the city was being used as an organizing and supply centre for the conduct of terrorist activities in the Malayan federation, and special steps were taken in August to screen persons passing to and from the federation. Sir Franklin Gimson, the governor, retired in April and was succeeded by John Fearn Nicoll.

Efforts were made in April and June to increase the number of citizens on the electoral register, and as a result 23,000 more persons registered, bringing the total number on the rolls to 75,000 or about 33% of those entitled to register; the proportion of registered men to women was about five to one.

On May 22 a raid by customs officers resulted in the seizure of 500 lb. of illegal opium in a house which was believed to be a transit centre for traffic in opium from Thailand. Later (July 27) the Singapore police authorities disclosed that there were estimated to be 2,000 illicit opium dens in the colony. In August preparations were made for the opening of a government agricultural estate of 2,566 ac. as part of a food production drive. In October it was announced that a surplus of revenue over expenditure for the year of Malayan \$37,000,000 was expected. The program of expenditure on social services had had to be severely cut because of the limited capacity of the public works department. The estimates had depended on a total public works department expenditure of Malayan \$33,000,000 whereas the department's capacity was only Malayan \$10,000,000. (See also MALAYA, FEDERATION OF.)

(D. A. SN.)

Education.—Registered schools (government maintained, aided and private, 1951): English 139 (55,024 pupils), Malay 43 (8,505 pupils), Chinese 288 (75,975 pupils), Tamil 20 (1,272 pupils). One teachers' training college. University of Malaya (Dec. 1951): students 837.

Finance.—Monetary unit: Malayan dollar, valued in 1952 at 32.67 U.S. cents. Budget: (1951 provisional) revenue Malayan \$165,895,917, expenditure Malayan \$113,320,317; (1952 est.) revenue Malayan \$174,836,658, expenditure Malayan \$169,071,159.

Foreign Trade.—Imports (1951) Malayan \$3,625,000,000; exports (1951) Malayan \$4,095,000,000. Main sources of imports (1951): Indonesia Malayan \$1,231,000,000, U.K. Malayan \$453,000,000, India and Pakistan Malayan \$169,000,000, U.S. Malayan \$189,000,000, Thailand Malayan \$195,000,000. Main destinations of exports (1951): Indonesia Malayan \$459,000,000, Australia Malayan \$259,000,000, Hong Kong Malayan \$159,000,000, China Malayan \$83,000,000.

Skating: see ICE SKATING.

Skiing. Andrea Mead Lawrence of Rutland, Vt., scored a sweep of the women's titles at stake in the United States and American international meet held at Stowe, Vt., March 22-23. Mrs. Lawrence regained the national downhill crown the first day when she showed the way in the 1½ mi. descent of Mt. Mansfield in 2 min. 12.9 sec. Mrs. Anne Jones, one of the victor's clubmates from the Pico Ski club, placed second in 2 min. 13.8 sec. The United States Olympian came back the second day to capture the slalom with an elapsed time

Table I.—World Silver Production

(In millions of fine ounces, smelter output)

	1945	1946	1947	1948	1949	1950	1951
United States . . .	29.05	21.10	38.58	39.23	34.94	42.31	39.91
Canada . . .	12.94	12.54	12.50	16.11	17.64	22.39	24.24
Newfoundland . . .	1.08	1.11	0.96				
Mexico . . .	61.10	43.26	58.84	57.52	49.45	49.14	43.80
Honduras . . .	3.00	2.68	2.41	3.17	3.43	4.05	?
Argentina . . .	2.76	3.09	2.44	1.20	1.25	1.15	1.25
Bolivia . . .	6.68	6.11	6.23	7.56	6.63	6.57	7.17
Chile . . .	0.83	0.56	0.75	0.86	0.80	0.75	0.98
Peru . . .	13.00	12.33	10.78	9.29	10.63	13.05	14.86
Sweden . . .	1.14	1.29	1.09	1.14	1.14	1.29	1.29
Belgian Congo . . .	4.14	5.05	4.06	3.81	4.55	4.46	3.80
South Africa . . .	1.24	1.20	1.15	1.17	1.16	1.12	1.16
Japan . . .	4.29	1.28	1.79	2.19	2.89	3.68	4.61
Australia . . .	8.08	9.05	9.53	10.06	9.86	10.68	10.44
Total . . .	162	135	168	172	174	192	199

Table II.—Silver Industry in the United States

(In thousands of fine ounces or of dollars)

	1946	1947	1948	1949	1950	1951
Mine production . . .	22,914	35,824	38,096	34,675	42,459	39,464
Imports . . .	\$57,578	\$68,140	\$70,884	\$73,536	\$110,035	\$103,469
Exports . . .	\$36,455	\$30,649	\$12,400	\$23,281	\$ 6,202	\$ 8,590
Industrial use . . .	123,647	126,366	129,186	110,660	155,257	151,651
Secondary recovery . . .	36,647	27,866	23,897	22,660	45,257	46,651
Net consumption . . .	87,000	98,500	105,289	88,000	110,000	105,000



ANDREA MEAD LAWRENCE of the U.S. finishing the women's giant slalom in 2 min. 6.8 sec., to win the Olympic skiing event at Norefjell, Nor., in Feb. 1952

of 2 min. 0.6 sec. for the two runs. Lena Gale of Stowe, Vt., was the runner-up. The double victory gave Mrs. Lawrence a perfect score of zero in the competition for the alpine combined title. Miss Gale with 7.26 points placed second.

Ernie McCulloch, instructor at Mont Tremblant, Quebec, Que., retained the men's open downhill laurels, being timed in 2 min. 16.7 sec. Only United States, Canadian and Japanese skiers are eligible for United States titles. Stein Eriksen of Norway was second to McCulloch with Austria's Othmar Schneider third. The national open and amateur slalom honours went to Jack Reddish of Sun Valley, Ida., although he was fourth in the field's standings. Schneider won the international prize with an elapsed time of 2 min. 34.1 sec. Eriksen was second and Gottorm Berge of Norway third. Reddish also gained the United States alpine combined championships with 6.08 points.

Howard Jansen of the Norge Ski club of Chicago, Ill., won the national senior jumping meet at Salisbury, Conn., March 1-2. Jansen scored 186.3 points to defeat a clubmate, Marty Wingsneff, who tallied 180.3. The open event was annexed by Merrill Barber, Brattleboro, Vt., veteran with 236.1 markers. Clarence Hill of Ishpeming, Mich., was second with 233.9 and took the amateur or closed title. Silas Dunklee, Sun Valley star, won the open-closed laurels in the cross-country competition at Paul Smiths, N.Y., March 9. Dunklee triumphed in 1 hr. 30 min. 3 sec., only 34 sec. ahead of the Canadian champion, Claude Richer of Ottawa, Ont. Other national winners in 1952 included Dick Duek of Sun Valley, downhill closed; Corey Engen of Payette Lakes, Ida., combined jumping and cross-country; Gale Spence, Aspen, Colo., giant slalom; and Mrs. Rhona Wurtele Gillis of Palo Alto, Calif., women's giant slalom.

The North American championships were held at Banff, Alta., early in March and Otto von Allman of Sun Valley carried home the slalom and combined trophies, the downhill title being annexed by Bob Dawson of Banff. Jack Roocroft of Vancouver, B.C., was first in the jumping and Clarence Servold of Cambridge, Alta., took the 11-mi. cross-country race. Fritz Pedersen of Seattle, Wash., captured the combined prizes. The women's events were cancelled because of insufficient entries.

Marvin Crawford won the jump, cross-country and slalom to lead Denver university to its second straight team title in the national intercollegiate meet at Snow Basin, Utah, March 29-30. Crawford missed a sweep of the individual championships when he placed second to Utah's Dick Moench in the downhill test. (See also OLYMPIC GAMES.) (T. V. H.)

Skin Diseases: see DERMATOLOGY.

Sloan Foundation, Inc., Alfred P.: see SOCIETIES AND ASSOCIATIONS, U.S.

Smith, Margaret Chase (1897-), U.S. senator, was born on Dec. 14 at Skowhegan, Me. Graduated from the Skowhegan high school in 1916, she taught school in 1916-17 and later worked for a country newspaper. From 1928 to 1930 she was treasurer of a waste process company in Skowhegan and was connected with a textile company. After her marriage in 1930 to a former state senator, Clyde H. Smith, she became active in politics and was a member of the Republican state committee from 1930 to 1936. Her husband was elected to the U.S. house of representatives in 1936, and upon his death she was elected June 3, 1940, to fill his unexpired term. She was re-elected consecutively to the 77th-80th congresses (1941-49). In 1948 she was elected U.S. senator from Maine for the term 1949-55—the only woman member of the senate.

In the house and senate, Mrs. Smith maintained a prolabor record; she also consistently supported the administration's foreign policy and opposed Republican attacks on Secretary of State Dean Acheson. On June 1, 1950, she led six other "liberal Republican" senators in censuring Sen. Joseph R. McCarthy (*q.v.*) for his tactics in exposing alleged Communist sympathizers in the state department and other branches of the government.

After Dwight D. Eisenhower's nomination for president at the Republican convention in July 1952, a move was started to nominate Senator Smith for the vice-presidency but she refused to endorse the action.

Smithsonian Institution. This institution, located on the Mall in Washington, D.C., was established in 1846 through a bequest from James Smithson, an English scientist. Its purpose is "the increase and diffusion of knowledge among men"; this is carried out by means of scientific researches and explorations, publications and museum and art-gallery exhibits. The institution is governed by a board of regents, composed of the vice-president of the United States, the chief justice of the United States, three senators, three representatives and six citizens from various parts of the country. The executive officer is the secretary, who in 1952 was Alexander Wetmore. The institution has ten branches: United States National museum, National Gallery of Art, National Collection of Fine Arts, Freer Gallery of Art, Bureau of American Ethnology, International Exchange service, National Zoological park, Astrophysical observatory, National Air museum and Canal Zone biological area.

The National museum collections were increased by more than 607,000 objects during the year, twice as many as in the previous year, bringing the catalogue entries to a grand total of 33,184,494. Only a small fraction of these could be exhibited; the rest for the most part belonged to the study collections assigned to the museum's six departments: anthropology, zoology, botany, geology, arts and engineering, and history. Field expeditions took National museum staff members to many sections of the United States and to distant parts of the world—Honduras, Dominican Republic, Panamá, Colombia, Brazil.

British North Borneo, Ryukyu Islands, Mexico and Alaska.

The National Gallery of Art received 1,891 accessions by gift, loan or deposit. It held ten special exhibitions during the year. Construction of five new galleries begun in 1950 was completed. A Smithsonian travelling exhibition service was inaugurated. The Freer Gallery of Art acquired choice specimens of Chinese paintings, pottery and bronzes; and Egyptian, Japanese, Persian and Indian objects.

Members of the staff of the Bureau of American Ethnology continued their anthropological researches, particularly on Meso-American archaeology and ethnology, on the archaeology of Cornwallis Island, and on the Iroquois. The River Basin surveys, a unit of the bureau, continued its archaeological work at sites threatened by construction of dams and reservoirs in connection with various river-basin projects in various parts of the country. During 1952, excavation work covered 13 reservoir areas in 11 states, with 22 excavating parties in the field. Another unit of the bureau, the Institute of Social Anthropology, conducted co-operative field work and teaching programs in Brazil, Colombia, Mexico and Peru, and also participated in public-health programs in Latin America.

The Astrophysical observatory continued its studies of solar radiation at its two high-altitude stations on Mt. Montezuma, Chile, and Table mountain, California. The observatory's division of radiation and organisms continued its biochemical investigations pertaining to the photomorphogenesis in green plants.

The National Air museum was obliged to move its storage facility from Park Ridge, Ill., and erection of several prefabricated buildings to house the 4,000 aeronautical specimens in storage was begun at Suitland, Md., near Washington, D.C. During the year 110 specimens from 21 sources were received for the aeronautical collections.

The collection of animals in the National Zoological park numbered 2,675. The year's accessions brought some species never before shown in this zoo, including an Australian copperhead, an albino great gray kangaroo, a Bornean porcupine and a pair of MacQueen's bustards.

The International Exchange service handled 1,001,614 packages (weighing about 825,000 lb.) of scientific and governmental publications, serving as the United States agency for the interchange of such material with other countries.

A new laboratory building, begun in 1951 at the Canal Zone biological area on Barro Colorado Island, Pan., was completed.

The institution issued 76 publications during the year, especially noteworthy among them being Goldman's *Biological Investigations in Mexico*; Rasetti's *Middle Cambrian Stratigraphy and Faunas of the Canadian Rocky Mountains*; the Clarks' *Butterflies of Virginia*; Tattersall's *The Mysidacea of the United States National Museum*; Fenton's *Local Diversity in Iroquois Culture*; and two volumes in the institution's series of tables—the sixth revised edition of the *Smithsonian Meteorological Tables*, compiled by Robert J. List, and the *Smithsonian Logarithmic Tables, to Base e and Base 10*, by Spenceley, Spenceley and Epperson. The Smithsonian library, including its various branches, numbered about 939,000 volumes.

Recorded visitors to the Smithsonian group of buildings reached an all-time high total of 3,425,987 for the year; to the National Gallery of Art, 1,522,596; and to the National Zoological park, approximately 3,300,000. (A. Wt.)

Snyder, John Wesley (1896–), U.S. secretary of the treasury. was born on June 21 in Jonesboro, Ark. He attended Vanderbilt university, Nashville, Tenn. (1914–15), joined the army in 1917, and after World War I entered the banking business in Arkansas and Missouri. In 1931 he joined the field service of the comptroller

of the currency of the U.S. and served with this office until 1937, when he became head of the St. Louis, Mo., agency of the Reconstruction Finance corporation. During World War II he helped organize the Defense Plant corporation, an RFC subsidiary, and as its operational vice-president and director he administered the agency's commitments of more than \$10,000,000,000 to finance war plants. He was vice-president of the First National bank of St. Louis from Jan. 1943 to April 1945 when he became federal loan administrator. On July 17, 1945, he was appointed director of the Office of War Mobilization and Reconversion, and in June 1946, Pres. Harry S. Truman named him secretary of the treasury. It was Snyder's responsibility in the cabinet to steer through congress the bills to implement vast increases in government and defense expenditure after the outbreak of the Korean war in 1950. On May 29, 1951, Snyder was nominated for a second five-year term as U.S. governor of the International Monetary fund and the International Bank for Reconstruction and Development. He was a member of the U.S. staff attending the North Atlantic Treaty organization meeting at Lisbon, Port., in Feb. 1952.

Snyder declared on April 18, 1952, that there was no danger of an economic depression in the United States, even after curtailment of expenditures for national defense.

Soaring: see GLIDING.

Soccer. Play for the National Challenge cup in 1951–52 attracted 91 entries including the Los Angeles Scots, first team ever to represent the Pacific coast in the competition. The prized trophy was won by the Harmarville eleven of Pitts-

U.S. GOALKEEPER leaping to save the ball during the Olympic soccer match against the Italian team, played at Tampere, Fin., in July 1952. The U.S. team lost the match 8 to 0



burgh, Pa. The new champions had gained the last round by eliminating the St. Louis Simpkins, 0-0, 2-1, in the western play-offs, while the Philadelphia Nationals reached the grand final by halting the defending German-Hungarian Soccer club of Brooklyn, 2-1, 2-2, to advance on the total goal basis. Harmarville then annexed the cup, 7 goals to 5, by conquering the Nationals, 3-4, 4-1, in June. The National Amateur cup was won by the St. Louis Raiders when they set back the Lusitano eleven of Ludlow, Mass., 3-1, in a single play-off. The Philadelphia Americans took top honours in the American league race and the Philadelphia Nationals captured the Lewis cup by defeating the New York Americans, 2-1.

Visits by Manchester United, the English league champions, the Stuttgart Kickers of Germany and the Tottenham Hotspurs of England spiced the season in the United States. Manchester proved the big lure for soccer enthusiasts after defeating Stuttgart in New York city and twice halting the Atlas Football club of Mexico in Los Angeles, Calif. However, the high mark of the trip came at New York on June 15 when a crowd of 25,000 at the Yankee stadium saw Tottenham beat Manchester, 7-1. The day before at Toronto, Ont., Tottenham had blanked its English league rival, 5-0, as 26,000 looked on. (See also FOOTBALL.)

(T. V. H.)

Socialism. Socialists and Labourites furnished the leadership in 1952 in socialist and coalition governments of Burma, Israel, the Netherlands, Norway and Sweden and in the province of Saskatchewan, Can. They were represented in the coalition cabinets and councils of Austria, Finland, Switzerland and Indonesia, and constituted the chief opposition parties in Australia, Belgium, Denmark, France, Germany, Great Britain, India and New Zealand. In all of these countries, the parties were confronted with the difficult problem of how to maintain living standards for the masses, to continue and strengthen the social services and, at the same time, to provide the necessary funds for rearmament as a defense against possible Communist aggression.

Socialist International.—The reorganized Socialist International, under the chairmanship of Morgan Phillips, secretary of the British Labour party, held its second congress in Milan, It., in October. The international reported that 34 Socialist parties and exiled groups with a membership of 10,000,000 and a following at the polls of 55,000,000, were affiliated with it, and that it was in contact with 37 other socialist organizations.

At this congress, it appealed to the four powers in occupation of Germany "to redouble their efforts to convene a four-power conference with the object of reuniting the Western and Eastern zones of Germany under a single government, on the basis of completely free elections under international control in the whole of Germany."

The congress declared that countries adhering to the Atlantic pact should "hasten the establishment of a real Atlantic community which is not only military but economic and political as well." It urged the United Nations to abolish the veto power, and opposed Spain's admission into the United Nations Educational, Scientific and Cultural organization.

Great Britain.—The parliamentary Labour party in Great Britain spent much of its energy during the year in opposing the Conservative party's tax program, its attempt to restore the steel industry and road haulage to private hands, and its proposal to charge for prescriptions, dental care and some appliances obtained under the national health service.

At its annual conference at Morecambe, the party urged the expansion of the sphere of co-operative and municipally and federally owned industry; declared that Great Britain should do all within its means to defend itself; and advocated periodic review of the rearmament program with the Allies.

The annual conference was also the scene of a contest for party control between the moderates, led by Clement R. Attlee, and the left wing, led by Aneurin Bevan. In the voting for the 7 members of the executive committee elected by Labour party branches, the Bevanites won 6 of the 7 places and defeated for re-election Herbert Morrison and Hugh Dalton. The Attlee followers, however, backed by the trade union representatives, retained majority control of the executive. Following the conference, the Bevan group was ordered to disband as an organized group.

In the parliamentary by-elections in the fall, Labour's candidates in Labour constituencies were re-elected, but with a reduced majority.

Europe.—The Swedish Social Democratic party and the Norwegian Labour party remained as the leaders of their respective governments, and the Danish Social Democratic party continued as the chief opposition. In the Oct. 21 elections to the lower house of the Swedish *riksdag*, the Social Democrats again won the largest number of seats, 110 out of 230, as compared with 112 in the old parliament, and obtained 46% of the popular vote. Following the election, the Social Democrats continued their coalition cabinet with the Agrarians.

In the Netherlands, William Drees, head of the Labour party, continued throughout the year as prime minister, in a coalition government. In the quadrennial parliamentary elections in late June, the Labour party, for the first time, obtained a plurality of votes, 1,545,414, against 1,529,424 for the Catholic party, and won 30 out of 100 seats compared with 27 in 1948. The Catholics also elected 30, a reduction of 2.

In Belgium, the Socialists, the chief opposition party, in the municipal elections of October, improved their representation over the votes received by them in 1946 by from 10% to 15%.

In early 1952, the French Socialist party, with a parliamentary block of 107, remained out of the successive cabinets.

As a result of the May elections for the senate, Socialists were represented in that body by 56 members (formerly 61); Communists by 16 (formerly 18), out of a total of 320. Socialists came second to the R.G.R. (Rally of the Republican Left), represented by 71 members.

At the meeting of the French Socialist national council in November, party spokesmen vigorously condemned the "reactionary trend" in the Antoine Pinay cabinet. They denounced the war in Indochina and the admission of the Spanish government to U.N.E.S.C.O. and asked that peace negotiations be started with the Communist-led Viet Minh. They also urged the government to seek closer Allied control of Nazi elements in west Germany.

In Germany, the Social Democrats continued during the twelve months to gain strength. In the March elections in the southwest state, they increased their votes from 23.9% in 1949 to 28.1%. In the municipal election in Hesse, they obtained 38.5% as compared with 17.8% for the Christian Democrats, and in the fall communal elections in North Rhine-Westphalia, the most populous state of western Germany, and in Lower Saxony, the Social Democrats emerged as the strongest party.

The party throughout the year opposed rearmament without equality of status, and insisted that the unification of Germany come before the inclusion of Germany in a European Defense Community.

In Austria, where the Socialist party had been a member of the coalition government with the People's party since 1945, the party's representatives withdrew from the cabinet on Oct. 22 because of disagreement over the budget, but, at the request of Pres. Theodor Koerner, agreed to continue with the People's party as a provisional government until the next election.

The first convention of the Democratic Socialist party of

Italy, a merger of the Italian Workers' Socialist party led by Giuseppe Saragat and various Socialist Unity groups headed by Giuseppe Romita, met in Bologna in Jan. 1952. The delegates favoured continued nonparticipation in the government coalition for the time being, nonco-operation with the Pietro Nenni left-wing Socialist party, which collaborated with the Communists, and support for the Atlantic pact.

The September convention of the party voted for an electoral alliance with the Christian Democrats, Liberals and Republicans for the ensuing elections.

Near and Far East.—The parliamentary elections in Japan on Oct. 1 resulted in the election to the diet of 57 right-wing Socialists and 54 left-wing Socialists. The Liberals won 240 seats; the Progressives, 85; the Communists, 0; and the Independents, 30.

In the January elections in India, the Socialist party received more than 10,000,000 votes (11% of the total), although electing but 12 representatives out of 489. The Communists, with 4.9% of the total, elected 23 deputies. In the fall, the Socialist party voted to merge with the Kisan Mazdoor Praja party, which polled 6% of the total, forming the Socialist-Praja party. The merger was based on the Socialist party's condition of "no alliance with the Communists."

In Burma, the socialistic Anti-Fascist People's Freedom league received a large majority of votes in the spring elections. The prime minister reaffirmed the government's opposition to Communists, and its advocacy of welfare state plans. In Malaya, an all-Malayan Labour party was formed in late June.

The Australian and New Zealand Labour parties remained the chief opposition parties in their respective countries.

United States.—In the United States, the Socialist party ran Darlington Hoopes, a Reading, Pa., attorney, as candidate for president, and Samuel H. Friedman for vice-president. The platform called for greater measures of socialization and social security, the strengthening of the U.N. and the Socialist International, and the ending of the arms race. The Social Democratic Federation voted endorsement of the candidacy of Adlai E. Stevenson, at the same time urging the development of a new labour-progressive-democratic socialist alignment. A vigorous discussion continued within the Socialist party during the year regarding the extent to which the party should continue to nominate and run Socialist candidates for political office.

Latin America.—In Latin America, the Socialist movement continued weak during the year. In many countries, it came under the official ban of a dictatorial government. Only in Chile, Peru and Uruguay did it have parliamentary representation. (See also COMMUNISM; DEMOCRACY.) (H. W. L.; N. T.)

Socialist Soviet Republics: see UNION OF SOVIET SOCIALIST REPUBLICS.

Social Security. Steady and more or less gradual increases in social security benefits, with other liberalizations, were put into effect during 1952 in many countries, including the United States. Chile completely reorganized its health and pension program for wage earners, and Italy strengthened its retirement system. The United Nations developed further its program of advisory social welfare services.

United States.—The social security program was made more liberal by congressional action in July 1952. Old-age and survivors insurance benefits were increased and eligibility conditions liberalized, and additional federal funds were made available to the states to help provide care under their public assistance programs for needy persons. The railroad retirement program, liberalized by amendments made late in 1951, pro-

vided a degree of co-ordination between that program and old-age and survivors insurance.

Social Insurance and Related Programs.—The federal old-age and survivors insurance program, administered by the Social Security administration of the Federal Security agency, provides monthly benefits related to previous earnings for insured, retired workers at age 65 and supplementary benefits to their dependent, minor children; to their wives if aged or having such entitled children in their care; and to the dependent, aged husbands of women workers. The program also pays survivor benefits to the widows and children, dependent parents and dependent, aged widowers of deceased, insured workers, as well as lump-sum death payments. At the end of July 1952 monthly benefits totalling \$162,300,000 were being paid to 4,600,000 persons. As of Dec. 31, 1951, the average monthly benefit for a family consisting of a widowed mother and one child beneficiary was \$77.30; for an aged widow \$36; for a retired man \$43.20; and for a man and his aged wife \$70.20.

Effective Sept. 1952, under the Social Security act amendments of 1952, retired persons already on the rolls received, in general, increases in their benefit payments of \$5 or 12½%, whichever was larger; other beneficiaries received proportionate increases. The benefit formula for persons coming on the rolls in the future was also liberalized. Beneficiaries under age 75 may earn up to \$75 a month (\$50 before the amendments) in covered employment and continue to receive benefits.

The program is financed by contributions from employers and employees of 1½% each on wages up to \$3,600 a year; the self-employed (except farmers and members of specified professions) contribute 2½% of earnings up to \$3,600. In June 1952, 46,000,000 persons were in covered employment, exclusive of railroad employment.

Payments were also being made under other public programs. In July 1952 monthly retirement, disability and survivor benefits were being paid to beneficiaries under the railroad retirement program (507,200), veterans' programs (3,468,600) and the federal civil service (217,100). Programs for state and local government employees were paying retirement, disability and survivor benefits to a large group of beneficiaries. For temporary disability that was not work-connected, benefits were paid in four states and in the railroad industry. For work-connected disability, workmen's compensation programs were in effect for workers in all states and for federal employees.

The state-federal system of unemployment insurance pays benefits, financed by employer contributions, to qualified unemployed workers. The federal aspects of the program are administered by the department of labour. In July 1952 a weekly average of 870,900 unemployed workers drew benefits; total benefits in the month were \$88,612,000. Workers in 11 states had their weekly benefits supplemented by small allowances for their dependents. Under the Railroad Unemployment Insurance act about \$6,128,000 was paid in July 1952 to an average (in a 14-day period) of 68,600 railroad workers.

Assistance and Welfare.—The four special types of public assistance—old-age assistance, aid to dependent children, aid to the blind and aid to the permanently and totally disabled—are administered by the states or the local communities or both; the federal government shares in the costs within certain maximum amounts. Federal grants to the states for these programs in the fiscal year 1951-52 amounted to \$1,177,687,600; expenditures—federal, state and local—for assistance and administration of the four programs totalled about \$2,300,000,000. In July 1952, 2,648,641 needy persons aged 65 or over were receiving old-age assistance; the average payment was \$45.51; 2,004,154 persons (including 1,499,325 children in 577,780 families) were receiving aid to dependent children (average

payment per family, \$76.44); 97,635 were receiving aid to the blind (average payment, \$50.62); and 147,206 persons in 39 reporting states were receiving aid to the permanently and totally disabled (average payment, \$46.44). About 303,000 cases were receiving general assistance, financed by states and localities without federal funds; the average payment was \$48.35.

A change in the grant formula for the public assistance programs under the 1952 amendments made it possible for the states to pass on to assistance recipients additional federal funds amounting to \$5 a month for each aged, blind and disabled person and \$3 a month for each recipient of aid to dependent children. The provision, effective Oct. 1952, was scheduled to terminate in Sept. 1954.

The Social Security act also authorized federal grants to the states, administered by the children's bureau, to extend and improve their maternity services for mothers and their health and welfare services for children, including services for crippled children. During the year ended June 30, 1952, \$12,676,790 was paid to the states for maternal and child health services. Federal payments to the states for services for crippled children totalled about \$11,111,240; the programs provided diagnostic, medical and surgical services and hospital and convalescent care. Federal payments of about \$7,245,417 were made for child welfare services. (See also under article on each state.)

(A. J. A.)

Canada.—The national health and welfare minister, Paul Martin, estimated that in 1952 Canadian governments and voluntary agencies would spend \$1,330,000,000 on social security. Federal social security payments made during 1951 for health and hospital care, labour and unemployment insurance, unemployment relief, old-age and blind pensions, family allowances, veterans' pensions and benefits totalled \$670,503,000, compared with \$127,918,000 in 1944; provincial social security payments for health and hospital care, labour and unemployment relief, old-age and blind pensions totalled \$255,456,000, compared with \$75,462,000 in 1944. In 1952 federal family allowances went to the heads of 1,990,000 families and amounted to \$332,150,000; pensions, allowances and other payments went to 194,000 veterans and amounted to \$166,200,000.

The 1952 session of the federal parliament made extensive overhaul of the unemployment insurance act; amendments included an increase in rates of benefit, a reduction in the number of waiting days, an increase in the penalties for misrepresentation and provision for nondiscrimination by the employment service in referring workers for employment.

Ontario led the way in legislation to pay pensions to completely and permanently disabled persons; but only Alberta and Saskatchewan recommended immediate adoption of a national health insurance program.

(C. Cy.)

Other Countries.—The main alteration in the national insurance and ancillary schemes in Great Britain during 1952 was the increasing of family allowances, unemployment and sickness benefits, widows' and retirement pensions and national assistance rates necessitated by the increase in the cost of living. In Belgium supplementary and temporary allowances were made to the recipients of incapacity, invalidity and unemployment allowances. In France, the allowances to aged workers were increased. In Switzerland new legislation was enacted which increased minimum benefits and prolonged the benefit period. In Hungary legislation was passed under which a pension was granted to each wage-earning worker who reached the prescribed age limit. The International Labour conference adopted a convention to assure a certain minimum standard of social security protection to those living in different countries which was referred for ratification to the countries concerned. A model convention on social security was also drawn up under the

Brussels treaty permanent commission.

The report of the ministry of national insurance in Great Britain for 1951 was published and showed that at the end of 1951 207,000 persons were in receipt of unemployed benefits and about 33,000 in receipt of national assistance only, compared with 209,000 and 27,000 respectively at the end of 1950. There were about 400,000 men and women who had reached pensionable age and had not yet retired, so qualifying for increments to the pensions which would be payable on their ultimate retirement. About 3,100,000 families containing nearly 8,000,000 children were receiving family allowances. The annual report of the National Assistance board showed that 1,461,626 persons were receiving assistance at the end of 1951.

Most insured persons in Great Britain can continue contributing to the general national insurance scheme when they go abroad and thus maintain their benefit rights. In 1952 about 17,000 persons overseas were paying contributions direct to the ministry of national insurance and many others arranged for their friends to stamp cards for them while they were away. Approximately 18,000 retired pensioners were receiving their pensions overseas and about 5,000 persons abroad were receiving sickness and injury benefit for limited periods. New agreements on reciprocal benefits were made with Guernsey and Italy, and a further agreement with France. Negotiations with other European and commonwealth countries continued. An agreement previously negotiated between France and the Federal Republic of Germany came into operation. A new convention between Denmark and France provided for the rights of aged persons.

The only important alteration in the administration of the British national health service was the imposition of a charge of 1s. for each prescription dispensed by a chemist. This brought into operation a scheme for which legislative sanction had been obtained by the former Labour government. The average cost of each prescription was estimated at nearly 4s.

The National Council of Social Service continued, in association with its various affiliated bodies, to assist with voluntary efforts in the administration of the social services but experienced increasing difficulty in raising enough funds to meet its administrative expenses. Some government grants made to voluntary organizations were reduced or discontinued.

(See also BUDGET, NATIONAL; LAW.)

(JN. M.)

Social Service: see CHILD WELFARE; SOCIAL SECURITY.

Societies and Associations, U.S. The following is a selected list of U.S. societies and associations, with date of founding, membership, officers and chief activities during 1952. (See also the separate articles on RED CROSS; VETERANS' ORGANIZATIONS; etc.)

Alcoholic Foundation, Inc. (Alcoholics Anonymous).—Alcoholics Anonymous is a fellowship of men and women organized in 1935 to help the alcoholic recover. The only requirement for membership is stated to be "an honest desire to stop drinking." In 1952 there were 120,000 members in 4,500 groups throughout the world. The foundation, which was organized in 1938, is a nonprofit membership corporation serving as a general service board for the Alcoholics Anonymous movement. It publishes the book *Alcoholics Anonymous*, the monthly *The A.A. Grapevine* and various pamphlets. Officers' names are not given because of the organization's tradition of anonymity. It is supported solely through voluntary contributions. Headquarters: P.O. Box 459, Grand Central Annex, New York 17, N.Y.

American Academy of Arts and Letters.—The purpose of the academy, founded April 23, 1904, is "furthering the interests of literature and the fine arts in America." The academy consists of 50 members chosen from the 250 members of its parent organization, the National Institute of Arts and Letters. At the joint annual ceremonial held May 28, 1952, new members were inducted and honours and awards were conferred. An exhibition in honour of Sinclair Lewis was held in the museum of the academy, February-March 1952. Its publications include *Proceedings*, an annual, and *Yearbook of the National Institute and the American Academy*. Officers (1952): Paul Manship, president; Archibald MacLeish, chancellor; Mark Van Doren, secretary; Deems Taylor, treasurer. Headquarters: 633 W. 155th St., New York 32, N.Y.

American Academy of General Practice.—The academy was founded in

1947 to improve the professional abilities of physicians through postgraduate study, to gain for them wider opportunities for the practice of those abilities in U.S. hospitals and to assure the family doctor of a better understanding on the part of the public and the rest of the medical profession of his role in medical care. Membership, which is open to all physicians engaged in the general practice of medicine and surgery, numbered 15,773 in 1952. The Annual Scientific assembly was held in Atlantic City, N.J. The academy has no endowment, its activities being supported by membership fees. Publication: "GP" (monthly). Officers (1952) included: R. B. Robins, Camden, Ark., president; U. R. Bryner, Salt Lake City, Utah, president-elect; M. F. Cahal, Kansas City, Mo., executive secretary. Headquarters: 406 W. 34th St., Kansas City 2, Mo.

American Academy of Political and Social Science.—Founded in 1889 and incorporated in 1891, this organization acts as a forum for the discussion of social, political and economic questions through meetings and publications. Membership in 1952 was approximately 16,500. Publication: *The Annals*, a bimonthly journal. Officers (1952): Ernest M. Patterson, president; J. P. Lichtenberger, secretary. Headquarters: 3937 Chestnut St., Philadelphia 4, Pa.

American Association for the Advancement of Science.—Founded in 1848, this association seeks to further the work of scientists, facilitate co-operation among them and improve public understanding of the importance of science in human progress. Its membership in 1952 was 48,500. During 1952 the annual Exposition of Science and Industry was held in St. Louis, Mo., Dec. 27-30. Publications: *Science*, weekly; *Scientific Monthly*; and others. Officers (1952): Detlev W. Bronk, president; Howard A. Meyerhoff, administrative secretary. Headquarters: 1515 Massachusetts Ave. N.W., Washington 5, D.C.

American Association of Law Libraries.—Founded in 1906 to cultivate the science of law librarianship and increase the usefulness of law libraries, this association in 1952 numbered 600 members. During 1952, it assembled a classification plan for law libraries and continued a study of cataloguing rules adapted to law libraries. Publications: *Law Library Journal*; *Index to Legal Periodicals*; *Law Libraries of the U.S. and Canada*. Officers (1952): Forrest S. Drummond, president; Elizabeth Finley, treasurer; Frances Farmer, secretary. Headquarters: University of Virginia Law Library, Charlottesville, Va.

American Association of University Professors.—This organization of college and university teachers was founded in 1915 to promote discussion and action on problems affecting education in institutions of higher learning, and to provide means for expression of its membership. Its membership in Jan. 1952 was 42,263. Publication: the *Bulletin*, a quarterly journal. Officers (1952): Fred B. Millett, Wesleyan university, president; Ralph E. Himstead, general secretary. Headquarters: 1785 Massachusetts Ave. N.W., Washington 6, D.C.

American Association of University Women.—This organization was founded in 1882 as the Association of Collegiate Alumnae for "the uniting of the alumnae of different institutions for practical educational work." Membership in 1952 totalled 122,127. For 1952-53 the association offered 34 graduate fellowships, \$1,500 to \$3,000 each, to women scholars for advanced research; 57 women from 20 countries were awarded grants covering expenses of study in the U.S. The number of approved colleges and universities whose graduates were eligible for A.A.U.W. membership totalled 313 in 1952. Publications: *Journal*, quarterly, the *General Director's Letter*, handbooks, study guides and bibliographies. Endowed funds totalled \$1,101,269 in 1952. Officers (1952): Susan B. Riley, president; Mrs. Arthur J. White, treasurer; Mrs. Charles Sidney Bluemel, recording secretary. Headquarters: 1634 I St. N.W., Washington 6, D.C.

American Bankers Association.—Founded in 1875, the primary objective of this organization is to promote the general welfare and usefulness of banks and financial institutions. In 1952 it had a membership of 16,790 banks and banking offices. In its four divisions it operated through about 40 working groups. It is the parent organization of the American Institute of Banking for bank employees and the Graduate School of Banking for bank officers. In 1952, banks operated under government controls and credit restraints, and the association continued a nation-wide voluntary credit restraint program. This program was abandoned at midyear when credit restraints on consumer instalment buying and home mortgage loans were abolished by the Federal Reserve board. Officers elected in Oct. 1952 included: W. Harold Brenton, State Bank of Des Moines, Ia., president; Everett D. Reese, Park National bank, Newark, O., vice-president; William B. Gladney, Fidelity National bank, Baton Rouge, La., treasurer. Headquarters: 12 E. 36th St., New York, N.Y.

American Bar Association.—Founded in 1878 to advance the science of jurisprudence and promote the administration of justice in the U.S., the association had a membership of about 48,000 at the close of 1952. The annual medal for conspicuous service to U.S. jurisprudence was awarded in 1952 to Harrison Tweed of New York city; the Ross prize went to R. Dean Moorhead of Austin, Tex., for his essay "The Function of Concurring and Dissenting Opinions in Courts of Last Resort." Its publications include the *American Bar Association Journal*, an annual volume of reports and proceedings, and various pamphlets. Officers (1952) included: Robert G. Storey, Dallas, Tex., president; David F. Maxwell, Philadelphia, Pa., chairman of the house of delegates; Joseph D. Stecher, secretary; and Harold H. Bredell, treasurer. Headquarters: 1140 N. Dearborn St., Chicago 10, Ill.

American Bible Society.—Founded in 1816, the society encourages the wider circulation and use of the Holy Scriptures without note or comment and without purpose of profit. In 1952 manuscripts of the Scriptures in primitive languages were studied, and special committees were engaged in revising the Japanese Old Testament and the Spanish and Portuguese Bibles. In 1951, the Bible in three African languages and an illustrated edition in English of the *Acts of the Apostles* were published; 16,001,945 copies of the Scriptures were distributed throughout the world. Membership (1952): 300,000. Publication: *The Bible Society Record*. Officers (1952): Eric M. North, Frank H. Mann and Robert T. Taylor, general secretaries; Francis C. Stifter, recording secretary; Gilbert Darlington, treasurer. Headquarters: 450 Park Ave., New York 22, N.Y.

American College of Dentists.—The association was formed Aug. 20, 1920, to advance the standards and efficiency of dentistry, stimulate graduate study in dentistry, confer fellowships in recognition of meritori-

ous achievement especially in dental science, art and literature, and improve public understanding of oral health service. Membership in 1952 was 1,805. Activities throughout 1952 included the development of a motion picture, *Dentistry as a Career*; a preventive service program; and a medico-dental relations program. Publication: *Journal of the American College of Dentists* (quarterly). Officers (1952): W. C. Fleming, San Francisco, Calif., president; E. N. Bach, Toledo, O., vice-president; Otto W. Brandhorst, St. Louis, Mo., secretary. Headquarters: 4952 Maryland Ave., St. Louis, Mo.

American College of Life Underwriters.—Founded in 1927 to establish an educational standard for the profession of life underwriting and to encourage formal training for this field, the organization awards qualified candidates a professional certificate of recognition. By 1952, 4,470 had been awarded this certificate (C.L.U.) and 136 had been made C.L.U. Associates. In June 1952, 2,539 candidates took examinations for the certificate at 137 regional centres, and a total of 3,388 tests were taken during the year. A total of 4,786 persons had completed the five examinations necessary for the certificate, and 6,380 others had credit for one or more of the examinations. Publications: *Announcement*, *Annual Report* and brochures. An endowment of \$42,000 was raised in addition to about \$68,000 received annually from contributing life insurance companies. Officers (1952): Julian S. Myrick, chairman of the board; David McCahan, president; Joseph H. Reese, secretary. Headquarters: 3924 Walnut St., Philadelphia 4, Pa.

American College of Physicians.—This society was founded May 11, 1915, to bring together physicians of high standing for the maintenance and advancement of medical education, practice and research. Activities in 1952 included the 33rd annual session in Cleveland, O., April 21-25, plus 23 regional or state meetings; 17 postgraduate courses were conducted in various parts of the U.S. The college also awarded six research fellowships and, in conjunction with the W. K. Kellogg foundation, 16 Latin-American fellowships for training Latin-American men for teaching and research in their homelands. Membership in 1952 totalled 7,350. Publications include a directory and *Annals of Internal Medicine* (monthly). Endowment funds totalled \$377,000. Officers (1952): T. Grier Miller, Philadelphia, Pa., president; Richard A. Kern, Philadelphia, secretary-general; Edward R. Loveland, Philadelphia, executive secretary. Headquarters: 4200 Pine St., Philadelphia 4, Pa.

American College of Surgeons.—Founded in 1913 to advance the science of surgery, the organization held its 38th clinical congress in New York city, Sept. 22-26, 1952. The Inter-American session was held Jan. 16-18 in Panamá city, Panamá. Membership of the college in 1952 was 17,414. Publications: *Surgery, Gynecology and Obstetrics* and the *Bulletin*. Officers (1952): Alton Ochsner, president; Paul R. Hawley, director; Michael L. Mason, secretary. Headquarters: 40 E. Erie St., Chicago 11, Ill.

American Dental Association.—Founded in 1859 "to encourage the improvement of the health of the public and to promote the art and science of dentistry," this professional association numbered 77,447 members as of Nov. 30, 1952. It continued support of measures to add fluoride salts to community water supplies to reduce incidence of tooth decay, and by Dec. 1952, more than 500 U.S. cities and towns were fluoridating their water supplies. The association in February sponsored its fourth annual national children's dental health day. Its council issued a report calling attention to the serious financial plight of the nation's 42 dental schools. Publication: *Journal of the American Dental Association*. Officers (1952-53): Otto W. Brandhorst, president; Harold Hillenbrand, secretary; H. B. Washburn, treasurer. Headquarters: 222 E. Superior St., Chicago 11, Ill.

American Dialect Society.—This organization was founded at Harvard university in 1889 to collect, study and publish material on the English language, especially dialect as found in North America, together with other languages influencing it or influenced by it. In 1952 meetings were held in Boston, Mass., and Miami, Fla. Membership in 1952 was 610. Publications: *Dialect Notes*, 1890-1939 (6 vol.); *Publication of the American Dialect Society* (1944-). Officers (1952): E. H. Criswell, president; Thomas Pyles, secretary-treasurer. Headquarters: University of Florida, Gainesville, Fla.

American Economic Association.—This association, which in 1952 had 7,400 members and 2,700 library, corporate and individual subscriptions, was founded in 1885 to encourage economic research and freedom of economic discussion, and to issue publications on economic subjects. The annual meeting, a joint session with the Allied Social Science associations, was held in Chicago, Ill., Dec. 27-29, 1952. Publications include the *American Economic Review* (quarterly); *Papers and Proceedings* of the annual meeting; and a directory. Officers (1952): Harold A. Innis, University of Toronto, president; James Washington Bell, Northwestern university, secretary-treasurer and editor of the annual proceedings; Bernard F. Haley, Stanford university, managing editor of the quarterly. Headquarters: Northwestern University, Evanston, Ill.

American Geographical Society.—This organization was founded in 1852 to promote geographical research and exploration and to disseminate geographical knowledge. During 1952, the centennial year of the society, a convocation day was celebrated on May 22 with the opening of an exhibit at the society's headquarters; an open house was held Aug. 4-6 for geographers from all over the world who attended the International Geographic congress. Publications include: *Geographical Review*, quarterly; *Current Geographical Publications*; *Focus*; and *Geography in the Making*, a history of the society. Membership (1952): about 4,500. Officers (1952): Richard Upjohn Light, president; George H. T. Kimble, director. Headquarters: Broadway at 156th St., New York 32, N.Y.

American Historical Association.—This association of professional and nonprofessional students of history, founded in 1884, was organized "for the promotion of historical studies, the collection and preservation of historical manuscripts, and for kindred purposes in the interests of American history. . . ." It was incorporated by act of congress in 1889. The association's membership in 1952 was about 6,000, and its endowment was about \$350,000. Publications include the *American Historical Review*, *Annual Report* and selected historical monographs. Officers (1952): James G. Randall, University of Illinois, president; Guy Stanton Ford, Washington, D.C., executive secretary. Headquarters: Study Room 274, Library of Congress Annex, Washington 25, D.C.

American Institute for Property and Liability Underwriters, Inc.—Founded in 1942, this organization was organized to establish an educational standard for the profession of property and casualty insurance underwriting. In June 1952, 1,498 persons took examinations which are held by the institution for certification of underwriters; 1,946 persons had credit for one or more of the five examinations which were held at 116 universities and colleges in 39 states, the District of Columbia and Germany. By 1952 a total of 878 examinees had received the C.P.C.U. designation. The institute receives \$25,000 annually from property and casualty insurance companies and additional funds from other insurance organizations. Publication: *Announcement*, annual, and *C.P.C.U.—Its Meaning and Purpose*. Officers (1952): S. S. Huebner, chairman, board of trustees; C. R. McCotter, president; A. C. Goerlich, secretary. Headquarters: 3924 Walnut St., Philadelphia 4, Pa.

American Institute of Accountants.—A national professional society of certified public accountants, founded in 1887 to maintain high professional and ethical standards, to develop accountancy education and to provide for the examination of candidates for membership. In 1952 the institute had a membership of 19,593. The year's activities included the preparing of the uniform C.P.A. examinations given in 48 states, the conducting of local and regional meetings, the issuing of bulletins on accounting procedure and case studies in auditing procedure, and recommendations for improvement of federal income-tax laws. Publications: *Journal of Accountancy* and *Certified Public Accountant*, both monthly, and others. Officers (1953) included J. A. Phillips, president; John L. Carey, executive director. Headquarters: 270 Madison Ave., New York 16, N.Y.

American Institute of Architects.—The objects of this organization, founded in 1857, are "to promote the aesthetic, scientific and practical efficiency of the architectural profession; to advance the standards of architectural education, training and practice; and to coordinate the building industry and the profession of architecture." The organization's annual convention was held in New York City, June 23-27, 1952. Membership in 1952 was 9,100. Publications: *Journal*, monthly; *Bulletin*, bimonthly; and *Memo*, biweekly. Officers (1952) included: Glenn Stanton, Portland, Ore., president; and Clair W. Ditchy, Detroit, Mich., secretary. Headquarters: 1741 New York Ave. N.W., Washington 6, D.C.

American Institute of Chemical Engineers.—This organization was founded in 1908 for the advancement of chemical engineering in theory and practice and the maintenance of a high professional standard among its members. Activities in 1952 included the annual meeting at Cleveland, O., Dec. 7-10, and three regional meetings. As of April 30, 1952, the membership was 11,770. Publication: *Chemical Engineering Progress* (monthly). Officers (1952) included William I. Burt, president; Stephen L. Tyler, executive secretary. Headquarters: 120 E. 41st St., New York 17, N.Y.

American Institute of Electrical Engineers.—This association was founded in 1884 to advance the theory and practice of electrical engineering and of allied arts and sciences and to maintain a high professional standing among its members. Its 1952 activities included four general and three district meetings; participation in the Centennial of Engineering held in Chicago, Ill., in September; and 3,000 meetings of sections and student branches. There was also much activity in the 5 technical divisions and 39 technical committees in advancing developments in the field of electrical engineering. Membership in 1952 was 45,000. Publications: *Electrical Engineering*, monthly; *Transactions*, annually; *Standards* and special publications, published irregularly. Officers (1952): Donald A. Quarles, president; H. H. Henline, secretary. Headquarters: 33 W. 39th St., New York 18, N.Y.

American Institute of Mining and Metallurgical Engineers.—This society was founded in 1871 to promote the arts and sciences connected with the economic production of minerals and metals and the welfare of the individuals employed in these industries. The regular annual meeting was held in New York, N.Y., Feb. 18-21, 1952. In 1952 there were 17,221 members and 2,341 student associates. Publications: *Mining Engineering*, *Journal of Metals* and *Journal of Petroleum Technology*, all monthly. The institute's endowments total \$935,000. Officers (1952) included Michael L. Haider, president, and Edward H. Robie, secretary. Headquarters: 29 W. 39th St., New York 18, N.Y.

American Iron and Steel Institute.—In 1908 this organization was founded to promote the interests of the iron and steel industry, distribute information and promote discussion of problems relating to the industry. During 1952 committees held about 300 meetings at which total attendance was more than 4,500. Its 1952 membership included 2,403 active, associate, honorary and emeritus members, and 94 company members. Publications: *Steelways*, bimonthly; *Steel Facts*, bimonthly; and numerous booklets and pamphlets. Officers (1952) included Max D. Howell, executive director and treasurer; George S. Rose, secretary. Headquarters: 350 Fifth Ave., New York 1, N.Y.

American Law Institute.—Founded Feb. 23, 1923, this organization is designed to promote the clarification and simplification of the law and its better adaptation to social needs. In 1952 the institute published the official draft of the Uniform Commercial Code and sponsored numerous courses and lectures and the distribution of literature on selected phases of the law. Work continued in 1952 on the drafting of a federal income tax statute and a five-year project to draft a code of substantive criminal law was begun. In 1952 there were 1,176 elected members. Officers (1952) included Harrison Tweed, president; Herbert F. Goodrich, director and secretary; Earl G. Harrison, treasurer. Headquarters: 133 S. 36th St., Philadelphia 4, Pa.

American Mathematical Society.—Established in 1888 to further the interests of mathematical scholarship and research, the society held 12 meetings during 1952. Publications: *Bulletin of the American Mathematical Society*; *Proceedings of the American Mathematical Society*; *Transactions of the American Mathematical Society*; and *Proceedings of the International Congress of Mathematicians*. Membership in 1952 was 4,453. Officers (1952): John von Neumann, president; E. G. Begle, secretary. Headquarters: 80 Waterman St., Providence 6, R.I.

American Medical Association.—This federation of constituent state and territorial medical associations was founded in 1847 to promote the science and art of medicine and the betterment of public health. Activities during 1952 included the evaluation of new drugs, foods, physical medi-

cine devices and techniques, cosmetics and pesticides. In 1952 members contributed more than \$500,000 to aid medical schools. Publications: *The Journal of the American Medical Association*; *American Medical Directory*; *Today's Health*, a monthly magazine; and several special publications. Membership in 1952 was approximately 140,000. Officers (1952): Louis H. Bauer, Hempstead, N.Y., president; Edward J. McCormick, Toledo, O., president-elect; George F. Lull, Chicago, Ill., secretary and general manager. Headquarters: 535 N. Dearborn St., Chicago 10, Ill.

American Optometric Association.—Founded in 1897, this organization's purpose is to promote the visual welfare of America and serve the professional interests of optometrists. During 1952 it presented a new visual recognition chart developed after five years of research. Seminars met in Cleveland, O., and Chicago, Ill.; the annual Congress of Optometry was held in Miami Beach, Fla., with the theme of children's vision. Membership in 1952 totalled 11,000. Publications: *Journal of the American Optometric Association*, published monthly, *Visual Digest* and booklets on highway vision and optometry as a vocation. Officers (1952): James F. Wahl, president; Leo G. Miller, treasurer; Ernest H. Kiekenapp, secretary. Headquarters: Jenkins building, Pittsburgh 22, Pa.

American Prison Association.—Founded in 1870 and incorporated in 1871, this association works for the improvement of laws governing public offenders, studies the causes of crime and the nature of offenders and their social surroundings, works for the improvement of penal institutions, and is concerned with the care of and provision of jobs for former prisoners. In 1952 the association sponsored the 82nd annual congress of correction. Membership in 1952 was about 2,000 consisting of court, crime-enforcement and penal officials and citizens interested in crime problems. Publications: *Prison World* (bimonthly); *Handbook on Classification*; *Manual of Suggested Standards for a State Correctional System*; and others. Officers (1952): James W. Curran, president; E. R. Cass, general secretary; John L. Schoenfeld, treasurer. Headquarters: 135 E. 15th St., New York 3, N.Y.

American Society of Civil Engineers.—Commemorating its founding in 1852 as the first national engineering group, the society sponsored its centennial in Chicago during Sept. 1952. This celebration featured more than 200 sessions arranged by 65 engineering organizations and attended by thousands of U.S. and foreign engineers. In 1952 the society membership was about 35,000. Organized for the purpose of advancing the sciences of engineering and architecture, the society directs professional activities from its headquarters in New York city, through 73 local sections and student chapters in 133 engineering colleges; also the 13 following technical divisions: air transport, city planning, construction, engineering mechanics, highways, hydraulics, irrigation and drainage, power, sanitary engineering, soil mechanics and foundations, structural, surveying and mapping, and waterways. Publications: *Proceedings-Separates* (several pamphlets each month); *Transactions*, yearly; *Civil Engineering*, monthly; a *Directory* (membership list), and a *Register* (organization details). Officers (1952): Carlton S. Proctor, president; (1953) Walter L. Huber, president; William N. Carey, executive secretary. Headquarters: 33 W. 39th St., New York 18, N.Y.

American Society of Composers, Authors and Publishers (ASCAP).—Founded in 1914, the society, a voluntary nonprofit unincorporated association, collects performing right royalties for allocation to members whose copyrighted musical works are used in public performances for profit. Its membership in 1952 totalled 3,100. Officers (1952) included Otto A. Harbach, president; Frank H. Connor and Oscar Hammerstein II, vice-presidents; Paul Cunningham, secretary; Louis Bernstein, treasurer. Headquarters: 575 Madison Ave., New York 22, N.Y.

American Society of Mechanical Engineers.—This organization was founded in 1881 to promote the art and science of mechanical engineering, to encourage original research, to foster engineering education, to advance the standards of engineering and to promote interchange of ideas among engineers themselves. In 1952 the society held four national meetings and six professional division conferences. In addition, meetings were held by the 77 local sections, 6 subsections and the 134 student branches. Membership totalled 37,887 in 1952. Publications: *Mechanical Engineering* and *Applied Mechanics Reviews*, both monthly; *Journal of Applied Mechanics*, quarterly; *ASME Mechanical Catalog and Directory*, annual. Officers (1952): R. J. S. Pigott, president; Clarence E. Davies, secretary; J. L. Kopf, treasurer. Headquarters: 29 W. 39th St., New York 18, N.Y.

American Sunday-School Union.—The purpose of this organization, founded in 1817 as the Sunday and Adult School union, is "to organize and maintain Sunday schools in the rural areas of the United States and to publish and circulate Christian literature." During 1952, 1,576 vacation Bible schools were held with an enrolment of 46,418. More than 2,400 rural Sunday schools enrolled 93,404, and 99 Young People's Bible conferences were attended by more than 7,000 rural youths. A new group, Pioneers for Christ, was organized for rural boys and girls of high school age. Publications included a full line of Sunday-school periodicals. The work is supported largely by contributions and a small endowment. Officers (1952): Belding B. Slifer, president; Elliott D. Parkhill, secretary of missions; William J. Jones, editor of publications. Headquarters: 1816 Chestnut St., Philadelphia, Pa.

Boy Scouts of America.—This nation-wide youth organization with activities for boys of eight years and older was organized in 1910 and chartered by congress in 1916. Objectives are to teach patriotism and citizenship and the importance of religion in daily life. In 1952 Boy Scout week, celebrating the 42nd anniversary of the group, was observed nationally, Feb. 6-12. A three-year program was launched with the slogan, "Forward on Liberty's Team." Civic activities included a "Get Out the Vote" campaign in November. Membership, 1952, was 2,996,267. The world scout membership as of 1949 was 4,416,306 in 46 countries. Headquarters: 2 Park Ave., New York 16, N.Y.

Brookings Institution.—A nonprofit organization dedicated to public service through research and education in economics and government, the institution was founded in 1928 and is supported by income from its own endowment, grants from foundations and the sale of publications. During 1952 the following studies were published: *Share Ownership in the United States*, by Lewis H. Kimmel; *Health Resources of the United States*, by George W. Bachman and associates; and *Major Problems of*

United States Foreign Policy. Officers (1952): Robert D. Calkins, president; Elizabeth H. Wilson, secretary. Headquarters: 722 Jackson Place N.W., Washington 6, D.C.

Buhl Foundation.—Established in 1927, the Buhl foundation had by 1952 granted to existing (or especially established) agencies a total of \$7,545,230 for the promotion of nationally significant programs in the Pittsburgh, Pa., district. These programs were in regional economics, historical and social research, in higher education and in research in natural sciences. The foundation's \$1,700,000 Chatham Village, pioneering demonstration of large-scale planned residential community built for long-term investment, had received international recognition. The \$1,100,000 Buhl planetarium, built and maintained as a memorial to the founder, had conducted a program of popular science education from elementary school to adult level since 1939. Foundation assets in 1952 were \$13,351,679. Director: Charles F. Lewis. Headquarters: Farmers Bank building, Pittsburgh 22, Pa.

Camp Fire Girls, Inc.—This youth organization, founded in 1910, aims "to perpetuate the spiritual ideals of the home" and "to stimulate and aid in the formation of habits making for health and character." In 1952 Camp Fire Girls observed Birthday week (theme: "Design for Friendship"), March 16–22, and conducted a membership drive, Sept. 15 through Nov. 30. Activities also included participation in a project to send dolls to war orphans in Europe. In 1952 more than 370,000 girls were reported enrolled in its three groups: Blue Birds, 7 to 9 years old; Camp Fire Girls, 10 to 15 years old; and Horizon club members, of senior high school age. Publications: *Book of the Camp Fire Girls*; *The Camp Fire Girl* (monthly); and others. National officers (1952): Mrs. Richard W. Blalock, president; George W. Hearn, chairman of the board; Mrs. R. L. Heminger, secretary; Martha F. Allen, national director. Headquarters: 16 E. 48th St., New York 17, N.Y.

Carnegie Trusts.—Six autonomous and separately administered agencies in the U.S. were established by Andrew Carnegie for various philanthropic purposes; in addition, there are four Carnegie trusts in Great Britain, and Carnegie Hero funds operate in nine European countries.

Carnegie Corporation of New York (1911), with a basic endowment of \$135,000,000, had in 1952 assets of more than \$175,000,000; the income from \$12,000,000 of this is applicable in the British dominions and colonies. Its purpose is the advancement and diffusion of knowledge and understanding among the people of the U.S. and the British dominions and colonies. Grants are awarded to institutions of higher education and organizations engaged in research and public education. The primary interest is in the advancement of the social sciences and in the improvement of teaching. President (1952) Charles Dollard; secretary, Robert M. Lester. Headquarters: 522 Fifth Ave., New York 36, N.Y.

Carnegie Institute of Pittsburgh (1896) includes a department of fine arts, a music hall and a museum of natural history, and to it are closely related the Carnegie Library of Pittsburgh, the Carnegie Library school and the Carnegie Institute of Technology. President (1952), James M. Bovard; secretary, Augustus K. Oliver. Headquarters: 4400 Forbes St., Pittsburgh 13, Pa.

Carnegie Institution of Washington (1902), with assets exceeding \$48,000,000 in 1952, conducts fundamental scientific investigation, particularly in astronomy, terrestrial magnetism, geophysics, archaeology, plant biology, embryology, genetics and historical research. President (1952), Vannevar Bush; executive officer, Paul A. Scherer. Headquarters: 1530 P St. N.W., Washington 5, D.C.

Carnegie Hero Fund Commission (1904), with assets in 1952 of approximately \$10,000,000, was established to recognize by medals and monetary awards heroic acts performed in the peaceful walks of life. President (1952), Thomas S. Arbuthnot; manager, M. H. Floto. Headquarters: Oliver building, Pittsburgh 22, Pa.

Carnegie Foundation for the Advancement of Teaching (1905) was established to provide retiring pensions for teachers and to advance higher education. In addition to an original grant from Carnegie, by 1952 it had received sums amounting to more than \$32,000,000 from the Carnegie corporation. President (1952), Oliver C. Carmichael; secretary, Robert M. Lester. Headquarters: 522 Fifth Ave., New York 36, N.Y.

Carnegie Endowment for International Peace (1910) uses the income from its \$10,000,000 endowment to further friendly understanding among nations, its aim in 1952 being to study problems of international organization and contemporary world politics. President (1952), Joseph E. Johnson; secretary, Leslie Paffrath. Headquarters: 405 W. 117th St., New York 27, N.Y.

Catholic Community Service, National.—This service organization was founded on Nov. 13, 1940, as the agency designated by the Catholic bishops of the U.S. to mobilize and co-ordinate the Catholic resources of the country to assist in serving the spiritual, educational, recreational and welfare needs of the men and women in the armed forces, their families, patients in Veterans administration hospitals and individuals and their families in defense impacted communities. During 1952 the service conducted volunteer work in 158 hospitals and also conducted programs in 62 activities near major military establishments in the U.S. and overseas. Publications: *NCCS News*; several religious pamphlets; and *Greetings!*, a pamphlet for young men about to be inducted into the armed forces. Thomas D. Hinton was executive director in 1952. Headquarters: 1312 Massachusetts Ave. N.W., Washington 5, D.C.

Catholic Library Association.—Founded in 1921 as a section of the National Catholic Educational association, it became an independent organization in 1929. Its purpose is to initiate and encourage any movement that will promote Catholic literature and Catholic library work. In February 1952 Catholic Book week was celebrated in conjunction with the Catholic Press Month convention in New York city. Membership in 1952 was about 1,900. Publications: *Catholic Supplement to the Standard Catalog for High School Libraries*; *Catholic Periodical Index*; *Catholic Booklist*; and *Catholic Library World*. Officers (1952): John M. O'Loughlin, president; Helen L. Butler, president-elect; Mrs. Jeannette Murphy Lynn, executive secretary. National headquarters address: 209 Vine Ave., Park Ridge, Ill.

Catholic Organizations for Youth.—The central co-ordinating agency of this organization, organized on diocesan and national levels, is the youth department of the National Catholic Welfare conference. The purpose of

the Catholic youth organizations is the fostering of the spiritual welfare of young people through religious, cultural, social and athletic activities. Organizations connected with the diocesan section by affiliation are the Columbian Squires, the Junior Catholic Daughters of America, the Young Christian Workers, the Daughters of Isabella and the Sodality of Our Lady. In 1951 the diocesan section was raised to the national level by the formation of the National Federation of Diocesan Catholic Youth councils; this organization, the National Federation of Catholic College Students and the National Newman Club federation formed the National Council of Catholic Youth. The total number of young persons reached by the various programs was estimated in 1952 at about 7,000,000. In 1952 a new magazine called *Vision* was established, and National Catholic Youth week was celebrated Oct. 19–26. Diocesan groups and college federations have individual publications, and the youth department of the N.C.W.C. publishes *Newsnotes*, a monthly with material of interest to diocesan youth directors; *Program Service*, for parish youth directors; a *Catholic Youth Directory*; and pamphlets. Msgr. Joseph E. Schieder was N.C.W.C. youth department director in 1952. Headquarters: 1312 Massachusetts Ave. N.W., Washington 5, D.C.

Catholic Rural Life Conference, National.—This organization was founded in 1923 to care for underprivileged Catholics in farming areas and to encourage Catholics to settle and remain on the land. During 1952 it urged individual responsibility for flood control and reaffirmed its support of the family-farm principle. Publication: *The Christian Farmer*. Membership in 1952 was 10,000. Officers (1952): Albert R. Zuroweste, Bishop of Belleville, president; Msgr. L. G. Ligutti, executive director. Headquarters: 3801 Grand Ave., Des Moines 12, Ia.

Catholic Welfare Conference, National.—This organization was founded in 1919 to organize and co-ordinate the Catholic residents of the U.S. in works of education, social welfare, immigrant aid and other activities. During 6 months of 1952 War Relief Service distributed 29,139,438 lb. of relief material valued at \$12,740,639. The National Council of Catholic Men began a Film Information service and presented a television series on the sacraments. Publications: *Catholic Action* and *Vision*, a monthly magazine in the field of Catholic youth. Officers (1952): Archbishop Francis P. Keough, Baltimore, Md., chairman; Bishop John F. Noll, Fort Wayne, Ind., secretary. Headquarters: 1312 Massachusetts Ave. N.W., Washington 5, D.C.

Chamber of Commerce of the United States.—A federation of businessmen's organizations founded in 1912, the chamber was organized "to promote a better understanding of the functions of American business enterprise and of the contribution of business to public well-being and to serve as a clearinghouse of business opinion on economic issues."

In 1952 the national chamber's program emphasized six issues: building a better public understanding of basic economic issues and the American profit and loss system; creating a demand for government economy and efficiency; helping develop an equitable tax system; promoting voluntary welfare developments; establishing a fair basis for labour-management relations with a minimum of government intervention in collective bargaining; and supporting foreign policy which would protect national security and safeguard the citizen's home, individual rights and business.

In 1952 there were 3,315 organization members (state and local chambers of commerce and trade and industrial organizations) and 23,000 business members (firms, corporations and individual businessmen).

Publications: *Washington Report* (weekly); *Nation's Business* (monthly); *Legislative Daily*; *Bill Digest*; *American Economic Security*, published eight times a year; newsletters; and special reports, papers, studies, etc. Officers (1952): Laurence F. Lee, president; D. A. Hulcy, chairman of the board of directors; Otto A. Seyferth, chairman of the executive committee. Headquarters: 1615 H St. N.W., Washington 6, D.C.

Charles Hayden Foundation.—This organization was established in 1937 under the will of Charles Hayden to assist young men to "receive proper training in boyhood and youth . . . in the manner of right and proper living." Its activities are devoted mainly to aiding boys' clubs, boys' camps and similar projects for underprivileged boys, especially those of the New York, N.Y., and Boston, Mass., areas. By Sept. 30, 1952, the foundation had contributed \$22,092,636 for these purposes, and there was approximately \$52,292,865 in the fund. Officers: J. Willard Hayden, president; Edgar A. Doubleday, executive vice-president and treasurer; Erle V. Daveler, vice-president. Headquarters: 25 Broad St., New York 4, N.Y.

Commonwealth Fund.—Established in 1918 by Mrs. Stephen V. Harkness "to do something for the welfare of mankind," and increased by other bequests, the fund amounted to approximately \$85,000,000 at the end of the fiscal year 1951–52. Appropriations for that year were \$2,719,737. The major concern of the fund in 1952 was helping medical schools to reorient medical education to the student and medical care to the patient, by better integration and increased attention to the relation between the patient and his environment. Grants for medical education amounted to \$1,217,554; for experimental health services \$433,068; and for medical research \$413,569. In the academic year 1952–53, 37 men and 1 woman held Commonwealth fund British fellowships for students and civil servants from Great Britain and other parts of the British Commonwealth. Nine new fellowships were held by Europeans who attended the Salzburg Seminar in American Studies. The fund publishes an annual report. Malcolm P. Aldrich was president in 1952. Headquarters: 1 E. 75th St., New York 21, N.Y.

Daughters of the American Revolution.—The National Society of the Daughters of the American Revolution was founded in 1890 for historical, patriotic and educational purposes. The society in 1952 had 171,021 members in 2,699 chapters. During the year it operated two schools and provided financial assistance to others; conducted programs for good citizenship; operated 11,823 Junior American Citizens clubs with 356,589 members; maintained a genealogical library; and conducted various educational programs of a patriotic nature. Publications: *Daughters of the American Revolution Magazine*; *D.A.R. Manual for Citizenship*; and *Press Relations Digest*. Mrs. James B. Patton was president general in 1952. Headquarters: 1776 D St. N.W., Washington 6, D.C.

Duke Endowment.—By an indenture executed Dec. 11, 1924, by James B. Duke, the Duke endowment was established as a common-law trust "to make provision in some measure for the needs of mankind along physical,

mental and spiritual lines." The fund allocates payments to educational institutions, including Duke university, Durham, N.C., and also distributes funds to help support hospitals, orphanages and the Methodist Church in rural areas. The amount distributed from Dec. 11, 1924, to Dec. 31, 1951, was \$96,077,322.79. The fund is supervised by a self-perpetuating board of 15 trustees. Officers (1952) included George G. Allen, chairman; Alex H. Sands, Jr., secretary; Walter C. Parker, treasurer. Headquarters: Power building, Charlotte 1, N.C.

Elks, Benevolent and Protective Order of.—Founded in 1868, this service organization in 1952 had 1,080,000 members in 1,615 lodges. Its purpose is to practise charity, justice, brotherly love and fidelity; promote the welfare and enhance the happiness of its members; quicken the spirit of American patriotism and cultivate good fellowship. In 1952 charitable expenditures totalled almost \$6,000,000. The order supported the government's blood-bank program and also provided financial aid to people studying in cerebral palsy treatment centres, to crippled children and to tubercular patients. Publication: *The Elks Magazine*. Officers (1952): Sam Stern, Fargo, N.D., grand exalted ruler; J. E. Masters, grand secretary; 12750 Lakeview Ave., Chicago 14, Ill., the national headquarters.

Falk Foundation, Maurice and Laura.—This foundation was established in 1929 with the broad purpose of the advancement of human welfare. Activities of 1952 included grants to economic research organizations for studies of problems concerning the operation and development of the domestic economy of the U.S. and grants for studies and projects to promote the efforts of colleges and universities to prepare their students for the political responsibilities of U.S. citizenship. Publications: *Preparing College Men and Women for Politics and Health Resources in the United States*. Funds as of June 13, 1952, were \$10,408,113.13. Officers (1952): Leon Falk, Jr., chairman; Eugene B. Strassburger, secretary; J. Steele Gow, executive director. Headquarters: 1911 Farmers Bank building, Pittsburgh 22, Pa.

Ford Foundation.—Founded on June 15, 1936, the Ford foundation devotes its resources "to programs for the advancement of peace, education, the behavioral sciences, democratic institutions and economic stability." During the year ended Dec. 31, 1951, it approved grants totalling \$22,331,736, of which more than \$10,000,000 was allocated through the Fund for the Advancement of Education and the Fund for Adult Education, and \$6,550,000 was for work in India, Pakistan and the middle east. The total assets of the foundation as of Jan. 1, 1951, amounted to \$492,678,255. Officers (1952) included Henry Ford II, chairman; Paul G. Hoffman, president; Oliver May, secretary and treasurer. Offices: 914 East Green St., Pasadena, Calif.; 655 Madison Ave., New York, N.Y.; Buhl building, Detroit, Mich.

Franklin Institute of the State of Pennsylvania.—This nonprofit institution was founded in 1824 for promotion of the mechanic arts. It devotes itself to interpreting science for nontechnical persons and to research for the benefit of industry and government. Activities include maintenance of the Benjamin Franklin memorial, a museum of science and industry, including Fels planetarium; a technical library of more than 139,000 volumes, 50,000 pamphlets and 6,900 maps; lectures and exhibits on a wide variety of subjects; honour awards for distinguished achievements in science and technology; publication of the *Journal of the Franklin Institute*; the Franklin Institute Laboratories for Research and Development; the Bartol Research foundation; and the Biochemical Research foundation. In 1952 the second annual meeting of the National Asphalt Research centre was held. Income is derived from dues of approximately 6,000 members, museum and planetarium admissions, bequests and gifts and industrial sponsorship of research and exhibits. Officers (1952): S. Wyman Rolph, president; Henry B. Allen, executive vice-president and secretary. Headquarters: Benjamin Franklin Parkway at 20th St., Philadelphia 3, Pa.

Freemasonry.—Said to be the oldest and largest fraternal organization in the world, the Masonic fraternity is nonsectarian, nonpolitical and has no benefit or insurance provisions. Its purpose is the moral and spiritual elevation of its members and, through them, of mankind. Since the 18th century its lodges have been joined together in grand lodges, mostly on a territorial basis, each grand lodge being independent. Masonic organizations based on lodge membership include the Royal Arch, the Knights Templar and the Scottish Rite. In 1952 the bicentennial of the initiation of George Washington into the mysteries of Freemasonry was observed. During the year dispensations were granted to two new research lodges, both in California. Masonic membership in the U.S. in 1952 was 3,731,689 in 15,437 lodges; world membership was in excess of 5,000,000. Publications: annual transactions by all grand lodges and many of the related organizations.

Future Farmers of America.—Founded Nov. 20, 1928, this is a national organization of boys studying vocational agriculture in public secondary schools under the provisions of the national vocational education acts. The chief of the agricultural education service of the U.S. office of education is chairman of an adult national advisory council. The purpose of the Future Farmers is to develop agricultural leadership, co-operation and citizenship. Membership as of June 30, 1952, was 352,916. Publications: *National Future Farmer*, quarterly, and various pamphlets. Officers (1952) included Donald Staheli, national president and Charles Ocker, student secretary. Headquarters: U.S. Office of Education, Federal Security Agency, Washington 25, D.C.

Georgia Warm Springs Foundation.—This nonprofit organization, founded on July 28, 1927, treats aftereffects of poliomyelitis at the hospital and facilities at Warm Springs, Ga. It has no endowment, its annual deficit being financed by appropriations from the National Foundation for Infantile Paralysis. Publications include annual reports and medical articles of the professional staff. Officers (1952): Basil O'Connor, president and treasurer; Henry K. Urien, executive vice-president and counsel; William F. Snyder, vice-president and secretary. Headquarters: 120 Broadway, New York 5, N.Y.

Girl Scouts of the United States of America.—The purpose of this organization, founded in 1912 by Juliette Low, "is to help girls realize the ideals of womanhood as a preparation for their responsibilities in the

home and as active citizens in the community and in the world." Activities in 1952 included participation in the 14th biennial world conference of the Girl Guides and Girl Scouts at Dombas, Nor., Aug. 2-14. On election day in Nov. 1952, the Girl Scouts helped mothers get to the polls by caring for their children and homes. On June 30, 1952, 1,890,000 girls and adults were members. Publications: *Girl Scout Leader*; *American Girl*; and *Girl Scout Handbook*. Officers (1952): Dorothy C. Stratton, national executive director; Mrs. Roy F. Layton, president; Mrs. Charles H. Ridder, secretary. Headquarters: 155 E. 44th St., New York 17, N.Y.

International College of Surgeons.—This organization was founded in Geneva, Switz., in 1935 to create a common bond among surgeons of all nations and promote high standards in surgery. In 1952 an international assembly was held in Madrid, Sp., May 19-24; postgraduate courses were given in Argentina, Brazil, Germany, Austria and the U.S. Membership was about 9,000. Its publication is *The Journal of the International College of Surgeons*. Officers (1952): Hans Finsterer (Austria), president; Max Thorek, secretary general. Headquarters: 1516 Lake Shore Dr., Chicago 10, Ill.

Jewish Welfare Board, National.—Founded in 1917, this agency is authorized by the U.S. government to serve the religious, welfare and morale needs of Jews in the U.S. armed forces at home and abroad and in Veterans administration hospitals. In 1952 it had 285 community armed services committees. It recruited and served 85 full-time and 220 part-time Jewish chaplains, and represented the U.S. Jewish community in the United Service organizations, on whose behalf it operated 35 clubs and area operations. Since 1921 it had also been the national association of Jewish Community centres and Young Men's and Young Women's Hebrew associations. Its 1952 membership included 343 centres with 510,000 members and 40 national affiliated organizations. Officers (1952): Irving Edison, president; S. D. Gershovitz, executive vice-president. Headquarters: 145 E. 32nd St., New York 16, N.Y.

John Simon Guggenheim Memorial Foundation.—Founded in 1925, the foundation "offers Fellowships, to further the development of scholars and artists by assisting them to engage in research in any field of knowledge and artistic creation in any of the fine arts including music, under the freest possible conditions." The organization during 1952 awarded 149 fellowships to citizens of the U.S., 9 to Canadians and 30 to citizens of the Latin American republics and the Republic of the Philippines. Endowment: \$30,000,000. Officers (1952): Mrs. Simon Guggenheim, president; Henry Allen Moe, secretary. Headquarters: 551 Fifth Ave., New York 17, N.Y.

Kellogg Foundation.—The W. K. Kellogg foundation was established in 1930 to promote the health, education and welfare of mankind, principally of children and youth without regard to race, sex, creed or nationality. It functions through the divisions of dentistry, education, medicine and public health, hospitals, nursing and the international division. It is administered by a board of trustees, and its assets totalled \$67,971,407 in 1952. Officers (1952): Emory W. Morris, president; Glenn A. Cross, vice-president; Bessie Rogers Young, secretary and treasurer. Headquarters: 250 Champion St., Battle Creek, Mich.

Kiwanis International.—Founded Jan. 21, 1915, in Detroit, Mich., this service organization operates through community Kiwanis clubs, comprised of business and professional men. It celebrated the fourth annual National Kids' day, Sept. 27, 1952, and members again raised more than \$500,000 to continue youth programs. Clubs provided lunches and milk for 559,657 needy children, sponsored 2,743 activities promoting economy in government and raised \$10,812,822.14 for public welfare campaigns. Membership in 1952 included more than 215,000 in 3,500 clubs of the U.S., Canada, Alaska, Hawaii and the Yukon territory. Publications: *Kiwanis Magazine*, *Monthly Club Bulletin* and *The Keynote*, organ of the Kiwanis-sponsored Key clubs for outstanding high school youths. Officers, 1952-53: Walter J. L. Ray, president; O. E. Peterson, secretary; Donald T. Forsythe, treasurer. Headquarters: 520 N. Michigan Ave., Chicago 11, Ill.

Knights of Columbus.—This Roman Catholic men's organization was founded in 1882 for the mutual help of its members and to conduct educational, charitable, religious, social and relief work. In 1952 it was reported that 94,723 persons had been enrolled for Catholic instruction by mail. The advertising budget was increased from \$500,000 to \$750,000 for 1953. Its membership in 1952 was 829,634. Publication: *Columbia*, a monthly. John E. Swift was supreme knight. Headquarters: 45 Wall St., New Haven 7, Conn.

League of Women Voters of the United States.—Founded Feb. 14, 1920, to promote informed and active participation of citizens in government, the membership in 1952 was 106,000 in 848 leagues in 47 states. In 1952 the league held discussions and published material on measures concerning world security and the improvement of congressional budgetary procedures. League services included demonstrating voting machines, campaigning to have people register and vote and watching polls. Publications: *On the Record*, a report of roll call votes; *BIG Government and Conservation*; *The Citizen and International Trade*; and *Congressional Strings on the Public Purse*. Officers (1952): Mrs. John G. Lee, president; Mrs. Walter Neale, secretary; Mrs. F. W. Hopkins, treasurer. Headquarters: 1026 17th St. N.W., Washington 6, D.C.

Lions Clubs, International Association of.—The purpose of this organization, founded in 1917, is "to recognize community needs and develop means of meeting them, either through the clubs' own efforts or in co-operation with other agencies." In 1952 the international convention was held June 25-28 in Mexico City, Mex. Lions clubs were established in six additional countries, making a total of 37 countries. A seven-story building in Chicago, Ill., was purchased for use as headquarters. Membership in 1952 was 455,000. Publication: *The Lion*, monthly. Officers (1952) included Edgar M. Elbert, Maywood, Ill., president; R. Roy Keaton, Chicago, Ill., director general. Headquarters: 332 S. Michigan Ave., Chicago 4, Ill.

Milbank Memorial Fund.—A membership corporation under the laws of the state of New York, this organization was founded April 3, 1905, to

improve the physical, mental and moral condition of humanity and generally to advance charitable and benevolent objects. In 1950 the fund appropriated \$478,281 to support activities and projects in its field of interest, including \$289,800 for grants and fellowships to outside agencies. Total funds (Dec. 31, 1952) amounted to \$11,678,705. Publication: *Milbank Memorial fund Quarterly*. Officers (1952): Samuel R. Milbank, president; Frank G. Boudreau, executive director. Headquarters: 40 Wall St., New York 5, N.Y.

Music Library Association.—Founded in 1931, this association seeks to promote the establishment and growth of music libraries and collections in the U.S. In 1952 its membership was 900. The association met with the American Library association in New York, N.Y., June 30–July 1, 1952. Publications: *Notes and Supplement*, both quarterly, and *Cumulated Index of Record Reviews* (2 vol.). Officers (1952) included Harold Spivacke, president; George R. Henderson, secretary. Headquarters: Music Division, Library of Congress, Washington 25, D.C.

National Academy of Sciences.—Founded in 1863, by act of congress, the academy's purpose is to advise the government on any subject of science or technology; stimulate research in science and its application to national welfare; and promote co-operation in research in the U.S. and internationally. During 1952 it administered research fellowships supported by philanthropic foundations and industry, advised government departments and maintained a large number of committees of civilian scientists for joint study of specific problems. Membership in 1952 was 558; there were 225 members of the National Research Council (founded 1916) and about 3,000 members of committees. Publications: *Proceedings of the National Academy of Sciences*; *News Report*; periodicals; numbered series of technical publications reviewing research. It is endowed by the Carnegie Corporation of New York. Detlev W. Bronk was president of the academy in 1952, and William W. Rubey was chairman of the National Research Council. Headquarters: 2101 Constitution Ave. N.W., Washington 25, D.C.

National Association for the Advancement of Colored People.—Founded in 1909, this organization directed its 1952 activities chiefly toward increasing registration and voting among Negro citizens and toward abolishing segregation in public schools. Membership in 1952 was approximately 250,000. Publication: *Crisis* magazine. Officers (1952): Arthur B. Spingarn, president; Walter White, executive secretary. Headquarters: 20 W. 40th St., New York 18, N.Y.

National Association of Manufacturers.—The N.A.M. was founded in 1895 to promote the industrial interests of the U.S., foster domestic and foreign commerce, improve employer-employee relations, protect individual liberty and the rights of employer and employee and support legislation in furtherance of those principles. Its activities in 1952 were exercised through 13 committees. Membership in 1952 was approximately 17,700. Publications: *The Magazine of American Affairs* (monthly); *The Washington Bulletin* (weekly); *Annual Report*; *NAM Law Digest* (quarterly); and others. Officers (1952) included: William J. Grede, president; Earl Bunting, managing director; Noel Sargent, secretary. Headquarters: 14 W. 49th St., New York 20, N.Y.

National Association of State Libraries.—This association was founded in 1889 "to provide active co-operation among state libraries and to facilitate the exchange of state laws, court reports and public documents." Its 1951 membership included 46 state libraries. Its national convention was held in New York city in July 1952. Publications include check lists of collected public documents, legislative journals, session laws and statutes. Officers (1952): Grace Sherwood, Rhode Island State library, president; Helene Rogers, Springfield, Ill., secretary-treasurer. Headquarters: Springfield, Ill.

National Education Association of the United States.—This organization was founded in 1857 "to elevate the character and advance the interests of the teaching profession and to promote the cause of education throuth the country." At its 1952 convention in Detroit, Mich., the association adopted a revised code of ethics and approved a proposal to establish a National Council on Accreditation of Teacher Education. As of May 31, 1952, the membership was 490,968; membership of affiliated state associations was 953,115. Publications include *NEA Journal and Research Bulletin*. Officers (1952–53): Sarah C. Caldwell, president; William G. Carr, executive secretary. Headquarters: 1201 16th St. N.W., Washington 6, D.C.

National Science Foundation.—The National Science foundation is an independent agency of the federal government, established by congress in May 1950 "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." The foundation consists of the National Science board and a director. Its principal activities are the development of national science policy; the support of basic research in the mathematical, physical, medical, biological, engineering and other sciences; and the furtherance of education in the sciences through the award of graduate fellowships and by other means. Chester I. Barnard was chairman of the board in 1952 and Alan T. Waterman was director.

During 1952 the foundation awarded 96 grants, or a total of \$1,070,975, in the biological, mathematical, medical, physical and engineering sciences at 59 institutions in 33 states, the District of Columbia and Hawaii. Nearly 75% of the awards made by the foundation went to institutions that had had the least support from other federal research programs. In April 1952, 624 graduate fellowships were awarded for the academic year 1952–53. There were 569 predoctoral awards and 55 postdoctoral awards. The foundation provided financial assistance to 23 U.S. scientists to enable them to attend scientific meetings abroad. Headquarters: 2144 California St., N.W., Washington, D.C.

National Temperance League, Inc.—This federation of state temperance organizations was formed by the merger in 1950 of the Temperance League of America (formerly the Anti-Saloon League of America) and the National Temperance Movement, Inc. Its purpose is to promote abstinence and to diminish and ultimately eliminate the traffic in alcoholic beverages. The official publication is the *American Issue*. Officers (1952) included:

president, Duke K. McCall; secretary, James R. Swedenburg. Headquarters: 131 Independence Ave. S.E., Washington 3, D.C.

Parents and Teachers, National Congress of.—This organization, founded in 1897 as the National Congress of Mothers, had in 1952 a membership of 7,219,165 parents, teachers and other citizens organized in about 38,000 local associations. Its purpose is to promote the welfare of children; raise the standards of home life; secure laws for care and protection of children and youth; bring the home and school into closer relationship; and develop plans for joint action along these lines by educators and the general public. Activities in 1952 included participation in joint meetings with the American Association of School Administrators and other organizations and completion of a study course series for parents, "Building Healthy Personalities," in the *National Parent Teacher: The P.T.A. Magazine*. Other publications include the *National Congress Bulletin*; *Proceedings*, published annually; and *A Reading Guide for Parents*. Officers (1952): Mrs. Newton P. Leonard, national president; Mrs. Russell C. Bickel, national secretary. National headquarters: 600 S. Michigan Blvd., Chicago 5, Ill.

Research Libraries, Association of.—Founded in 1931, this association of 45 institutions seeks by co-operative effort to develop and increase the resources and usefulness of the research collections in American libraries. In 1952 it was active in extending the Farmington plan to procure research materials from abroad for U.S. libraries, and in relaxing restrictions on the use of manuscript material and the interlibrary loan of microfilm. Publications include *Doctoral Dissertations Accepted by American Universities*. R. A. Miller was executive secretary in 1952, and headquarters were at the Indiana University Library, Bloomington, Ind.

Rockefeller Foundation.—Founded in 1913 "to promote the well-being of mankind throughout the world," the foundation during 1952 made grants to institutions or agencies such as universities, research institutes or governmental agencies. Its program for the advancement and application of knowledge to human interest was concentrated in certain specific fields of the natural sciences and agriculture, social sciences, humanities and public health. The 21 trustees are the 21 members of the corporation. Assets, Dec. 31, 1951, totalled \$139,495,406. Officers (1952): Dean Rusk, president (from July 1, 1952); Edward Robinson, treasurer; Flora M. Rhind, secretary. Headquarters: 49 W. 49th St., New York 20, N.Y.

Rotary International.—Founded Feb. 23, 1905, this organization sponsors a program to encourage and foster the "ideal of service." By 1952, 394 Rotary fellowships for graduate study for one year in foreign countries, ranging from \$1,800 to \$3,400, had been awarded to students from 48 countries. There were 7,600 Rotary clubs with a membership of 362,000 business and professional executives in 83 countries and regions. The 1953 convention was to be held at Paris, Fr., May 24–28. Publications: the *Rotarian* (English) and *Revista Rotaria* (Spanish), monthly magazine; *Proceedings* of 43rd annual convention; and pamphlets. Officers (1952) included: H. J. Brunner, president; Philip Lovejoy, secretary. Headquarters: 35 E. Wacker Dr., Chicago, Ill.

Russell Sage Foundation.—This foundation was established in 1907 by Mrs. Russell Sage for "the improvement of social and living conditions in the U.S." Its 1952 program consisted of varied research and consultation projects, designed to advance the use of the social sciences in the fields of health, education, philanthropy, professions and professional training, the child and the family and intergroup and cultural relations. Publications of 1952 included *Corporation Giving*, by F. Emerson Andrews, and *Social Science and Psychotherapy for Children*, by Otto Pollak. Assets of the foundation, 1951–52, were \$16,260,000. Officers (1952): Eli Whitney Debevoise, president; Donald Young, general director; Dave H. Morris, Jr., treasurer; Ralph G. Hurlin, secretary. Headquarters: 505 Park Ave., New York 22, N.Y.

Seeing Eye, Inc.—A national philanthropy founded in 1929 and supported through annual memberships, public contributions and bequests. The society's purposes include securing and training dogs to guide blind persons, teaching instructors the technique of training the guide dogs and training the blind in the proper use of their guide dogs. During 1952, 180 blind persons were provided with dog guides. Membership was about 20,000; more than 2,000 people had received Seeing Eye dogs since the organization's inception. Publications: *The Seeing Eye Guide*, published quarterly for the members of The Seeing Eye, and printed booklets. Officers (1952): Henry A. Colgate, president; James Carey, treasurer; George Werntz, Jr., secretary. Headquarters: Morristown, N.J.

Sloan Foundation, Inc., Alfred P.—Founded in 1934, the foundation has as its primary purpose the increase and spread of economic knowledge although it also has developed interest in the medical field, particularly in cancer research. Economic activities include grants to research organizations and institutions of higher learning and grants for the production and distribution of television and radio programs, motion pictures, pamphlets and related material in the field of economics. Two of its major grants were one of \$5,602,500 for the establishment of the Sloan-Kettering Institute for Cancer Research of the Memorial Cancer centre in New York city and a grant of \$5,250,000 for the establishment of the School of Industrial Management at the Massachusetts Institute of Technology. In 1952 its funds totalled \$33,836,724. Officers (1952): Alfred P. Sloan, Jr., president; Raymond P. Sloan, vice-president; James F. Kenney, secretary and treasurer; Arnold J. Zurcher, vice-president and executive director. Headquarters: 30 Rockefeller Plaza, New York 20, N.Y.

Sodality of Our Lady.—This international Catholic body was founded in 1563 to foster devotion to Mary, the Mother of God. During 1952 ten weeks of intensive leadership training were given in ten cities of the U.S. A total of 8,883 persons attended. U.S. membership in 1952 comprised 17,169 affiliated units with from 6 to 2,000 members in each. Publications include *The Queen's Work*, *Action Now*, *Junior Sodalist* and books and pamphlets. Officers included a number of priests of the Jesuit order. Headquarters: 3115 S. Grand Blvd., St. Louis 18, Mo.

Twentieth Century Fund.—Founded in 1919 by Edward A. Filene, this is a nonprofit, nonpartisan foundation for research and public education on current economic problems. In 1952 the fund had in the process of pub-

lication studies on the federal debt; world population and production; employment and wages in the U.S.; and farm policies of the U.S., 1790-1950. A sound film on labour-management co-operation entitled *Working Together* was released. Other projects included studies of national and international economic problems such as agricultural policies in the U.S.; antitrust policies and enforcement; urban redevelopment; international monetary policy; U.S. imports; economic, political and social forces influencing the process of industrialization, etc. Total assets, Dec. 31, 1951: \$9,879,497. Officers (1952): A. A. Berle, Jr., chairman of the board; Francis Biddle, chairman, executive committee; Evans Clark, executive director; J. Frederic Dewhurst, economist. Headquarters: 330 W. 42nd St., New York 36, N.Y.

United States Junior Chamber of Commerce.—The purpose of this organization, founded in Oct. 1915, is to help make every community (and the country) a better place in which to live through the promotion of constructive civic projects, and to help develop civic leadership. In 1952 the chamber sponsored projects in such fields as agriculture and conservation, public health and safety and trade promotion. Membership in 1952 was 150,000. Publications: *Future and Action*, both monthly. Officers (1952): Horace E. Henderson, president; John Thomas, Jr., treasurer. Headquarters: 21st and Main Sts., Tulsa, Okla.

Woman's Christian Temperance Union, National.—The W.C.T.U., founded in 1874 "is an organization of Christian women banded together for the protection of the home" and "the abolition of the liquor traffic." Membership in 1952 was about 400,000; publications include the *Union Signal* (weekly) and the *Young Crusader* (monthly), for children. During 1952 the organization continued its comprehensive educational program, distributing literature and educational films and conducting lectures and summer courses for teachers. Officers (1952): Mrs. D. Leigh Colvin, president; Mrs. H. E. Mielke, corresponding secretary; Mrs. H. F. Powell, treasurer. Headquarters: 1730 Chicago Ave., Evanston, Ill.

Women's Clubs, General Federation of.—Founded in 1890, this organization aims at uniting women's clubs throughout the world to promote education, philanthropy, public welfare, moral values, civics and fine arts. Its 1952 activities included a "Build Freedom with Youth" contest in which 3,000 clubs competed in community improvement projects; promotion of finance forums for women; and an international good will and rehabilitation program which included scholarship awards to foreign students totalling approximately \$25,000. The annual convention was held in Minneapolis, Minn., May 12-17. Membership in 1952 included 810,606 in 14,604 clubs, with a total in affiliated organizations of about 11,000,000 in the U.S. and 34 other countries. Publication: *General Federation Clubwoman* (monthly). Officers (1952): Mrs. Oscar A. Ahlgren, president; Ethel Foster, treasurer; Mrs. E. Lee Ozbirn, recording secretary. Headquarters: 1734 N St. N.W., Washington 6, D.C.

Young Men's Christian Association.—Founded in London, Eng., in 1844, this is a world-wide fellowship seeking to improve the spiritual, social, recreational and physical lives of young people. During 1951 (latest data available in 1952) there were 1,726 Y.M.C.A.s operating in cities and rural areas, with memberships of 2,700,837. More than 144,900 clubs, classes, teams, special-interest groups and councils met regularly with programs emphasizing physical, educational, social and religious features, plus emphasis on citizenship and world affairs. Among high school youth, 9,860 Hi-Y clubs for boys and 3,417 Tri-Hi-Y clubs for girls were functioning. Publications included *National Council Bulletin* and *YMCA Year Book* for 1952. Endowments totalled \$49,598,600. Officers (1952): William J. Grede, president; Eugene E. Barnett, general secretary. Headquarters: 291 Broadway, New York 7, N.Y.

Young Women's Christian Association of the United States of America.—This organization was founded in England in 1855 and in the U.S. in 1858 to build a fellowship of women and girls devoted to the pursuit of Christian ideals in personal and social living. During 1952, 3,000,000 women and girls participated in its activities, which engage women from high school age on. Publications: *The Bookshelf* and *YWCA Magazine*. Officers (1952): Mrs. Edward W. Macy, president; Mrs. F. Beardsley Foster, Jr., treasurer; Mrs. Harrison S. Elliott, general secretary. Headquarters: 600 Lexington Ave., New York 22, N.Y.

Zionist Organization of America.—Founded in 1897, this organization's purpose is to provide assistance to the people of Israel and advance the Jewish cultural renaissance everywhere. During 1952 it sponsored Israel's bond campaign in the U.S.; established five trade schools in Israel and sent food and machinery there; awarded Israeli scholarships; and inaugurated a Hebrew language campaign. Membership in 1952 totalled 175,000. Publications: *The American Zionist*; *The Zionist Quarterly*; *Dos Yiddische Folk*; and *Inside Israel*. Officers (1952): Rabbi Irving Miller, president; Sidney Marks, secretary. Headquarters: 41 E. 42nd St., New York 17, N.Y.

Zonta International.—A service organization of executive women in business and the professions, founded in 1919, this organization encourages high ethical business and professional standards, the improvement of the legal, political, economic and professional status of women, and international understanding through a world fellowship of executive women. Activities in 1952 included the award of \$1,000 scholarships to young women for graduate study in aeronautical engineering in honour of Amelia Earhart and the establishment of girls' clubs and youth centres. Membership in 1952 included about 250 clubs with approximately 9,000 members in the U.S. and 13 other countries. Publications: *Zontian* magazine and pamphlets. Officers (1952-54): Edwina B. Hogadone, Rochester, N.Y., president; Ellen Fireoved, Chicago, Ill., executive secretary. Headquarters: 59 E. Van Buren St., Chicago 5, Ill.

Sociology. During the year 1952 the often-noted trend toward a merger of the social sciences continued, but with new fluctuations, some of them seemingly furthering the merger, and some retarding it. Trend and fluctuations were

most plainly apparent in the United States, where sociology, in particular, was more strongly represented in amount of personnel and publication than anywhere else.

The numerous foundations—Ford, Russell Sage, etc.—had much to do with the fluctuations, notably the stress on the "behavioural sciences." These, comprising sociology, social anthropology and social psychology, received much attention. Social sciences not of "behavioural" type, such as political science, human geography and history, were not so directly favoured—although by no means neglected. It was still too soon to say whether foundation policies were producing scientifically beneficial results, but the policies had already produced, clearly enough, another crop of would-be beneficiaries, all speaking the same language and making the same invocations. Fragments of an earlier language still survived, as witnessed by the continuing currency of "interdisciplinary," "cross-cultural," and so on, but had begun to sound slightly outmoded. British reviewers of "behavioural science" articles and books published in the United States were quick to note these facts, and to comment appropriately.

Efforts directed toward providing a sound basis in general theory for actual or potential merger continued, although without large-scale foundation support. This could hardly have been otherwise, for successful work in abstract theory is difficult to plan, to say the least. There was, however, one planned theoretical enterprise that made its effects felt in 1952; it took the form of a symposium by a Harvard group, *Toward a General Theory of Action*, edited by Talcott Parsons and Edward A. Shils. The most important part of it was the monograph by the editors appearing as the introduction; this was primarily a stimulating treatment of motivation. At about the same time as the symposium was published, Parsons brought out his *The Social System*. This one-man undertaking seemed to embody many of the merits of the symposium without its more serious defects. Notable among the merits was the somewhat boring but necessary "spelling out" of personality system, social system and cultural system as analytically distinct although empirically intertwined.

One of Parsons' predecessors in the realm of social action theory as such was Florian Znaniecki, and in 1952 he in effect summarized, brought up to date and strikingly advanced his 1918, 1925 and 1936 contributions. Znaniecki's 1952 work in action theory, *Cultural Sciences, Their Origin and Development*, was a landmark of great prominence; it did much to clarify concepts such as culture, social action and definition of the situation or "humanistic coefficient," and to show how they interrelate in sociology as "the grammar of the social sciences."

Basic to the work of Parsons, Znaniecki and many other theoreticians was stress on values. This ranged from the definition of all objects as values, through all social action as involving choice between value alternatives to cultural systems as culminating in value systems. In other words, "stress on values" meant many things and the results were many: efforts at measurement of values on the one hand to unabashed espousal of value judgments as scientifically necessary on the other. Plainly, the slogan of "through values to social interpretation" needed less enthusiastic reiteration and more hardheaded pondering.

Some observers felt that in 1952 there was especially evident, among students and established social scientists alike, a value preference for the study of "social statics" as over against "social dynamics." Attention to social structure and to the functions presumably maintaining it took precedence over interest in social change—except when change was viewed as "dysfunction." The uncertainties of the post-World War II period and particularly the defensive position of most western European and American nations vis-à-vis social changes from which

it was believed that they would suffer disadvantage (at least initially) may have had something to do with this. Instead of a "generation on trial" that had once looked favourably on change, there appeared a "generation on tenterhooks."

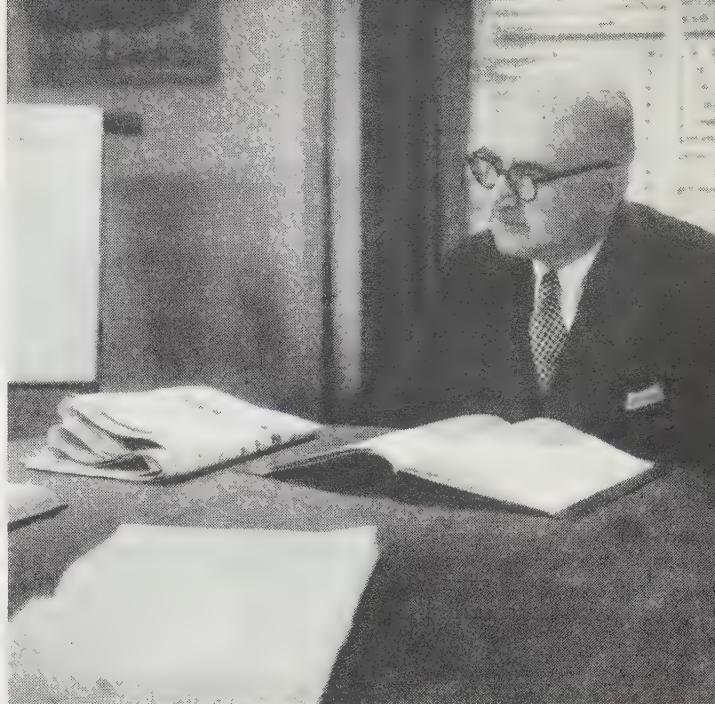
This, if it was a conclusion representing something more than idle speculation, may have been an aspect of that "normative reaction to normlessness" that frequently becomes evident when social change has been so rapid as to be profoundly unsettling. Whether or not connected with this, it may also be noted that the study of power relations and systems of authority, from democracy to totalitarianism, had been popular among all social scientists of recent years, and that sociologists, directly or indirectly, had made some of their most notable contributions here. The vogue of Max Weber, who wrote much on "authoritative rule" (*Herrschaft*), did not wholly explain this, for many important works about authority took little or no account of him, perhaps because his vogue was based primarily on knowledge of his translated writings and those on authoritative rule had not been translated. (Incidentally, an excellent translation of Weber's *Ancient Judaism*, by H. H. Gerth and Don Martindale, appeared in 1952.) At best, Robert K. Merton and others, in scattered articles and collections of readings, dealt with bureaucracy from a standpoint akin to Weber's. There was needed a sustained systematic treatment of political sociology in general, with or without benefit of earlier writers.

In some ways linked with political sociology, social stratification studies continued to be made, and those sponsored by the University of London were definitely new in emphasis and important in results. Stratification analyses had clearly reached a point of diminishing returns, however, if they continued to be preoccupied with middle-class matters in the United States. Their significance had been much exaggerated anyway, largely because of the tendency of newly fledged "research men" to jump on anything that looked like a bandwagon. Much had been put forth as "the very latest" that in actuality was very old indeed, as was convincingly shown by W. C. Lehmann's article in the *British Journal of Sociology* on the work of John Millar in the 18th century, "On the Distinction of Ranks."

Neglect of the history of sociology, characteristic of the generation of graduate students completing their work since 1945, was partly the result of scarcity of convenient handbooks having adequate coverage. Few students could spare the time, or commanded the languages necessary, to read widely in the original sources. The handicap was to some extent overcome by the republication, with 1952 revision and expansion of a work that first appeared in 1938. This, *Social Thought From Lore to Science*, by Howard Becker and H. E. Barnes, dealt with a wide range of social thinkers, ancient and modern, and seemed likely to be of help in lessening the tendency to succumb to current styles in sociological writing and research.

In England, worthwhile trends in sociological research, already manifested at Birmingham, Manchester, Liverpool, Nottingham and similar "red brick universities" continued, as did the valuable work in social anthropology at Oxford and Edinburgh. The same was true of the social psychology intensively applied, albeit with almost psychoanalytic dogmatism, at the Tavistock Institute of Human Relations. One of the most important changes, generally speaking, in the approach to sociological research seemed to be the at least partial emancipation from the traditional social survey. A number of urban neighbourhood studies, such as those at Banbury and Coventry, granted large place to intensive analyses of social relations in contrast to the customary survey focus on large numbers, sampling and problems of planning.

Where the continent was concerned, the most noteworthy developments in 1952 were those in Germany. Western Germany



HAROLD D. LASSWELL, of the Yale school of law, New Haven, Conn., in a scene from *The Social Process*, an educational film for sociology students released in 1952 by Encyclopædia Britannica Films Inc.

continued its advance: rural and urban sociology, in particular, moved rapidly ahead. There seemed every likelihood, when publication facilities once more became adequate, of contributions so substantial that they would make a distinct impress on research being done elsewhere. Eastern Germany afforded an interesting contrast. Chairs of sociology, where they existed, were abolished; instead, "social science" instruction was installed. This was grounded, by decree, on "diamat" (dialectical materialism), and virtually all the newer social science instructional staff members not only imparted "diamat" in unmixed form but were also adherents of the S.E.D. (equivalent of the Communist party) and products of its training system. Here and there survivors of an earlier and less dogmatic although Marxist point of view continued to lecture, but were being steadily shouldered aside or replaced by exponents of "diamat" whose orthodoxy could not be called in question. Publication took merely polemic form; few or no basic researches, given the taboo on "objectivity" and "cosmopolitanism," could be carried out even if there had been any researchers so inclined. Here eastern Germany provided an interesting comparison with the Soviet Union itself; there was, understandably enough, even less freedom in the satellite than in the dominating country. In the latter some work in social anthropology was being done that permitted the "diamat" to be easily combed out, as it were; what remained was utilizable even by the despised bourgeois researcher concerned only with objective truth.

(H. BEC.)

Sodality of Our Lady: see SOCIETIES AND ASSOCIATIONS, U.S.

Softball. During 1952 the Briggs Beautyware nine of Detroit, Mich., won the world series of the Amateur Softball association for the third time when it swept through six games undefeated in the 20th championship tournament at Bridgeport, Conn. The Detroiters clinched the crown by topping the American Industrial Corporation Flyers of Miami, Fla., 2-1, in the final round. The contest was decided in the fourth inning. Dave Sayyae beat out an infield hit and tallied on an error on Roy Palmeri's drive to tie the count at 1-1, and Palmeri counted a moment later on a passed ball. Briggs finished with six victo-

ries and no defeats while Miami, the runner-up, scored five triumphs against two losses. Johnny Spring proved the outstanding star of the tourney in pitching the new champions to five decisions. Ted Czach was the winning pitcher in the other victory recorded by Briggs, which had won world industrial laurels earlier in the campaign.

The women's championship of the A.S.A. was played in Toronto, Ont., and the Orange Lionettes of California captured the title for the third successive season. The Lionettes won six games out of seven, while the Phoenix (Ariz.) Ramblers and the Fresno (Calif.) Rockets tied for second place with five triumphs and two defeats each. (T. V. H.)

Soil Conditioners: see CHEMISTRY.

Soil Erosion and Soil Conservation. **United States.**—The fiscal year July 1, 1951, to June 30, 1952, set an all-time record of accomplishments in planning and applying soil conservation methods and practices. At the end of the year farmers had organized 2,467 conservation districts in the 48 states, Alaska, Hawaii, Puerto Rico and the Virgin Islands. These districts contained 1,358,913,000 ac. In continental United States, more than 4,926,000 farms and ranches, containing 895,451,000 ac. were within district boundaries. The 36 districts of the Caribbean area, Hawaii and Alaska included an additional 59,926 farms composed of 2,689,000 ac.

During the year technicians of the soil conservation service worked with farmers in 2,404 of the districts, an increase of 88 districts over the preceding fiscal year. This wider spread of technical assistance was made possible by a new and speedier type of progressive farm planning devised by the service and supervisors of soil conservation districts. More than 37,000,000 ac. were covered by conservation surveys, an increase of 7%.

Under the new planning system, initial and advanced phases of conservation plans were prepared for 165,844 farms and ranches covering nearly 54,000,000 ac. At the same time, 86,310 basic plans were completed for farms covering nearly 23,000,000 ac. As of June 30, 1952, more than 1,120,000 farmers and ranchers, whose land comprised 322,000,000 ac., were active co-operators in the soil conservation program. More than 410,000,000 ac. of agricultural land had been surveyed for making conservation plans for individual farms and ranches.

Application of soil and water conservation practices to the land of soil conservation districts by farmers assisted by the soil conservation service increased 7%. Cover cropping, applied during the year on 3,296,085 ac., increased 17%. Seeding of nearly 3,000,000 ac. of range and pasture in the districts was an increase of 26% over the preceding year, and construction of 61,578 new farm and ranch ponds was an increase of nearly 63%. Woodland management and tree planting decreased 7%, while wildlife area improvement on farms increased 140% throughout the total area in soil conservation districts.

Group enterprise plans for conservation drainage, irrigation, special erosion control, water control or water spreading were developed to benefit more than 15,000 farms and nearly 1,000,000 ac.

Totals of some of the important soil and water conservation practices applied in soil conservation districts, as of June 30, 1952, are given in the accompanying table.

Flood control operations in connection with the soil conservation program were continued in 11 watersheds where 28 sub-watershed work plans were prepared for nearly 1,400,000 ac. Emergency farm land restoration and stream channel improvement work in the lower Missouri river basin and along other flooded streams was carried on and largely completed, mainly

Extent of Soil Erosion and Soil Conservation Practices, U.S., 1952

Contour farming	28,601,869 ac.
Cover cropping	19,171,931 ac.
Stubble mulching	47,957,022 ac.
Strip cropping	7,370,853 ac.
Range and pasture improvement	77,869,406 ac.
Seeding range and pasture	12,213,204 ac.
Woodland management	18,882,506 ac.
Farm and ranch ponds built	277,122
Tree planting	931,799 ac.
Terraces	858,967 mi.
Water diversions	36,569 mi.
Conservation farm drainage	7,545,646 ac.
Irrigation land preparation	1,836,923 ac.
Conservation irrigation water use	3,770,108 ac.

by contracts prepared under supervision of the soil conservation service.

During the fiscal year 1952, technicians of the soil conservation service assisted about 500,000 farmer participants in the agricultural conservation program of the Production and Marketing administration with the laying out and supervision of permanent-type soil conservation practices.

A significant trend was seen in the emphasis placed on improvement of soil structure, soil fertility and water-holding capacity of soils used for crop and livestock production. Research to determine ways of restoring plant nutrients taken from soils by cropping, leaching, erosion and flooding, or by plowing or overuse of grasslands, was in progress in many parts of the country. With the raising and maintaining of per-acre yields as the primary aim of the nation's agricultural industry, cropping systems including legumes and grasses, much heavier use of fertilizers, lime and manures, cover crops, stubble mulching and other methods of supplying organic matter were stressed in conservation farm planning. On the basis of many scientific experiments and field trials, it was estimated that per-acre yields of most crops, including pasture, could be raised 60% to 75% if the best-known combinations of erosion control and soil fertility methods were used on all farm land in the United States.

Snow surveys, made seasonally in the western states by the soil conservation service to promote conservation of water, were reported effective during the year in preventing floods as well as in providing forecasts of water available for agriculture. Studies showed that where the snow survey information was used to calculate the storage capacity of reservoirs, little or no flood damage occurred, and at the same time the maximum capacity of water was retained for irrigation. In other places where the forecast information was available but not used, or where it was not available, some reservoirs already filled to near capacity overflowed during peak snow melt, causing severe flood damage and erosion.

Europe.—In the effort to devise ways to increase food production, most European countries made plans to adopt certain soil conservation measures to fit their cropping and livestock systems. Surveys of land conditions made since the end of World War II revealed the need for improvement of soil fertility and soil structure and for control of soil erosion on hill lands and in mountain valleys. Stressed in Italy, Portugal and Yugoslavia was the urgent need for remaking both permanent and temporary pastures and for incorporation of grass-legume crops into rotations.

It was emphasized also that many mountain watersheds should be treated without further delay to prevent floods, decrease erosion and improve soil and plant cover conditions to provide forage for livestock.

The Belgian ministry of agriculture adopted a program to assist farmers, through subsidies, demonstrations and education projects, in grassland reseeding and soil fertility improvement. In Denmark plans were made to test new legumes and grasses, including ladino clover and brome grass from the United States, for use in soil fertility improvement programs. In the Federal Republic of Germany, conservation treatment of grasslands and

supplemental irrigation on cropland were considered of primary importance in building up the agricultural economy. Both wind and water erosion were serious problems in some areas of Germany. It was planned to establish one grassland conservationist in each *Land* of Germany, and one in the federal ministry of agriculture, to introduce conservation techniques of pasture improvement and forage utilization.

The land improvement section, established in the ministry of agriculture of France in 1951, started research in relation to soil conservation and water utilization. Control of wind erosion, cropping and rotations to improve soil structure, and methods of loosening subsoil were problems in Austria.

During the summer of 1952, 56 agricultural specialists from 11 European countries participated in a grassland conservation study course conducted by the U.S. department of agriculture and the land-grant colleges in the United States. Particular attention was given to the activities and services rendered by the soil conservation service, the forest service and the Agricultural Conservation program of the Production and Marketing administration.

Asia.—Under direction of the soil conservation department established in Burma in 1950, eight soil conservation demonstrations were set up in the Shan state during 1951–52. Plans had been completed for three more demonstrations, and work had started to apply them to land in areas accessible to farmers for observation.

In the Philippines, additional trained personnel, equipment and facilities for extending both conservation research and operations on farms were made available to the bureau of soil conservation. Soil and water conservation surveys were being made, by provinces, for use in farm planning, and a broad program was being drafted, to cover the entire country, under provisions of the National Soil Conservation act passed by the congress of the Philippines in June 1951.

Land surveys in Pakistan showed that more than one-third of the 10,000,000 ac. of irrigated land in West Punjab was in danger of going out of production because of waterlogging and salinization. A project was started to reclaim 12,000 ac. so seriously affected as to kill crops. Irrigated date palm groves in Saudi Arabia also were found to be heavily impregnated with salts. Reclamation with deep plowing, to break up the impervious layer of soil, followed by flooding to leach out excessive salts, was necessary before conservation use and practices could be applied. A study of Saudi Arabia's ancient water sources was in progress to determine whether they could be restored to provide irrigation water.

A conservation land use program for all Israel was completed early in 1952.

Africa.—In Southern Rhodesia, an exceptionally well-rounded soil and water conservation program was in operation, with excellent co-operation from farmers. Protection of arable land was the main consideration, and by the end of 1951 nearly all of the colony's cultivated land was protected by contour ridges, storm drains, bench terraces, irrigation furrows and pasture furrowing. About 1,000 water storage dams had been constructed. There were about 80 farmers' intensive conservation areas, similar to soil conservation districts in the United States. Most of the actual work of applying conservation to the land had been done by farmers, with technical assistance from the department of conservation and extension.

Another outstanding soil and water conservation program was being carried out in the native African state Basutoland, with a total area of 7,500,000 ac. More than half the sloping cultivated land had been protected by contour grass strips and heavy diversion terraces above fields. Vegetation on 3,000 sq.mi. of denuded mountain grazing land, placed under controlled grazing

in 1940–45, was recovering rapidly. In the lowlands, 280,000 ac. had been stabilized by graded furrows, and 300 earth dams with a total capacity of 400,000,000 gal. of water had been built. Tree planting and soil fertility methods were stressed during 1951–52.

The work in Basutoland began in 1936 on the property of the paramount chief, who later placed responsibility for maintenance in the hands of the ten local chiefs and their officials. The responsibilities were written into the Laws of Leretholi, the laws and customs of Basutoland. Veldt burning was prohibited. Critically eroded areas were closed for cultivation. Plowing up and down slope was made illegal, and grazing areas could not be plowed without permission of the chief. The soil conservation program already had brought remarkable benefits in doubled and tripled per-acre yields of maize and other food crops, and also an inclination on the part of native farmers to form larger compact units and to create a farmer class that eventually might become efficient and permanent on the land. (See also AQUEDUCTS; DAMS; IRRIGATION.) (R. M. S.)

Solar System: see ASTRONOMY.

Solomon Islands: see PACIFIC ISLANDS, BRITISH; TRUST TERRITORIES.

Somaliland, British: see BRITISH EAST AFRICA.

Somaliland, French. This overseas territory of the French union in the Gulf of Aden is bounded north by Eritrea, northwest and southwest by Ethiopia and southeast by British Somaliland. Area: 8,376 sq.mi. Pop. (1951 est.): 55,000, including 21,000 Danakils, 15,700 Somalis, 5,600 Arabs and 2,000 Europeans (1,260 French). Capital, Jibuti (pop., 1949 est., 22,000). Governor, Numa Sadoul.

History.—In Jibuti, as part of the development plan, sanitary improvements, new streets and the construction of a stadium and of buildings for the representative council and for the civil service were begun in 1952.

More salt was sold. The tonnage of goods in transit through Jibuti increased by 10%. The territory's budget showed deficits of 50,000,000 Jibuti francs on foreign account and 792,000,000 Jibuti francs on the French account (military expenditure, civil service, salaries, government investments).

Education.—Pupils and students (1952): primary 1,400; technical 120. Bursaries in France 3.

Finance and Foreign Trade.—(1951) Imports 3,250,000,000 Jibuti fr.; exports 1,241,000,000 Jibuti fr. (coffee re-exported 840,000,000 Jibuti fr.; hides re-exported 127,000,000 Jibuti fr.; salt 55,000,000 Jibuti fr.). Monetary unit: Jibuti franc=1.64 metropolitan francs. U.S. \$1=350 metropolitan francs.

Communications.—(1951) Ships entered 835, cargo handled 612,000 metric tons; 676 metric tons of freight and 5,750 passengers passed through the airport. (Hu. De.)

Somaliland, Italian. This is an Italian trust territory (former colony) in east Africa, bounded southeast by the Indian ocean, west by Kenya and northwest by British Somaliland and Ethiopia. Area: 198,000 sq.mi. Pop. (1951 est.): 1,247,000. Religion: Moslem. Capital, Mogadishu (pop. about 74,000). Administrator, Giovanni Fornari.

History.—During 1952, the second full year of Italian trusteeship designed to turn Somaliland into an independent sovereign state by 1960, the political and administrative structure continued to take shape. The territory's administration was debated at length during the session of the United Nations Trusteeship council in June. Reports by Italy, the U.N. Advisory council and a special U.N. visiting commission, as well as petitions from the inhabitants, provided the material. A lack of harmony in the advisory council itself was revealed and criticism was levelled at the administering authority by "anticolonial" delegations. There was a general realization of the complexity

and difficulty of the task facing the authorities, and in general their activities were endorsed.

The Somaliland Territorial council considered several proposals for administrative reform, but its deliberations were hampered by political differences among the members. The Somali Youth league remained generally antagonistic to the regime but showed some degree of co-operation with it in non-controversial matters. There were outbreaks of intertribal fighting and minor political disturbances, but not on a scale (for Somaliland) to excite particular comment.

The long-standing dispute over the undemarcated Ethiopian-Somaliland boundary, which had been a potent factor in the outbreak of the Italo-Ethiopian war and still provoked border incidents, remained untouched. The urgency of a settlement was emphasized by the Trusteeship council. (See also TRUST TERRITORIES.) (F. E. St.)

Education.—Schools (1951): 68 elementary (6,892 pupils); 11 secondary (550 pupils). School of administration, 37 students.

Finance and Trade.—Budget 1950-51 (in somali): revenue 55,907,454 (including grant-in-aid from Italy, 30,527,324); expenditure 55,907,454. Foreign trade (somali, April 1-Dec. 31, 1950): imports 43,632,289; exports 18,816,107. Principal exports (value in somali, April 1-Dec. 31, 1950): bananas 5,504,447; cotton 2,139,351; hides 4,928,583. Monetary unit: somalo (one somalo = 1s. sterling = 14 cents U.S.).

South Africa, British: see BRITISH SOUTH AFRICAN TERRITORIES.

South Africa, The Union of. A self-governing member of the Commonwealth of Nations, the Union of South Africa extends from the southernmost point of the African continent northward to the Limpopo, Molopo and western Orange rivers. The mandated territory of South-West Africa is administered by South Africa. (See also TRUST TERRITORIES.)

The population of the Union included: European 2,643,187;



Province	Area (sq. mi.)	Population (1951 census*)	Capital (total and European pop.)
Cape of Good Hope	277,113†	4,417,330	Cape town (571,638; 242,493)
Natal	35,284	2,408,433	Pietermaritzburg (74,399; 31,512)
Orange Free State	49,647	1,018,207	Bloemfontein (109,130; 47,856)
Transvaal	110,450	4,802,405	Pretoria (283,148; 149,614)
Total, Union of South Africa	472,494	12,646,375	
South-West Africa	317,725	430,354	Windhoek (1946 census, 14,933; 6,985)

*Revised preliminary figures.

†Including Walvis Bay (430 sq.mi.; pop., 1946 census, 2,270), union territory administered with South-West Africa.

Bantu 8,535,341; coloured (mixed) 1,038,766 (923,914 in Cape Province); Asian 365,524 (299,068 in Natal); Cape Malay 63,557 (56,543 in Cape Province). Pop., South-West Africa: European 49,641; African 380,686; Malay 16; Asian 11. Language: official languages (1946 census, Europeans only), 69% spoke Afrikaans and English, 17% English only, 14% Afrikaans only; Africans, generally Bantu. Religion: (Europeans, 1946 census) Dutch Reformed Church 55%, Anglican 19%, Methodist 6%, Presbyterian 5%, Roman Catholic 5%, Jewish 4%, other 6%; (non-Europeans) 51% Christian.

Capetown is the seat of the legislature, Pretoria that of the government and Bloemfontein that of the supreme court. Other principal towns (total pop. and European pop., 1951 census) are: Johannesburg (880,014; 359,539); Durban (475,026; 148,980); Port Elizabeth (187,071; 78,315); Germiston (149,982; 65,854); East London (90,695; 43,668); Springs (115,880; 31,389). Governor general in 1952: Ernest George Jansen; prime minister and minister of external affairs: Daniel Malan (q.v.).

History.—A prolonged constitutional crisis dominated the South African political scene throughout 1952. On March 20, in the case of *Harris v. Minister of the Interior*, in the appellate division of the supreme court, five judges unanimously held invalid the act passed by parliament in 1951 altering the franchise of Cape coloured voters. The judgment was based on the fact that the act had not been passed by a two-thirds majority of both houses of parliament at a joint sitting, as required by the entrenched clauses of the constitution. These clauses, the court held, had not been affected by constitutional developments since union. This decision came as a blow to the government, which promptly rejected its legal implications. After bitter debates parliament passed a new act designed to avoid the legal consequences of the court's ruling. This act established a "high court of parliament" to review any judgment of the appellate division of the supreme court that declared invalid any part of any act passed since Dec. 11, 1931, when the statute of Westminster took effect. Every member of parliament was made a member of the court. Two months after the parliamentary session, the high court met in secret session at Pretoria, but no member of the opposition parties took part in its proceedings. On the recommendation of its judicial committee, the high court, presided over by the speaker of the house of assembly, set aside the appeal court's decision. In a considered judgment, published later, the high court reviewed and rejected the legal grounds on which the appeal court had based its decision. Meanwhile, steps had been taken by the same litigant, a coloured voter, G. Harris, to contest the validity of the High Court of Parliament act itself. Two days after the high court had announced its decision, a full bench of three judges of the Cape provincial division of the supreme court held that the High Court of Parliament act was itself invalid because it disregarded the entrenched clauses of the constitution and sought to circumvent them. The government then appealed against this decision to the appellate division of the supreme court, whose judgment was awaited late in 1952. The government continued to defend its view that parliament must be supreme, while the opposition maintained that the rule of law as interpreted by the ordinary courts must be upheld.

Both the principal political parties, preparing for the general election in 1953, regarded this issue as an outstanding one. The United party, the Labour party and the Torch Commando (war veterans' political organization) formed a "united democratic front" against the government. In the only by-election during the year, in the rural Transvaal constituency of Wakkerstroom, the government retained the seat with a substantially increased majority. The delimitation commission, at work revising constituency boundaries, announced that the Transvaal would be entitled to two new seats.

In Natal the government's attitude to the constitution evoked heated opposition, part of which even contemplated secession of the province from the Union under certain circumstances.

Race Relations.—The African National congress, under James Moroka, and the South African Indian congress, under Y. M. Dadoo, had resolved in Dec. 1951 to embark jointly on "a campaign to defy unjust laws" unless the government repealed laws involving racial discrimination. The prime minister, D. F. Malan, explained his policies and warned the congresses that any disturbances would be quelled. On April 6 protest demonstrations were held in several centres, coinciding with the Van Riebeeck celebrations marking the tercentenary of white settlement at the Cape. The second phase of the campaign began on June 26, when volunteers invited arrest by breaking various apartheid and pass laws. Within the first three months of the campaign more than 4,000 non-Europeans were arrested and most of them imprisoned. The government took a serious view of this movement of passive resistance and threatened heavier penalties for the resisters. In Johannesburg 20 African and Indian leaders were put on trial under the act to suppress all forms of Communism.

Anti-Communist Measures.—A member of the house of assembly, Sam Kahn, elected in 1948 by Africans in the Cape western area, was expelled after a select committee had decided that he was promoting Communism. A member of the Cape provincial council, Fred Carneson, lost his seat for the same reason. Applying the act to suppress Communism, the minister of justice, Charles Swart, compelled several leading trade unionists to resign their offices, including Emil Sachs, general secretary of the big Garment Workers' union in the Transvaal. Disturbances occurred in Johannesburg, and people were injured through police action, when Sachs was arrested at a public meeting. Sachs was later convicted under the act and sentenced to six months' imprisonment. The government was criticized by trade unions and by the parliamentary opposition for its policies, which were held to restrict the freedom of the unions.

The Industrial Legislation commission issued a comprehensive report on labour laws. It recommended, *inter alia*, a national labour board to co-ordinate wages and conditions of employment and other amendments to existing legislation. It also recommended the strict separation of white and nonwhite workmen in different trade unions. It advised the legal recognition of African unions provided that important safeguards to control their activities were observed. New legislation based on this report was contemplated but no action was taken. The South African Trades and Labour council sponsored publication of a new bilingual weekly, *Saamtrek*, to defend the interests of organized labour.

A weekly newspaper, the *Guardian*, published in Capetown since 1937, was declared to be Communist and banned. However, a new weekly, the *People's World*, was promptly produced under the same auspices.

Economic Position.—The annual budget was presented to parliament in March by N. C. Havenga, minister of finance. In 1952-53 additional revenue was anticipated from increased customs and excise duties on cigarettes, tobacco, beer and mineral



TABLE MOUNTAIN, Capetown, lit up by anti-aircraft searchlights in April 1952, during festivities marking the 300th anniversary of the settlement of white men in South Africa

waters, leaving an estimated surplus of £1,400,000. A special defense equipment account was opened to provide, over the following two years or so, about £40,000,000 for armaments purchased mainly from U.S. sources.

In his annual review of the Union's finances, presented in July, M. H. de Kock, governor of the South African Reserve bank, reported deterioration in the balance of payments and a decline in gold reserves. The Union agreed to assist the sterling area in its financial crisis, if necessary by sacrificing imports from nonsterling areas. It continued to press for a higher world price for gold. An unprecedented level of economic activity was maintained and the net national income continued to rise.

The production of uranium was begun, thanks partly to loans to the gold mines from the British government. There was continued expansion in the production of other base minerals, mainly because of U.S. interest. Large rock-phosphate deposits in the northeastern Transvaal were acquired by the government, which took steps to exploit and develop them.

At the United Nations general assembly in Dec. 1951 South Africa had again been under attack for its policy toward South-West Africa. As a result, T. E. Dönges, minister of the interior, its chief representative at that session, was temporarily withdrawn in protest. Further negotiations, proposed by the assembly, between South Africa, India and Pakistan on the treatment of Indians in the Union did not take place because of failure to reach preliminary agreement on the basis of discussion. (See also LAW.)

(JU. L.)

Education.—State schools (1947): primary 1,190 (European 1,110), pupils 115,368 (European 92,291), teachers 3,927; secondary and high

schools 241, pupils 75,339 (European 65,232), teachers 3,122; mission schools 3,031; training institutions (European 9), pupils 3,790 (European 874), teachers 218. Private schools (1948): kindergarten 89; primary 672; secondary 112; commercial and business 19; others 5; pupils at all private schools 65,089 (European 35,887). Technical colleges (1948) 11, students 46,000, teachers 2,150. Universities (1951) 9; total enrolment of students (1949) 23,977.

Finance and Banking.—Budget: (1951-52 actual) revenue £(S.A.) 226,300,000, expenditure £(S.A.) 270,200,000; (1952-53 est.) revenue £(S.A.) 207,400,000, expenditure £(S.A.) 205,900,000. National debt (June 1952) £(S.A.) 818,600,000. Currency circulation (July 1952) £(S.A.) 83,700,000. Bank deposits (July 1952) £(S.A.) 314,700,000. Gold and foreign exchange (Aug. 1952) U.S. \$333,000,000. Monetary unit: South African pound at par with the pound sterling and with an exchange rate (Nov. 1952) of £(S.A.) 0.357 to the U.S. dollar.

Foreign Trade.—(1951) Imports £(S.A.) 469,100,000, exports £(S.A.) 343,100,000. Main sources of imports (1951): U.K. 35%; U.S. 19%; Canada 4%; Germany 3%. Main destinations of domestic exports: U.K. 24%; France 15%; U.S. 11%; Southern Rhodesia 8%. Main imports: metals, metal manufactures, machinery and vehicles 35%; textiles and clothing 26%; petroleum and products 6%. Main exports (excluding gold and bullion): wool 24%; semiprocessed gold 15%; diamonds 8%; nonferrous metals 5%.

Transport and Communications.—Roads (1950): national 6,000 mi.; provincial main roads 80,715 mi. Licensed motor vehicles (Dec. 1950): cars 466,000, commercial 134,000. Road services (1949-50): passengers conveyed 13,800,000; freight carried 1,754,500 metric tons. Railways (1950): 13,942 mi.; freight ton-miles 11,570,000,000; freight carried 39,600,000 metric tons. Shipping: merchant vessels, 100 gross tons and over (July 1951) 158; total tonnage 160,862. Air transport (1950): passenger miles 125,000,000; cargo net ton-miles 4,200,000. Telephones (1951): 458,851. Radio receiving-set licences (Dec. 1949): 531,300.

Agriculture.—Main crops (metric tons, 1951): maize 1,635,000; wheat 652,000; oats (1950) 115,000; potatoes 240,000; dry beans 32,000; sugar, raw value 482,000; groundnuts 113,000; sunflower seed (1950) 51,000; tobacco (1950-51) 19,700; grapes (1949-50) 430,000; oranges and tangerines 213,000; grapefruit 17,000; lemons 5,000; raisins (1948) 8,700. Wine production (1950-51) 2,670,000 hl. Livestock (Aug. 1949): cattle 12,242,000; sheep (Sept. 1950) 31,361,000; goats 5,529,000; pigs 761,000. Meat production (metric tons, 1951): total 401,000, of which beef and veal 272,000, pork 51,000. Dairy production (metric tons, 1951): butter, factory production 29,900; cheese, factory production 9,600. Wool, clean basis (1951) 50,000 metric tons. Fisheries: total catch (1949) 125,000 metric tons. Fish oil production (1951) 644,400 metric tons.

Industry.—Industrial establishments (1948-49): 14,361; persons employed 670,000 (Europeans 228,000). Fuel and power (1951): coal, sales 26,112,000 metric tons; electricity, sales 11,664,000,000 kw.hr. Raw materials (metric tons, 1951): iron ore, metal content 1,416,000; pig iron 804,000; steel ingots and castings 1,008,000; copper, smelter 33,100 (short tons); chrome ore 600,000; manganese ore 836,000; asbestos 107,000; gold 11,516,000 fine oz.; diamonds 2,228,000 metric carats; silver 1,164,000 fine oz.; osmiridium 6,359 oz. Cement (1951) 1,953,000 metric tons. Leather footwear (1951) 13,276,000 pairs.

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South America: see ARGENTINA; BOLIVIA; BRAZIL; BRITISH GUIANA; CHILE; COLOMBIA; ECUADOR; FRENCH GUIANA; PARAGUAY; PERU; SURINAM; URUGUAY; VENEZUELA.

South Carolina. A south Atlantic state of the United States, eighth of the original 13 to ratify the constitution (1788), South Carolina is known as the "Palmetto state." Area: 31,055 sq.mi. (750 sq.mi. inland water). Population (1950): 2,117,027, an increase of 11.4% over 1940; 61.1% white, 38.9% nonwhite (almost entirely Negro), 63.3% rural. Capital: Columbia. Chief cities (with populations): Columbia (86,914); Charleston (70,174); Greenville (58,161); Spartanburg (36,795); Rock Hill (24,502); Florence (22,513).

History.—In its shortest session since 1942, the legislature passed an automobile drivers financial responsibility law, opened public welfare rolls to public inspection, refused to tamper with the year-old retail sales tax, sustained the governor's veto of a bill to divert to local governments a larger portion of liquor tax proceeds, consolidated three agencies into a wildlife resources commission, and authorized a \$5,000,000 improvement program for the state hospital for the mentally diseased.

The most notable constitutional development of the session was the initiation of an amendment repealing the constitutional requirement of state support of public schools. Ratification would enable the legislature to abandon public schools, as advo-

cated by Governor Byrnes, rather than accept an adverse U.S. supreme court decision in the Clarendon County school segregation case. The court's hearing, scheduled for Dec. 8, was on appeal from a ruling of a three-judge federal court which March 13 reaffirmed its 1951 decision upholding segregation on an equal facility basis.

Civil rights issues also featured political party activity as Governor Byrnes urged the south to withhold support from an "unacceptable" Democratic presidential candidate or platform. The state convention sent delegates to Chicago pledged to Sen. Richard Russell and postponed choice and pledge of electors until results of the national convention appeared. Reassembling after the bitter Chicago controversy, the state convention, with Byrnes's approval, pledged electors to the party nominees. But the governor endorsed efforts of disaffected Democrats to nominate Dwight D. Eisenhower electors by petition, indeed, signed the petition and soon announced that he would vote for the general.

The chief state officials in 1952 were: J. F. Byrnes, governor; G. B. Timmerman, lieutenant governor; C. F. Thornton, secretary of state; T. C. Callison, attorney general; J. B. Bates, treasurer; E. C. Rhodes, comptroller general; J. T. Anderson, superintendent of education.

Education.—The educational expansion program begun in 1951 yielded significant results. By June 30, 1952, more than \$19,000,000 of state aid had been approved for construction, 78% for Negro schools. State expenditures for current expenses increased from \$34,910,817 to \$40,895,047 for white schools; from \$14,392,448 to \$18,212,537 for Negro schools. Total state expenditures were \$80,677,781. Consolidation of school districts reduced the number from 1,220 to 219; the number anticipated for June 30, 1953, was 100. Enrolment in white elementary schools was 198,167, an increase of 4,928; in Negro elementary schools, 187,975, an increase of 443; in white high schools, 86,374, an increase of 1,799; in Negro high schools, 39,683, an increase of 1,939. Total white and Negro teachers numbered, respectively, 10,345 and 7,134.

Social Insurance and Assistance, Public Welfare and Related Programs.—In the year ending June 30, 1952, public expenditures for the relief of needy persons amounted to \$19,124,290, of which \$12,997,176 were federal funds. As of June 30, assistance was being given to 49,247 aged, 1,962 blind, 26,597 children, 5,245 totally and permanently disabled, and 2,121 persons needing general assistance, a total of 85,172 persons. Payments totalling \$7,747,219 were made to unemployed persons during the year; the employment security trust fund was \$59,869,266 on June 30. Patients in the state hospital for mentally diseased, June 30, numbered 5,506; in the school for feeble-minded, 1,339; prisoners in the penitentiary, 1,618; in Negro boys' reformatory, 153; in reformatory for white boys, 210; in Negro girls' reformatory, 28; in reformatory for white girls, 105.

Communications.—State highway mileage, June 30, 1952, was 22,963 of which 14,595 was paved; rural mileage outside of the state system was 26,192. State highway department receipts of \$44,445,295 included \$30,194,160 from the gasoline tax of \$36,654,512; expenditures for construction and operation totalled \$46,233,536. Total railway mileage was 3,372. Company-owned telephones numbered 272,306 on June 30.

Banking and Finance.—On June 30, 1952, there were 25 national banks with 39 branches, 103 state banks with 16 branches and 20 cash depositories. Capital account, deposits and resources, respectively, were: national,

Table I.—Principal Crops of South Carolina

	Indicated 1952	1951	Average, 1941-50
Corn, bu.	18,750,000	26,320,000	26,118,000
Wheat, bu.	4,120,000	3,500,000	2,934,000
Oats, bu.	18,240,000	16,128,000	15,972,000
Barley, bu.	468,000	400,000	492,000
Rye, bu.	84,000	75,000	135,000
Hay, tons	397,000	371,000	441,000
Irish potatoes, bu.	2,030,000	1,937,000	2,295,000
Sweet potatoes, bu.	2,080,000	2,380,000	5,115,000
Tobacco, lb.	172,900,000	175,560,000	128,052,000
Cotton, bales	600,000	871,000	651,000
Peaches, bu.	3,286,000	4,980,000	3,226,000
Pecans, lb.	3,224,000	4,330,000	2,652,000
Peanuts, lb.	8,400,000	11,340,000	18,502,000
Soybeans, bu.	1,224,000	1,038,000	257,000

Source: U.S. Department of Agriculture.

Table II.—Value of Principal Industrial Products of South Carolina

Industry	Year ending June 30, 1952	Year ending June 30, 1951
Textiles (including knitting)	\$1,520,116,753	\$1,608,984,643
Lumber products (barrels, boxes, baskets, veneering, paper and pulp, furniture, woodwork)	170,439,737	174,506,481
Clothing	77,215,752	68,360,432
Electricity	70,168,893	50,233,303
Fertilizers	39,336,069	36,362,721
Textile supplies	37,364,807	28,588,097

Source: South Carolina Department of Labor.

\$28,201,000, \$490,472,000, \$522,808,000; state banks and depositories, \$23,992,674, \$280,620,294, \$305,331,743. Resources of the 34 federal building and loan associations totalled \$133,741,909; of the 41 state associations, \$50,269,079. For the year ended June 30, 1952, the state operated under a general appropriations budget of \$144,499,437 and showed a surplus of \$9,865,843; the general appropriations for the year begun July 1 totalled \$140,674,071. On June 30 the state funded debt was \$76,960,347. Federal internal revenue taxes amounted to \$263,411,838; customs collections, \$2,967,458. The value of imports was \$57,800,000; of exports, \$105,800,000.

Agriculture.—The official Oct. 1 estimate of the total 1952 value of field and commercial truck crops was \$347,336,000 or 12% less than in 1951, when the estimated value was \$396,442,000 and when cash income (including government payments) amounted to \$416,789,000, an all-time record.

Manufacturing.—The value of products manufactured in 2,036 establishments during the year ended June 30, 1952, was \$2,225,713,452, a decrease of \$4,794,468 from the previous year. Employees numbered 185,905, an increase of 2,309. Total manufacturing capital was \$1,047,515,695, an increase of \$180,230,593.

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in South Carolina in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. South Carolina ranked 42nd in value of mineral output, with 0.10% of the U.S. total.

Table III.—Mineral Production of South Carolina

Mineral	1950 (In short tons)		1949	
	Quantity	Value	Quantity	Value
Clays	955,000	\$4,996,000	664,000	\$3,796,000
Sand and gravel	348,000	167,000	287,000	145,000
Stone	2,558,000	3,836,000	2,441,000	3,629,000
Other minerals . . . . .	...	2,395,000	...	1,456,000
Total		\$11,394,000		\$9,026,000

South Dakota. A north-central state of the United States, popularly known as the "Coyote state," South Dakota was admitted to the union in 1889. Area: 77,047 sq.mi., of which 511 sq.mi. are water. Population (est. July 1, 1951) 647,000, a decrease of 5,740 since the 1950 census. In 1950 the state had 23,334 Indians and 727 Negroes; foreign born numbered 29,990 but only .5% of the population 21 and over were aliens. Capital: Pierre (1950 pop., 5,715). Principal cities: Sioux Falls (70,910), Rapid City (25,310) and Aberdeen (21,051).

History.—The state legislature did not meet in 1952, but politics loomed large during the year. In a heated primary campaign, considered nationally as a crucial test of strength prior to the national convention, Robert A. Taft won over Dwight D. Eisenhower by a fraction of 1%. The South Dakota delegation to the Democratic convention won notoriety by walking out of the convention at one point following disagreement with the chairman, Speaker Sam Rayburn.

Drought in all but the southeastern corner was the most important development within the state, following a flood of the Missouri river in the spring, which inundated the state capital, Pierre, and rivalled the great flood of 1881. Earth-fill work was under way for federal dams at Gavins Point and Oahe on the Missouri, while the Ft. Randall dam was nearing completion. Local opposition to the Oahe project as it affected the James river valley resulted in a recommendation of a subcommittee of the Legislative Research council that the 1953 legislature "consider the advisability" of memorializing congress, requesting that all construction funds be withheld from the Oahe-James irrigation project unless the project was shown to be (1) necessary, (2) economically feasible, and (3) desired by the people in the area affected by the project.

State officials (all Republican) finishing out their two-year terms in 1952 included Sigurd Anderson, governor; Rex Terry, lieutenant governor; Ralph A. Dunham, attorney general; Geraldine Ostroot, secretary of state; and Theodore Mehlhaf, treasurer.

Education.—There were 308 high schools maintained in South Dakota in 1952, with 2,153 teachers and 32,373 students, an increase of 3,000 over the previous year. Elementary teachers in city schools numbered 2,338. There were 3,036 common school districts with 2,981 teachers in 2,923 schools. Total expenditures for education were \$30,746,494. Harold S. Freeman was superintendent of public instruction.

Social Insurance and Assistance, Public Welfare and Related Programs.—

During the fiscal year 1951-52 the state department of public welfare distributed \$5,937,815 among 11,983 persons in old-age assistance; \$2,191,387 as aid to 6,069 dependent children; \$62,427 to 152 persons under a new program for the disabled; and \$99,308 for the needs of 213 blind persons. Unemployment benefit payments during 1951 were \$714,610 at an average weekly rate of \$17.58 to a total of 4,434 individuals. The state maintained one prison and one training school on appropriations of \$600,618 for each year of the biennium. There were 445 inmates at the prison.

Communications.—In the fiscal year 1951-52 the state maintained a highway system of 6,193.8 mi., including 3,126 mi. of bituminous surface, 437 mi. of concrete pavement, and 2,630 mi. of gravel surface, at a maintenance cost of \$5,320,045. Disbursements for construction had risen from roughly \$8,000,000 in 1949-50 to \$9,000,000 in 1950-51 and to nearly \$14,000,000 for 1951-52. There were 4,668.2 mi. of railroad in operation as of Dec. 31, 1951, and 157,984 telephones.

Banking and Finance.—At the start of 1952 there were 35 national banks and 21 branch banks in operation. Their total assets were \$294,166,000 and their total deposits were \$276,653,000. The 134 state banks with 4 branches had assets of \$272,407,491 and deposits of \$253,715,797. Eight building and loan associations reported total assets of \$7,173,330.

Total receipts of the state treasury for the fiscal year ending June 30, 1952, were \$73,503,775; disbursements were \$72,802,615. Bonded indebtedness, stemming largely from a veterans' bonus and a disastrous rural credits program of the 1920s totalled \$20,815,000. There was a sinking fund total of \$17,775,531 to meet this indebtedness.

Federal internal revenue collections for fiscal 1951-52 amounted to \$5,996,679, of which \$46,170,146 was attributable entirely to income tax; \$24,224,450 was in payment of combined withholding income tax and social security tax.

Agriculture.—Through August, farm receipts from major sources were slightly above those of the previous year and total cash receipts for the year were expected to be higher. Cash receipts from farm marketings during the first half of 1952 were estimated at \$243,999,000. Government payments in 1951 totalled \$6,473,000.

Industry.—According to the 1947 census of manufactures, there were 494 establishments engaged in manufacturing, paying a total of \$25,796,000 in salaries and wages to 10,265 employees. The total value added by manufacture was \$51,398,000. In June 1952, there were 11,800 employees. Meat products, creamery and poultry products provided the bases for the leading industries. A state-owned cement plant produced 1,020,868 bbl. of finished cement in 1951.

(Ev. W. S.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in South Dakota in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. South Dakota ranks 1st among the states in the production of gold, and stands 35th in the value of mineral output, with 0.28% of the U.S. total.

Table I.—Principal Crops of South Dakota

Crop	Indicated 1952		1951	Average 1941-50
	1952	1951		
Corn, bu.	109,740,000	85,624,000	97,944,000	
Wheat, bu.	30,681,000	57,260,000	41,914,000	
Oats, bu.	95,094,000	116,365,000	89,073,000	
Barley, bu.	9,734,000	19,693,000	31,989,000	
Rye, bu.	3,300,000	6,656,000	5,435,000	
Flaxseed, bu.	4,122,000	4,584,000	4,386,000	
Potatoes, bu.	1,375,000	1,650,000	2,467,000	
Hay, tons	4,118,000	4,517,000	3,079,000	
Soybeans, bu.	1,305,000	870,000	349,000	

Source: U.S. Department of Agriculture.

Table II.—Mineral Production of South Dakota

Mineral	1950 (In short tons, except as noted)		1949	
	Quantity	Value	Quantity	Value
Clays	206,000	\$ 2,208,000	151,000	\$ 1,530,000
Feldspar	49,000	249,000	36,000	157,000
Gold (oz.)	568,000	19,880,000	465,000	16,263,000
Sand and gravel	5,392,000	2,751,000	5,457,000	2,315,000
Silver (oz.)	142,000	128,000	109,000	99,000
Stone	1,206,000	4,861,000	1,024,000	4,473,000
Other minerals . . . . .	...	2,639,000	...	1,886,000
Total		\$32,716,000		\$26,723,000

Southern Rhodesia: see RHODESIA, SOUTHERN.

South Pacific Commission: see PACIFIC ISLANDS, FRENCH.

South-West Africa: see SOUTH AFRICA, THE UNION OF; TRUST TERRITORIES.

Sovereigns, Presidents and Rulers: see PRESIDENTS, SOVEREIGNS AND RULERS.

Soviet Union: see UNION OF SOVIET SOCIALIST REPUBLICS.

Soybeans. The 1952 soybean crop of the United States was indicated at 286,209,000 bu., 2% more than the 280,512,000 bu. of 1951 and exceeded only by the 299,000,000 bu. of 1950. Harvested acreage was 13,906,000, as compared with a government-suggested goal of only 13,000,000. The yield was 20.6 bu. per acre, compared with 21.2 bu. in 1951 and an average of 19.4 bu. for the decade. Illinois was the leading producer (85,701,000 bu.), followed by Iowa (34,525,000 bu.), Missouri (34,240,000 bu.) and Indiana (33,322,000 bu.).

Prices moved sharply and erratically during the year, rising to the ceiling (\$3.33 per bushel at Chicago, Ill.) in midsummer, only to decline with the assurance of the abundant new crop. The price to farmers in September at the beginning of the 1952 harvest was slightly below \$3.00 per bushel compared with a government support price of \$2.56 per bushel (\$2.45 per bushel on the 1951 crop). Operations of processors were somewhat disorganized during part of the year by an unfavourable price ratio between the raw bean and the products: specifically, soybean-oil prices declined to the 9- to 12-cent per pound range, several cents below the previous year, whereas soybean meal was until April at a ceiling of \$74.00 per ton. The Office of Price Stabilization thereafter raised the ceiling price to \$81.00, then in the autumn lifted it still further to \$87.00 per ton. Meanwhile, prior to the autumn, mixtures of the meal with lower priced feedstuffs were widely and legally marketed at prices above the meal ceiling.

World soybean production in 1952, although reliable information was lacking for a major producer, China, and other Communist-controlled areas, was estimated as near the 1950 record-crop of 666,430,000 bu. The 1935-39 average was only 463,720,000 bu.

United States exports of soybeans (and oil in bean equivalent), which reached 79,000,000 bu. from the 1950 crop, was less than 50,000,000 bu. from the 1951 crop and was expected to decline further, not only because of decreased demand in western Europe but also because of increased competition from Manchuria on a quality basis. (J. K. R.)

Spain. A country of southwestern Europe, Spain is bounded north by the Bay of Biscay and France, west by the Atlantic and Portugal, and south and east by the Mediterranean. Area: 194,945 sq.mi., including Balearic (1,936 sq.mi.) and Canary (2,804 sq.mi.) islands. Pop.: (1940 census) 25,877,971; (1950 census) 27,909,009, including Balearic (422,127) and Canary (776,912) islands; (1952 est.) 28,306,000. Language: mainly Spanish (Castilian) but Catalan, Galician and Basque are also spoken. Religion: Roman Catholic. Chief towns (pop., 1950): Madrid (cap., 1,609,524); Barcelona (1,205,509); Valencia (509,075); Seville (375,401); Málaga (261,162); Zaragoza (261,084); Bilbao (229,091); Murcia (201,259); Córdoba (165,256). Leader (*caudillo*), chief of state and prime minister, General Francisco Franco (*q.v.*).

History.—The salient feature of the year 1952 in Spain was the continuation of a general improvement in economic conditions because of the weather. Favourable results of the change first appeared toward the end of 1951 when, after a sequence of disastrous droughts, a period of beneficial rain had brought relief to a predominantly agricultural country and helped its rulers to combat inflation. Abundant harvests had simplified the government's task, for several crops had surpassed all expectation; and with staple foods in adequate supply, as prices dropped to a relatively normal level, the main black markets quickly became extinct.

General Franco's New Year message for 1952 was broadcast directly after the announcement by the acting chief of the Mutual Security agency in Europe that a U.S. special mission would shortly be sent to Madrid with the object of drafting the terms of a military and economic agreement between Spain and the United States along the lines previously explored by Adm. Forrest P. Sherman. Two teams of experts from Washington, under Maj. Gen. James W. Spry and Sidney Sufrin, had already spent several months in Spain surveying the primary requirements of a potential ally whose value to the cause of western defense was warmly advocated by Stanton Griffiths, the U.S. ambassador, until his resignation in January, for reasons of health,



SPANISH ARMY units on parade in Madrid during an official visit of Prince Abdul-Ilah of Iraq (on reviewing stand with General Franco) in May 1952. Earlier in the spring, a Spanish friendship mission made an official tour of Arab countries

from a post which he had not occupied a year. At the end of March his successor, Lincoln MacVeagh, presented his credentials to the *caudillo*, and a fortnight later George Train arrived in Madrid from Mutual Security agency headquarters to join Maj. Gen. August W. Kissner and their respective assistants in discussing the bilateral pact with the Spaniards. By then, however, impatience with the state department's "dilly-dallying attitude" had been vented in the Spanish press and Alberto Martín Artaño, the foreign minister, had left for the middle east as General Franco's personal envoy at the head of a good-will mission to half a dozen Moslem courts. The talks were put off until the diplomat's return.

In January, when the U.S.-Spanish accord seemed imminent, 35 warships of the U.S. 6th fleet had paid a courtesy visit to eight Spanish Mediterranean ports; but thereafter the negotiations dragged on so long that both parties felt obliged at intervals to give assurances of their readiness to reach an understanding.

Spain was excluded from the North Atlantic Treaty organization—and it would refuse to beg admission to it, General Franco proudly declared, because ultimately Spain's fate must depend on the strategic strength of the Iberian bloc as the vital middle link between east and west. In April, with the U.S. callers in his waiting room, the *generalísimo* hastened to confer with António de Oliveira Salazar, the Portuguese premier, at Ciudad Rodrigo. The Spaniards were losing interest in the panacea of U.S. aid, since the remainder of the \$62,500,000 credit that had been granted to Spain two years before was not forthcoming. Their attention was more closely engaged by such domestic realities as the benign meteorological aspect of another mild cycle and the gradual removal of restrictions, which culminated on June 1 in the end of rationing throughout the country, when olive oil and sugar followed liquid fuels and bread on to the free market. In September Spain paid off the balance of a \$50,000,000 debt to holders of International Telephone and Telegraph company bonds that were not due for

redemption until 1960, whereas an adverse legal decision had been given in June against the Barcelona Traction, Light and Power company when its assets were delivered by the receivers in bankruptcy to a newly created Spanish firm.

In April, after rioting had caused six deaths among the native population of Tangier (*q.v.*) on the anniversary of the Franco-Moroccan treaty, Spain lodged a protest with the seven other member states on the control committee and called for revision of the 1945 agreement, which curtailed its share in the administration of the international zone.

On Spanish soil the outstanding event of the year was the celebration at Barcelona in May of the 35th World Eucharistic congress, which drew hundreds of thousands of Roman Catholic pilgrims from all corners of the globe. Cardinal Federico Tedeschini attended the congress as papal legate, and General Franco chose the occasion to visit the city, with his mounted Moorish escort, for the first time since 1949. During his stay in Catalonia he presided at the solemn reburial of the remains of Jaime I and other mediaeval kings of Aragon in the restored monastery at Poblet. Among the principal engineering works and public buildings which the *caudillo* opened in the course of the year were a synthetic oil plant at Puertollano, the Cofrentes hydroelectric power station, dams on the rivers Júcar, Turia, Ebro and Castro, a sanatorium at Santander, a work and health centre in Madrid, the Reus-Tarragona railway, Orense junction, and part of the new line to Galicia.

Education.—Schools: primary (1947-48) 55,111, pupils 2,425,762 (1,212,921 girls), teachers 55,833 (30,030 women); secondary (1948-49) 119, pupils 212,210 (74,319 girls); training colleges for elementary teachers (1948-49), students 24,171 (17,575 women). Universities (1948-49) 12, students 49,980 (6,866 women), professors and lecturers 3,300. Illiteracy (1947): 20.8%.

Finance and Banking.—Budget: (1952-53 est.) revenue 22,208,000,000 pesetas, expenditure 22,477,000,000 pesetas. National debt (Sept. 1951) 58,195,000,000 pesetas. Currency circulation (June 1952) 35,100,000,000 pesetas. Bank deposits (March 1952) 43,600,000,000 pesetas. Gold reserve (June 1952) U.S. \$51,000,000. Monetary unit: peseta with an official exchange rate (Nov. 1952) of 30.66 pesetas to the pound and 10.95 pesetas to the U.S. dollar.

Foreign Trade.—(1951) Imports 1,306,500,000 pesetas, exports 1,523,500,000 pesetas. Main sources of imports (1950): Spanish colonies 24%; U.S. 13%; France 8%; Western Germany 7%. Main destinations of exports: Spanish colonies 24%; U.S. 15%; U.K. 14%; France 6%. Main imports (Jan.-June 1951): machinery, apparatus and vehicles 16.6%; food and drink 15.5%; chemicals and derivatives 10.6%; textiles 12.7%. Main exports: food and drink 54.7%; textiles 11.2%; minerals, earths and stones 8.4%; metals and metal goods, including gold and silver, 5.2%.

Transport and Communications.—Roads (1949): 68,651 mi., of which 51,202 mi. were macadamized. Licensed motor vehicles (Dec. 1950): cars c. 100,000, commercial 65,000. Railways (1950): 11,068 mi., of which 925 mi. were electrified; passenger-miles 4,422,000,000; freight, ton-miles 4,004,000,000; freight carried 25,000,000 metric tons. Shipping (merchant vessels of 100 gross tons and over, July 1951): 1,173; total tonnage 1,219,541. Air transport (1949): aircraft entered Spain 19,426; passengers 234,790; freight 3,576 tons; passengers leaving Spain 249,460; freight 4,070 tons. Telephones (1951): 667,639. Radio receiving sets (1949): 375,635.

Agriculture.—Main crops (metric tons, 1951): wheat 4,150,000; barley 1,800,000; oats 580,000; rye 618,000; maize 650,000; rice, paddy 325,000; sugar, raw value 357,000; potatoes 4,000,000; cotton, ginned (1950) 2,000; tobacco (1950) 15,000; peanuts (1950) 12,000; olives (1950) 860,000; olive oil 600,000; oranges and tangerines 1,071,000; lemons 60,000. Wine production (1950) 15,680,000 hl. Livestock: cattle (Dec. 1948) 4,000,000, horses (Dec. 1949) 600,000, asses (April 1948) 747,000, mules (April 1948) 1,079,000, pigs (April 1948) 2,668,000, sheep (Sept. 1950) 25,954,000, goats (April 1948) 4,222,000, chickens (Sept. 1950) 20,338,000. Meat production (1950) total 432,000 metric tons, of which beef and veal were 135,000 and pork 188,000. Wool production, clean basis (1951) 27,000 metric tons. Fisheries: total catch (1951) 569,500 metric tons.

Industry.—Fuel and power (1951): coal 11,328,000 metric tons; lignite 1,488,000 metric tons; manufactured gas 276,000,000 cu.m.; electricity 7,200,000,000 kw.hr. Raw materials (metric tons, 1951): iron ore, metal content 2,328,000; pig iron 668,400; steel ingots and castings 811,200;

copper, blister 6,400; lead, smelter 41,000; zinc, smelter 21,100. Manufactured goods (metric tons, 1951): cement 2,328,000; cotton yarn 52,300; wool yarn 10,200; rayon filament yarn 10,000; rayon staple fibre 10,100. New dwelling units completed (1951) 15,828. Index of industrial production (1948=100, 1951): 115.

Spanish-American Literature: see LATIN AMERICAN LITERATURE.

Spanish Colonial Empire. Under this heading are grouped the Spanish possessions in Africa. Their total area is approximately 134,715 sq.mi. and the total population (1951 est.) 1,597,000. Areas, popula-

Spanish Colonial Empire					
Country	Area (sq.mi.)	Population (1951 est.)	Capital	Status	Governor
Spanish Morocco					
Northern zone	7,592	1,200,000	Tetuán (pop., 1945, 93,658)	Protectorate	High commissioner: Lieut. Gen. Rafael García Valiño y Marcén Khalif (viceroy of the sultan of Morocco): Muley Hassan Ismael el Mehedi
Southern zone	10,039		Cabo Yubi	Protectorate	
Ifni territory	741	44,000	Ifni	Colony	
Ceuta, Melilla, Alhucemas, Chafarinas and Peñón de Velez	82	141,000	—	Administered as part of Spain	—
Spanish Sahara					
Rio de Oro	73,362	37,000	Villa Cisneros	Colony	—
Saguia el Hamra	32,047				
Spanish Guinea	10,852	175,000	Santa Isabel, on Fernando Po (pop., 1945, 17,000)	Colony	—
including Rio Muni, Fernando Po and four small islands					

tions, capital towns, status and governors of the territories are given in the table.

History.—In marked contrast to the deep political unrest and frequent public disturbances which agitated not only neighbouring colonial territories but the entire Moslem world from Tangier to Tehran, life remained normal in the various Spanish dependencies, where order was preserved without difficulty, throughout 1952. A Spanish Arabic scholar, Emilio García Gómez, and a Moorish general, Mohammed ben Mizzian ben Kassen, were members of the diplomatic mission which in April General Franco dispatched on its travels through the middle east with a broadcast speech, in Arabic and Spanish, that conveyed his most cordial greetings to the peoples of Islam, whose national resurgence, parallel to that of the Hispanic countries, he praised by contrast with "the decrepitude of other races." In answer to inquiries about Spanish policy in Morocco, Alberto Martín Artajo, the foreign minister, who led the mission, was able to imply that Spain desired nothing better than to grant its Moorish subjects their independence but that it was prevented from doing so as yet by its obligation to act in strict accordance with the French.

The Spaniards' overt encouragement of Moorish aspirations was galling to the French authorities, whose suspicions were aroused by the fact that rioting on the anniversary of the sultan's treaty with France was limited exclusively to the international and French zones.

Finance.—Spanish Morocco, budget (1947): balanced at 211,000,000 pesetas. Spanish Guinea, budget (1943): revenue 23,300,000 pesetas, expenditure 23,600,000 pesetas.

Foreign Trade.—All territories (1948): imports 578,400,000 gold pesetas, exports 206,400,000 gold pesetas. Ceuta and Melilla only (1949): imports 123,000,000 gold pesetas, exports 55,000,000 gold pesetas.

Transport and Communications.—Spanish Morocco (1947): roads 1,430 mi.; railways 140 mi. Shipping (1949): vessels entered, 120,000 net registered tons.

Spanish Literature. To the annual prizes, official and other, which figured so largely on the literary scene of 1952, there was added the stimulus of a poetry festival with resuscitated "Floral Games"; initiated in Madrid in March and intended as an annual event thereafter, it was copied in the provinces. Native poetic production, *e.g.*, Eloy Muñoz Martí, *Poesía a campo abierto*, and Alfonso Albalá, *Umbral de armonía*, was overshadowed by the many editions of Spanish-American poets, and *Texto sobre el tiempo* by the

Venezuelan José Ramón Medina and *Salvación del recuerdo* by the Colombian Eduardo Cote alike received awards. Paulina Crusat edited in Castilian translation an *Antología de poetas catalanes contemporáneos*. Arcadio de Larrea Palacín's *Concionero judío del norte de Marruecos*, vol. i., gave musical score as well as transcription of 50 new texts from the inexhaustible mine of traditional balladry. The novel was represented by Luis Romero's *La Noria*, Juan José Mira's *En la noche no hay caminos*, José Antonio Giménez-Arnau's *De pantalón largo* (a study of the psychology of adolescence), Carmen Laforet's *La Isla y los demonios* (her first since *Nada*, 1944) and, notably, Pedro de Lorenzo's *Una Conciencia de alquiler* (planned as the first of a series, *Los Descontentos*); and the short story by Julián Ayesta's *Helena o el mar de verano*. In the drama Jacinto Benavente continued, at 86, to furnish new plays of serious social purpose, notably *El Lebré del cielo*, after Francis Thompson's *Hound of Heaven*, and *Ha llegado don Juan*; José Suárez Carreño's *Condenados*, a rural tragedy in the vein of García Lorca, was this poet's first play; and Horacio Ruiz de la Fuente's *La Novia* was notable for its single character. In *Teatro español, 1950-51*, Federico Carlos Sáinz de Robles prefaced the text of six successful plays with a "criticism of the critics" and of the system of dramatic awards; an appendix listed plays produced in Madrid and the provinces.

Outstanding volumes in the essay—a field in which the national prize for 1951 was not awarded—were Angel Zúñiga's *Palabras del tiempo*, on the contemporary scene, and Guillermo Díaz-Plaja's *Poesía y realidad*. Three new reviews were launched in Madrid: *Poesía española*, *Alcalá* (university) and *Ateneo*. Vol. iii of the continuing *Homenaje* to Ramón Menéndez Pidal contained 30 further studies, while to the vast *Historia de España*, appearing under Pidal's general editorship, was added *España protohistórica*, by Martín Almagro and Antonio García y Bellido. Germán Bleiberg edited the encyclopaedic and authoritative two-volume *Diccionario de historia de España*. With vol. ix of *El Arte tipográfico en España durante el siglo xv* Francisco Vindel y Angulo completed his study of 964 incunabula. The poet Pedro Salinas and Amado Alonso, philologist and literary critic, both died in the United States, where they held university posts. Three comedies by Salinas, *La Cabeza de Medusa*, *La Estratosfera* and *La Isla del tesoro*, were published posthumously in Madrid. (W. C. AN.)

Sparkman, John (1899–), U.S. senator, was born on Dec. 20 near Hartselle, Ala., the son of a tenant farmer. He took his bachelor's degree from the University of Alabama, Tuscaloosa, in 1921 and received his law degree in 1923 and his master's degree in 1924 from the same institution. Admitted to the Alabama bar in 1925, he practised law at Huntsville, Ala., from 1925 to 1930, also teaching at Huntsville college from 1925 to 1928. In 1930-31 he was a U.S. commissioner at Huntsville. In 1936 he was elected to the U.S. house of representatives as a Democrat from the 8th Alabama district, and served in the 75th-79th congresses (1937-47); he was majority whip of the house in 1946. After the death of Sen. John H. Bankhead in 1946, Sparkman was elected to fill the unexpired term in the U.S. senate, and he was re-elected in 1948 for the full term 1949-55. In both house and senate he was a consistent supporter of the New Deal and the Fair Deal. However, his vote against the Fair Labor Standards act of 1938, his original vote for the Taft-Hartley act in 1947 and his firm opposition to civil rights legislation were notable deviations from the party line. On the latter issue in 1948 he opposed the nomination of Harry S. Truman as the Democratic presidential candidate.

Sparkman was a campaign manager for Sen. Richard B. Rus-

sell of Georgia in 1952 prior to the nomination of Adlai E. Stevenson as the Democratic candidate for president. Stevenson selected Sparkman as his running mate, and the latter was nominated for the vice-presidency by the convention at Chicago on July 26, 1952. The Stevenson-Sparkman ticket was defeated by a Republican landslide in the Nov. 4 elections.

Special Libraries Association: see LIBRARIES.

Speleology: see EXPLORATION AND DISCOVERY.

Spirits: see LIQUORS, ALCOHOLIC.

Spitsbergen: see NORWAY.

Sports and Games: see ANGLING; ARCHERY; AUTOMOBILE RACING; BADMINTON; BASEBALL; BASKETBALL; BILLIARDS; BOBSLEDDING; BOWLING; BOXING; CHESS; CONTRACT BRIDGE; CRICKET; CURLING; CYCLING; FENCING; FOOTBALL; GLIDING; GOLF; GYMNASTICS; HANDBALL; HOCKEY, FIELD; HOCKEY, ICE; HORSE RACING; ICE SKATING; LACROSSE; LAWN BOWLING; MOTOR-BOAT RACING; OLYMPIC GAMES; POLO; ROLLER DERBY; ROWING; SHOOTING; SKIING; SOCCER; SOFTBALL; SQUASH RACQUETS; SWIMMING; TABLE TENNIS; TENNIS; TRACK AND FIELD SPORTS; WRESTLING; YACHTING.

Squash Racquets. Harry Conlon of Buffalo, N.Y., a member of the U.S. air force, gained national honours in 1952 by defeating G. Diehl Mateer, Jr., Philadelphia, Pa., in the annual championships at New Haven, Conn. Another five-game final resulted in victory for Harold Kaese, Boston, Mass., who took the veterans' crown by halting Joe Hahn, Detroit, Mich. Germain Glidden and Richard Remsen, New York stars, carried off the national doubles title at Greenwich, Conn., when they defeated James Ethridge, III, and Carl M. Badger, Greenwich. Philadelphia won United States team laurels.

Eddie Reid, Hartford, Conn., annexed the national professional title for the fourth time by halting Al Ramsay, Cleveland, O., at Cleveland. Charles W. Ufford, Jr., of Harvard university, captured the United States intercollegiate championship.

The western tourney at Cincinnati, O., proved a family affair for the Hahn brothers, Ed and Joe, of Detroit. Ed took the singles for the fifth year in a row by beating Harry Conlon. Joe won the senior division final by halting Col. E. N. Powell, Columbia, Mo. The team trophy was taken by Chicago when it defeated Cincinnati, 2-1. Henri Salaun, Hartford, Conn., successfully defended his Canadian crown and Canada annexed the Lapham international team trophy.

Margaret Howe, Boston, Mass., became the women's national champion when she conquered Mrs. Ann Dietrich Wetzel, Philadelphia, at Boston. Mrs. Wetzel teamed with Anne Reilly, Philadelphia, for doubles honours. Mrs. E. I. Beatty, Jr., Philadelphia, won the veterans' laurels. Women's competition was marked by the visit of a team of British stars, the trip being climaxed by the international matches for the Wolfe-Noel Challenge cup at Boston. The United States took the trophy for the first time since 1949, winning by 4-1. Margaret Howe, Mrs. Betty Howe Constable, Jane Austin and Mrs. H. L. G. Clement triumphed for the Americans and Sheila Speight gained the invaders' lone victory. (T. V. H.)

Stalin, Joseph Vissarionovich (1879–), Soviet prime minister, was born at Gori, Georgia, Transcaucasia, on Dec. 21. For his early career, see *Encyclopædia Britannica*. After Lenin's death (Jan. 21, 1924), Stalin's rise to pre-eminence in the party machine and state administration began. His position of dictator of the U.S.S.R. was unquestionable, although he did not hold state office until May 6, 1941, when he assumed the post of premier.

On July 19, 1941, after the German attack, he appointed himself also commander in chief and minister of the armed forces; in March 1943 he assumed the rank of marshal of the Soviet Union. During World War II he met the leaders of the Soviet Union's wartime allies at Tehran (Nov. 1943), Yalta (Feb. 1945) and Potsdam (July 1945). On March 3, 1947, he resigned as minister of the armed forces, retaining the post of premier. From Feb. 9, 1946, when he reviewed Soviet war achievements, Stalin made no public speeches and kept himself in the background. On Feb. 13, 1950, he attended at the Hotel Metropole, Moscow, a banquet given by Mao Tse-tung and this was understood to be the first time Stalin had dined out at a public place since 1923. On Feb. 16, 1951, he prophesied that if Great Britain and the United States rejected Chinese peace proposals "the war in Korea can end only in the defeat of the interventionists." On April 1, 1952, replying by cable to 50 U.S. newspapermen, he expressed the opinion that the possibility of another world war was no nearer than it had been two or three years before. On May 1 he attended the traditional parade in Moscow and on July 27 the Soviet air force display at Tushino. (See also UNION OF SOVIET SOCIALIST REPUBLICS.)

Stamp Collecting: see PHILATELY.

Standards, National Bureau of. Established by act of congress, March 3, 1901, the national bureau of standards has basic responsibilities for research, development, testing, calibration, specifications and scientific services in physics, mathematics, chemistry, metallurgy and engineering. During 1952 it consisted of 17 scientific and technical divisions (electricity, optics and metrology, heat and power, atomic and radiation physics, chemistry, mechanics, organic and fibrous materials, metallurgy, mineral products, building technology, applied mathematics, electronics, radio propagation and 4 divisions concerned with ordnance), 3 offices (basic instrumentation, weights and measures and scientific publications) and 6 administrative divisions (accounting, personnel, administrative services, shops, supply and plant).

Several new laboratories were constructed in Washington, D.C.: a new ordnance laboratory was almost finished at the end of the year (sponsored by the department of the army) and a major addition to the electronic computer laboratory was erected (sponsored by the Atomic Energy commission). The Corona, Calif., laboratories, finished at the end of the preceding year, were in full operation on a variety of ordnance projects (principally for the navy) and special topics in electronics, computers and optics. Construction of a major cryogenic engineering laboratory for the bureau at Boulder, Colo., was completed by the Atomic Energy commission; full-scale operations were attained shortly after the middle of the year. Construction of the \$4,000,000 radio propagation laboratory was begun at Boulder in June, with completion scheduled for early 1954.

The major effort of the bureau was again devoted to military programs sponsored largely by the department of defense. The bulk of this activity was concerned with electronic ordnance of advanced types.

Significant progress was made in the bureau's broad electronic computer program. For a second year SEAC (National Bureau of Standards Eastern Automatic Computer) operated on a round-the-clock basis, seven days a week. SWAC (National Bureau of Standards Western Automatic Computer) at the bureau's Institute for Numerical Analysis in Los Angeles, Calif., was operated on a 40-hour-week basis. A wide variety of problems in physics, chemistry, mathematics and engineering were solved on the bureau's two operating computers. Research and development on computer components included studies of elec-

trostatic and ultrasonic memory storage devices, magnetic-tape input-output mechanisms having rapid access time, and a novel type of magnetic wire drive.

The work in atomic and nuclear physics included studies of radiation protection, development of radiation-detecting instruments, research on semiconductors and in solid state electronics, and development of new techniques in electron physics and mass spectrometry. A new rectifier, made by heating titanium in water vapour at 600° C., showed promise, particularly in its high-temperature characteristics. A new method was devised for measuring atomic masses precisely, based on the time of flight of particles passing through crossed electric and magnetic fields. A semiportable radioactive cobalt source, with related equipment, was developed for use in field calibration of radiation instruments. A 50,000,000-v. betatron was placed in operation, and studies of the properties of the energy were begun. Installation of the 180,000,000-v. synchrotron was completed; research on X-rays in this high range of energies was to begin in 1953.

Several standards of importance to science and technology were developed during the year. Colorimetric specifications for a set of colour standards for the petroleum industry were developed. A spectrophotometric standard for the ultra-violet region was devised. A master 24-sided polygon was constructed for calibration of master angle blocks. The calibration of four 3,000,000-lb. compression dynamometers extended the range of calibration of large testing machines which the bureau could undertake from 2,600,000 to 12,000,000 lb. From about 300 lines and bands, wave lengths for infra-red standards were determined to an accuracy of about 1 part in 250,000.

New instruments and techniques of measurement were devised and used. A new method of sensitometry provided a simple, rapid means of evaluating photographic papers with respect to log-exposure scale and contrast. The discovery that silver can be precipitated in metallic form from ammoniacal silver solutions by hydrogen peroxide made available a long-wanted laboratory method for the purification of silver and its preparation in a finely crystalline state. A method for preparing cobalt-free nickel salts provided for the first time nickel salts suitable as standards for measurement of magnetic susceptibility, for spectrochemical analysis and for developing test methods of nickel salts as reagent chemicals. A method was devised for freeing zirconium of common impurities and for preparing zirconium sulphate and oxide.

The variation in mutual inductance between two coils in proximity to a conducting surface was used as the principle of operation for a number of instruments. A noise-free instrument cable was developed in which spurious electrical signals, arising from mechanical motion of the cable, were reduced by a factor of 500 or more. Hot-wire anemometers for use in turbulence studies at transsonic and supersonic speeds were developed of rhodium-platinum alloys. A limit load gauge was devised which reveals whether structural components of aircraft in service have been stressed beyond safe limits. An ultrahigh centrifuge, capable of producing acceleration of 60,000 g on a 1-lb. weight, was completed; a second centrifuge provided 100 g on 100-lb. devices.

Studies of the properties of matter included the following: Viscosities of gases at temperatures in excess of 2,000° F. at about atmospheric pressure were measured. The relationship between the fatigue strength of basic materials and that of the materials in aircraft structures was made. The problem of salt-water intrusion from a tideless sea into a fresh-water channel flowing seaward, simulating a river mouth, was studied experimentally in the laboratory. Investigations of properties of simple glass-forming systems were extended to include alkali borates. Fundamental data were obtained of certain properties of re-

fractory ceramics with favourable nuclear properties. Experimental ceramics, designed to replace an unavailable grade of mica, were developed for electronic components. The nature of adherence of porcelain enamels to metals was examined.

More than 300,000 calibrations and tests were undertaken for the government and the nation. About 33,000 standard samples were prepared and distributed. Typical activities of this kind included the calibration of about 8,900 gauge blocks, radium determination of approximately 275 ores and sludges, calibration of 29,500 capacity-measuring devices and distribution of 1,300 radioactive standards.

Results of the bureau's work are available through three monthly periodicals (*Journal of Research*, *Technical News Bulletin* and *Basic Radio Propagation Predictions*) and a series of nonperiodical publications. An indexed list of publications (*Publications of the National Bureau of Standards*, circular 460) is available from the superintendent of documents, U.S. government printing office, Washington 25, D.C. (H. OD.)

Stars: see ASTRONOMY.

Stassen, Harold Edward (1907—), U.S. government official, was born on April 13 at West St. Paul, Minn. He received his bachelor's degree from the University of Minnesota, Minneapolis, in 1929, and his law degree there the same year. In 1930 he was elected county attorney, holding the post for eight years, then was elected governor of Minnesota on the Republican ticket in 1938; he was re-elected in 1940 for a second term. In 1943 he resigned the office to join the U.S. navy, where he served as flag officer to Adm. William F. Halsey, Jr.

Stassen was a candidate for the Republican nomination for president in 1944 and again in 1948, but lost on both occasions to Thomas E. Dewey. After the 1948 convention he accepted the presidency of the University of Pennsylvania, Philadelphia. On Nov. 3, 1951, he again won the Minnesota state Republican convention's endorsement for the 1952 presidential nomination. Although he campaigned actively at first for the 1952 nomination, he soon offered to share delegates with Gen. Dwight D. Eisenhower or to release them to the general. At the Republican convention in Chicago in July, it was Stassen's rapid switch of his Minnesota delegation to Eisenhower after the first roll call of states that helped assure the latter's nomination on the first ballot. On Nov. 21, 1952, Eisenhower named Stassen to be the new director of the Mutual Security agency.

State, U.S. Department of: see GOVERNMENT DEPARTMENTS AND BUREAUS, U.S.

State Fairs: see FAIRS AND EXHIBITIONS.

State Guard: see NATIONAL GUARD.

States Rights: see LAW.

Steel: see IRON AND STEEL.

Stellar System: see ASTRONOMY.

Stevenson, Adlai Ewing (1900—), U.S. political figure, was born at Los Angeles, Calif., on Feb. 5. The grandfather for whom he was named served as vice-president under Grover Cleveland. He was educated at Choate school, Wallingford, Conn., and at Princeton university where he was graduated in 1922. He earned his law degree at Harvard and Northwestern universities, interrupting his education to spend a year as assistant managing editor of the *Bloomington Daily Pantagraph* (Ill.), which was owned by his family.

After a brief experience as a newspaper correspondent in Russia and Europe, he practised law in Chicago from 1927 to 1933,

and again from 1935 to 1941. In 1933-34 he served as special counsel in the department of agriculture, and as general counsel for the federal alcohol control administration. From 1941 to 1944 he was special assistant to Frank Knox, then secretary of the navy, handling racial and labour-management relations. Transferring to the state department, he served from 1945 to 1947 in various capacities with the U.S. delegation to the United Nations.

He began his political career in 1948, when he was elected governor of Illinois on the Democratic ticket. His administration was generally regarded as honest, efficient and economical. When speculation of him as a presidential prospect began in 1952, he issued a formal statement at Springfield on Jan. 7, saying that he could run for no office except governor. Although he persisted in this negative attitude, personal and political friends began a preconvention movement on his behalf. He gave them no co-operation, but at the Democratic convention in Chicago on July 25, Stevenson was nominated on the third ballot, with Senator John J. Sparkman of Alabama as his running mate.

During the campaign, Stevenson sensed a general discontent with the administration of Pres. Harry S. Truman, and he made a determined but only partially successful effort to disassociate himself from Truman. He established headquarters at Springfield, and picked personal friends as campaign manager and chairman of the Democratic national committee—Wilson Wyatt of Louisville, Ky., and Stephen A. Mitchell of Chicago, respectively.

Stevenson generally upheld the Roosevelt-Truman record on foreign and domestic questions, insisting that it had protected the peace and produced prosperity. His speeches had a wit, a biblical tone, a literary quality and an intellectual content rarely present in U.S. political oratory. But his unique strategy could not combat the voters' demand for a "change at Washington." On Nov. 4, he carried only 9 states as compared with 39 for Gen. Dwight D. Eisenhower. The electoral vote was 442 to 89, and the popular total was 33,927,549 for Eisenhower and 27,311,316 for Stevenson. (See also ELECTIONS, U.S.; POLITICAL PARTIES, U.S.) (R. TU.)

Stocks and Bonds. U.S. Stocks.—Measured by Standard and Poor's composite index of 90 stocks, as shown in Table I, U.S. common stock prices for the first three quarters of 1952 reached new highs in the bull market which began about the middle of 1949. The 90-stock index for this period showed a sharp increase in January, compared with the previous year end prices. In February a reaction occurred, which wiped out almost 75% of this increase. In June, however, another rise started, which continued through August, at which time stock prices were the highest for the preceding period extending back to 1930. In September the prices were somewhat lower. A broader average of common stock prices, the combined index of Standard and Poor's 480 stocks, shows much the same trend for the first seven months of 1952.

A comparison of the increase in common stock prices in the first nine months of 1952, as represented by the 90-stock price index, with the increase which took place in the corresponding 1951 period, shows that the 1952 increase was smaller when viewed in terms of percentages. The increase in 1951 from January to September was from 168.4 to 186.5, or somewhat more than 10%. The increase in 1952 for the same period was from 192.1 to 196.8, or a little more than 2.4%.

The number of shares traded on the various exchanges in the United States, as reported by the Securities and Exchange commission for the first six months of 1952, was about 22% less than for the same period in 1951. Expressed in terms of money value, the trading on all exchanges during the first half of 1952

Table I.—U.S. Stock Market Prices

	Railroads (20 stocks)		Industrials (50 stocks)		Public Utilities (20 stocks)		Stocks (90 stocks)		Yield (90 stocks)	
	1952	1951	1952	1951	1952	1951	1952	1951	1952	1951
Jan.	64.0	62.3	245.2	213.0	92.1	80.3	192.1	168.4	5.82	6.34
Feb.	63.5	65.3	239.5	221.4	92.9	84.3	188.6	174.7	5.99	6.20
March	66.3	61.1	239.5	217.6	92.6	85.0	189.1	171.8	5.94	6.34
April	67.4	60.9	238.7	221.6	92.8	83.6	188.6	174.0	5.96	6.27
May	67.6	60.1	238.5	222.0	92.8	83.3	188.4	174.1	5.99	6.23
June	70.5	57.6	245.6	218.0	93.3	83.2	193.6	171.1	5.83	6.31
July	71.2	57.2	253.9	222.2	93.7	84.5	199.2	174.2	5.65	6.26
Aug.	71.4	59.8	254.3	232.6	95.6	86.3	200.0	181.8	5.66	5.96
Sept.	69.4	62.4	249.7	238.8	96.0	87.2	196.8	186.5	5.74	5.75
Oct. . . . .	...	62.9	...	237.0	...	87.5	...	185.5	...	5.76
Nov. . . . .	...	59.1	...	230.0	...	87.4	...	180.3	...	6.18
Dec. . . . .	...	61.6	...	237.4	...	89.0	...	185.9	...	5.98

Source: Standard and Poor's Trade and Securities, Current Statistics. Figures are an average for the month, based upon closing prices with 1926 used as base period.

was about 21% less than for the comparable 1951 period. This lower volume of trading continued during the third quarter of 1952, according to available figures showing trading on the New York Stock exchange.

On July 31, 1952, according to a compilation of the New York Stock exchange, there were 2,728,000,000 shares listed on the exchange, with a total market value of \$115,824,600,000 and a flat average price per share of \$48.65. Of the total value of all shares on July 31, United States stocks amounted to \$113,387,200,000 and foreign stocks were \$2,437,400,000. The total number of shares were distributed over 1,493 separate United States issues and 22 foreign issues.

Cash dividends, publicly reported, paid to all stockholders during the first seven months of 1952 totalled \$4,374,000,000. This figure compares with \$4,141,300,000 paid out to all stockholders over the same period in 1951.

As of the end of the third quarter of 1952 the following were considered to be favourable factors of fundamental importance in their effect on equity prices: (1) profits of the railroads and utilities, for the full year 1952, as measured by the rail and utility stocks included in Table I, were expected to be higher than for 1951; and profits for the full year on the 50 industrial stocks in Table I were expected to be not less than 5% under those in 1951; (2) cash dividend payments on stocks in 1952 were expected to be about the same as those in 1951; (3) the federal reserve board's index of production during the fourth quarter of 1952 was expected to exceed the post-World War II high of 223, established in April 1951; and (4) the possibility that the excess profits tax would lapse on its expiration date of June 30, 1953. On the unfavourable side, the following factors should be mentioned: (1) the possibility that defense spending had reached or soon would reach its peak; (2) the possibility of a decrease in expenditures for plant and equipment by business concerns; and (3) the possibility of a further tightening in the money market, thereby curtailing borrowing for business and stock market purposes.

U.S. Bonds.—United States government long-term bond prices, according to Table III, started to rise in Jan. 1952. The rise, which was moderate, continued until May, when prices began to ease. By the end of September most of the rise had been cancelled; and government long-term bonds were selling at prices only slightly higher than those which prevailed in January. Corporate bond prices with A1+ ratings, as shown in Table II, changed very little during the first seven months of 1952. An average of all listed domestic bond prices on the New York Stock exchange for the first seven months of 1952 shows practically no change in their prices.

Table II.—U.S. Corporate Bond Prices and Yields
(Composite bonds A1+; average price in dollars per \$100 bond)

Month	Average		Yield		Month	Average		Yield	
	1952	1951	1952	1951		1952	1951	1952	1951
Jan.	115.5	121.4	2.86	2.61	July	116.0	116.2	2.85	2.92
Feb.	116.5	121.3	2.78	2.62	Aug.	115.8	117.1	2.88	2.87
March	115.9	119.4	2.85	2.73	Sept.	115.1	118.0	2.89	2.81
April	116.2	117.8	2.83	2.82	Oct. . . . .	...	116.9	...	2.88
May	116.3	117.4	2.85	2.85	Nov. . . . .	...	115.3	...	2.98
June	116.1	116.6	2.86	2.90	Dec. . . . .	...	114.8	...	3.01

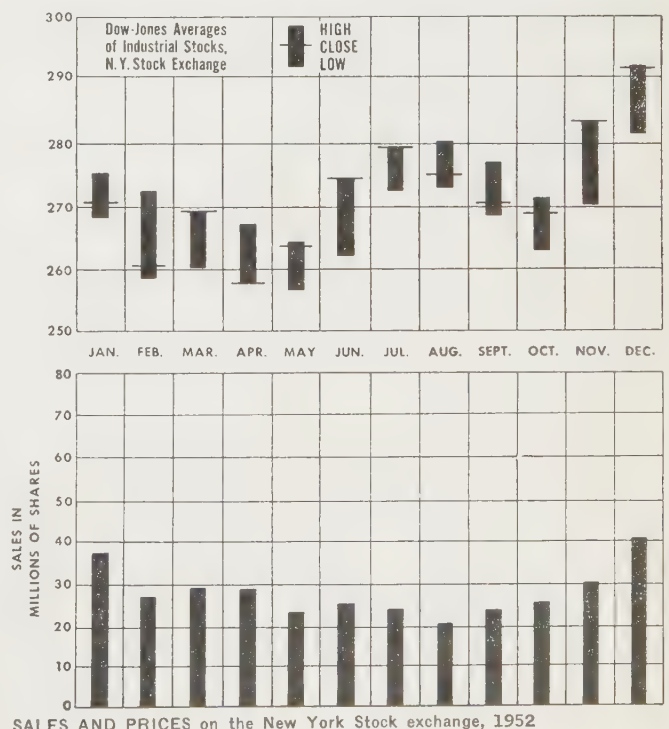
Source: Standard and Poor's Weekly Corporate Bond Price Index.

Sales of bonds expressed in terms of market value (excluding United States government bonds), on all registered exchanges in the United States for the first seven months of 1952 amounted to \$390,340,000 compared with \$445,904,000 of sales for the same period in 1951. Bond sales for the full year 1951 were lower than those for 1950.

According to a compilation by the New York Stock exchange, the total par value of bonds listed on the exchange on July 31, 1952, amounted to \$101,871,449,000, with a market value of \$100,273,061,000. United States corporation bonds on the exchange on the same date amounted to \$18,517,717,000 par value, with a market value of \$17,602,319,000; company bonds of other countries, a par value of \$590,134,000 and a market value of \$508,085,000; United States government bonds (including state and municipal, etc.), a par value of \$80,998,383,000 and a market value of \$80,798,545,000; and foreign governments, a par value of \$1,315,215,000 and a market value of \$930,912,000. The total listed bonds of United States corporations were distributed over 634 issues of 310 issuers; United States government bonds over 62 issues of 3 issuers and foreign government bonds over 185 issues of 51 issuers.

As shown in Tables II and III, yields decreased somewhat for long-term United States government bonds from January to May, 1952. Thereafter they rose to a point approximating the yield in January. The yield for United States corporate A1+ bonds for this period remained very stable.

The spread between the yields of bonds and stocks narrowed in the first seven months of 1952, principally because the yield on stocks went down. The difference was still wide, however, compared with the years prior to World War II. In Jan. 1952 the average yield on A1+ corporate bonds was 2.86% and the average yield on 90 composite common stocks was 5.82%, a difference of 2.96 basis points. In September this difference had decreased to 2.86 basis points.



SALES AND PRICES on the New York Stock exchange, 1952

Table III.—U.S. Government Long-Term Bond Prices and Yields

(Average price in dollars per \$100 bond)									
Month	Average		Yield		Month	Average		Yield	
	1952	1951	1952	1951		1952	1951	1952	1951
Jan.	103.1	107.6	2.74	2.40	July	104.9	104.0	2.60	2.68
Feb.	103.4	107.5	2.72	2.41	Aug.	103.8	104.9	2.69	2.60
March	103.5	106.0	2.71	2.52	Sept.	103.7	105.2	2.70	2.58
April	104.5	105.0	2.64	2.60	Oct.	104.3	...	2.65	...
May	105.3	103.9	2.58	2.68	Nov.	103.8	...	2.69	...
June	104.7	103.8	2.62	2.69	Dec.	103.5	...	2.72	...

Source: Standard and Poor's Weekly Government Bond Price Index.

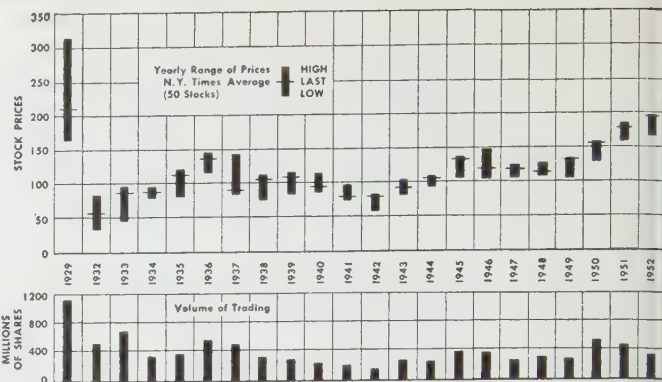
At the end of the third quarter of 1952 the following were considered to be unfavourable factors of fundamental importance in their effect on bond prices: (1) the recent issuance of large amounts of bonds for expansion purposes and the resulting congestion in the bond market; (2) the possibility of the issuance of huge amounts of government long-term bonds for refunding purposes; (3) the higher interest rates in most foreign countries; (4) the belief of many that the period of low interest rates ended in 1946 and that the rise in interest rates since then should be considered a part of a longer period of decreasing bond prices and rising interest rates; and (5) a probable decline in business profits over the next few years. On the favourable side should be mentioned: (1) the expansion of industry and the resulting need for large amounts of credit appeared to be past the peak; (2) consumer demand seemed to be easing, with less credit needed by manufacturers of consumer goods; and (3) high savings should continue to furnish high demand for bonds.

New York Stock Exchange.—Higher costs of operation, including higher taxes and threatened taxes, influenced many actions of the exchange in the first three quarters of 1952. On Jan. 21, the Securities and Exchange commission proposed that charges and fees be levied against those engaged in the selling of securities. The amounts proposed were \$50 for each financial house and \$10 for each officer, partner and employee so engaged. By October these charges had not been put into effect.

On Feb. 2, New York city announced it would ask the legislature for the right to increase the tax on gross financial business from 0.4% to 2%. Later the legislature approved an increase to 0.8%; and this was put into effect.

On June 30, the report on share ownership in the United States was released by the Brookings institution. The exchange helped materially in the promotion of this study. The report revealed that there were 6,490,000 share owners of publicly owned corporations in the United States, of which 1,300,000 became share owners in the last three years and 390,000 during 1951. The report also showed there were 41,510,000 individuals between the ages of 30-49 who owned no shares in any publicly owned corporations.

For the first quarter of 1952 the New York Stock exchange operated at a profit of \$72,776, compared with a profit of \$226,186 in the same quarter of 1951. For the six months ended June 30, 1952, the exchange operated at a profit of \$218,470, as compared with \$388,827 profit for the comparable 1951 period. In large part this reduction in profit was the result of



TRADING IN STOCKS on the New York Stock exchange: yearly range of prices and number of shares sold, exclusive of odd-lot and stopped sales

reduced trading volume, which in the first half of 1952 was 30% below the same period of 1951.

New Issues.—According to the Securities and Exchange commission, new securities offered for cash in the United States for the first seven months of 1952 totalled \$19,147,948,000. This total, divided according to type of issuer, was as follows: corporate issues, \$6,187,828,000 and noncorporate issues (bonds), \$12,960,119,000. This last figure in turn includes U.S. government and federal agency issues of \$10,260,296,000; state and municipal issues, \$2,574,374,000; foreign government issues, \$71,079,000; International Bank issues, \$49,250,000; and non-profit organization issues, \$5,150,000. The total of corporate issues (\$6,187,828,000) may be divided into bonds, \$4,839,817,000; preferred stock, \$417,543,000; and common stock, \$930,468,000. The total of all securities issued for the first seven months of 1952 (\$19,147,948,000) was almost as large as the total of \$21,264,507,000 for the full year 1951, and \$19,892,793,000 for all of 1950. The increase in issues of securities in 1952 as compared with the two preceding years was spread fairly evenly among the various classes mentioned above. (See also SECURITIES AND EXCHANGE COMMISSION.) (C. A. K.)

Great Britain.—The stock exchange was dominated throughout 1952 by a decision which had been taken in Nov. 1951. The newly elected Conservative government then introduced a new monetary policy which made it more difficult and more expensive for companies and individuals to borrow money from the banks. The basic purpose of this policy of making bank credit scarcer and more costly was to discourage unnecessary spending in Great Britain in order that manpower, material and productive capacity engaged in meeting home demands could be diverted in part to the satisfaction of export and defense demands. This general monetary policy was also reinforced by a program of extensive and severe import cuts. It was hoped that this policy would convert the enormous deficit in the country's balance of payments in the last few months of 1951 into a moderate surplus by the end of 1952. It was not until after the middle of the year, however, that it became evident that the policies of the new government were achieving the desired results. An important contributory factor to the general price decline was

Table IV.—Movement of the London Stock Market Indexes in 1952

Month	Government Securities		Price Indexes Industrial Ordinary		Gold Mines		2½% Consols		Industrial Ordinary		Daily Bargains	
	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
Jan.	96.34	95.52	121.5	113.2	100.93	97.48	4.12	4.06	5.87	5.46	9,694	4,699
Feb.	96.14	94.62	114.8	110.3	105.64	97.50	4.16	4.07	6.04	5.79	11,431	2,908
March	95.15	92.73	113.9	105.5	104.23	96.21	4.31	4.13	6.36	5.87	8,751	5,475
April	94.89	93.76	114.1	108.1	96.58	87.54	4.19	4.13	6.20	5.90	8,656	5,978
May	94.91	91.35	113.4	104.7	93.02	87.74	4.43	4.14	6.44	5.94	7,817	5,201
June	92.05	90.22	105.5	103.1	93.65	87.74	4.52	4.37	6.39	6.54	6,801	5,166
July	92.28	90.39	111.0	105.6	97.95	93.58	4.48	4.35	6.37	5.95	7,819	5,164
Aug.	95.19	91.60	117.5	110.6	99.49	96.98	4.40	4.11	6.01	5.65	8,188	5,541
Sept.	95.32	92.90	117.6	113.2	96.54	91.71	4.33	4.14	5.87	5.65	7,437	5,426
Oct.	95.04	93.76	115.2	112.9	93.20	89.02	4.29	4.17	5.89	5.78	7,753	5,722

Constituents and bases of indexes are: government securities, 11 British short-dated, medium-dated and long-dated, base date Oct. 15, 1926; industrial ordinary, 30 leading British equities, base date July 1, 1935; gold mines, 30 South African, West African and Australian, base date Oct. 15, 1926.

Source (for indexes): Financial Times, London.

the budget, presented in March. The chancellor then announced, first, that the bank rate would be raised steeply from $2\frac{1}{2}\%$ to 4% , and secondly, that a severe form of excess profits levy would be applied to company profits with effect from the beginning of the year. Prices of government securities and industrial equities continued to fall away and by the latter part of June had reached their lowest levels for several years.

After midsummer, however, a significant change for the better developed in the stock market. It was becoming apparent that import cuts were at last biting deeply and bringing considerable relief to the country's balance of payments. It was also evident that the improvement in Great Britain's terms of trade—the fall in import prices in relation to export prices—was considerably greater than had been expected. Finally, there were indications of a useful expansion in British invisible overseas earnings from banking, shipping, insurance and other sources. By the end of the summer it was becoming increasingly clear that Great Britain's external accounts had been brought roughly into balance and that there was no longer any immediate danger of a major financial and economic crisis.

As the earlier fall in the prices of government stocks and industrial shares had resulted in the yields on these securities rising to their highest levels for a long period, there was a considerable revival of investment demand, both from institutional investors and from public investors. At the end of June irredeemable government stocks were yielding upward of $4\frac{1}{2}\%$ and high-grade industrial ordinary shares were returning $6\frac{1}{4}\%$ – $6\frac{1}{2}\%$. Consequently throughout July, August and the early part of September there was a strong recovery in both groups of securities. This was checked during the autumn but was resumed again toward the end of the year under the stimulus of the continuing improvement in the country's balance of payments and the substantial additions to the gold and dollar reserves. The market recovery was also helped by signs that some of the depressed consumer goods industries, which had experienced a big reduction in demand late in 1951 and early in 1952, were beginning to enjoy a revival of trade.

For the important groups of shares of primary commodity producing companies, 1952 was a difficult and generally unpleasant year. Most commodities fell heavily in price from the peak points reached after the outbreak of the Korean war and producers of many of these materials found themselves faced with a serious decline in sales revenue and a rigid and intractable cost structure. Nor was 1952 a very brilliant year for holders of gold shares, which drifted lower with only an occasional spasmodic rally. The big increase in the gold price which followed the devaluation of sterling in Sept. 1949 had been very largely swallowed up by rising production costs. (W. W. Rr.)

Stomach and Intestines, Diseases of the.

Measurement of the acid produced by the stomach is an important procedure in the study of gastric diseases. Histamine, the substance used for this purpose, may cause disagreeable reactions. A substitute for histamine, chemically identified as 3-beta amino-ethyl pyrazole, proved to be equally powerful in stimulating the output of acid and yet was tolerated exceedingly well. The search for more effective drugs inhibiting stomach acidity in the treatment of peptic ulcer gained momentum. Prantal, like Banthine, did not appear to be very effective for this purpose when taken by mouth although it decreased the output of acid when given by injection. More potent compounds were synthesized, but none proved suitable for general clinical use. Additional reports emphasized the unfavourable influence of corticotropin (ACTH, adrenocorticotrophic hormone) and cortisone in ulcer patients, stimulating acid secretion and precipi-

tating the complications of haemorrhage or perforation.

The treatment of severe bleeding remained a serious problem. X-ray examination during the period of active haemorrhage improved the accuracy of diagnosis.

Surgery in peptic ulcer is reserved usually for obstruction, haemorrhage, perforation and for ulcers developing after previous operation. Many surgeons preferred the procedure of gastric resection, removing approximately three-fourths of the stomach. Several modifications in the technique of the operation were described. The risk of improved surgery was quite low.

Improved surgical skill and excellent pre- and post-operative care permitted the removal of more tumours of the stomach, with a decreasing immediate mortality rate. Replacement of the excised stomach by a "new stomach" fashioned from the large intestine was possible in some patients. Nevertheless, the early recognition of cancer of the stomach and of tumours elsewhere in the digestive tract remained a difficult problem, seriously limiting the possibility of surgical cure. In the search for gastric cancer, routine photofluorographic gastrointestinal examinations of 10,000 patients yielded only one tumour for every 476 examinations. The comparative infrequency of cancer diagnosis in this survey and the high cost of the study indicated the magnitude of the problem.

Intestines.—A sulfonamide compound, salazopyrin, was reportedly effective in some patients with chronic ulcerative colitis. Corticotropin (ACTH) and cortisone remained useful adjuncts in the treatment of the disease; the fundamental cause was not eliminated, however, and recurrences were frequent. These hormones appeared less helpful in chronic inflammation of the small intestine (regional enteritis). On the other hand, cortisone was effective in the management of nontropical sprue, a disorder characterized by the passage of bulky, fatty stools, severe loss of weight and weakness. Bowel function improved remarkably; the appetite increased and the patients gained weight and strength. The beneficial action of cortisone appeared attributable to more efficient intestinal absorption of fats or to improvement in the general bodily metabolism.

The antibiotic aureomycin was effective in the treatment of diffuse peritonitis. Aureomycin calcium caseinate caused much fewer episodes of nausea and vomiting than ordinary aureomycin. A new antibiotic, neomycin, and the combination of polymyxin with neomycin or bacitracin rapidly suppressed bacterial growth in the intestines.

The dangers of indiscriminate antibiotic therapy became increasingly evident. Many antibiotics inhibit normal bacterial growth in the bowel and permit the rapid multiplication of staphylococci, *Proteus*, *Pseudomonas* and other bacteria, moulds and yeastlike organisms that are not susceptible to the antibiotic being used for the primary disease. Antibiotics also may induce vitamin deficiencies; and they frequently act as direct irritants to the bowel. These various factors probably were responsible for the "antibiotic diarrhoea" occurring in many patients receiving antibiotics. The chief symptoms were abdominal cramps, diarrhoea and fever. The bowel wall occasionally was inflamed, congested and ulcerated. This complication at times was more distressing than the original illness. Superinfections with resistant bacteria and fungi also were observed during the use of antibiotics. A decrease in the numbers of red and white blood cells and the platelets in the blood constituted an even more serious complication, resulting in a few patients in aplastic anaemia and death. These observations again emphasized the need for care in the administration of antibiotics, restricting their application to diseases in which they are of established value, and avoiding their use in minor illnesses for which antibiotics are not necessary.

Several new treatments were developed for intestinal para-

sites. The antibiotics, neomycin and fumagillin, and the combination of bismuth glycolyl arsanilate and chloroquine diphosphate were recommended for amoebic infections of the bowel. Terramycin effectively eradicated pinworms; quinacrine hydrochloride (Atabrine) facilitated the expulsion of tapeworms.

Pancreas.—Increased attention was directed to the pancreas and its diseases, especially chronic recurrent pancreatitis. Severe abdominal pain and jaundice were common symptoms of this inflammatory condition. The use of alcohol not infrequently precipitated the onset of the disease. Banthine appeared to be helpful in the treatment of some patients.

The diagnosis of cancer of the pancreas remained exceedingly difficult. Increased amounts of antithrombin in the blood were noted in the relative early phase of cancer of the pancreas with jaundice, suggesting the possibility of earlier diagnosis.

Pancreatic fibrosis is a serious illness in children, characterized by the passage of many large foul stools, severe malnutrition and cough. Chronic inflammation of the lungs is the most frequent cause of death. Treatment heretofore had been very unsatisfactory. Terramycin or aureomycin proved to be useful adjuncts in the management of this disease.

Liver and Gall-Bladder.—Infectious hepatitis, a viral infection of the liver, commonly produces symptoms of fatigue, poor appetite, distaste for smoking and abdominal pain. The physical findings usually include jaundice and an enlarged tender liver. Prompt recognition of infectious hepatitis requires constant awareness of its possible presence and appropriate tests of liver function.

Three separate epidemics re-emphasized the ease with which infectious hepatitis may be transmitted. One outbreak involved student nurses in an orphanage for infants and young children. The disease was spread by the faecal-oral route. The infective agent was demonstrable in the faeces for periods of 5 to 15 mo. after the initial illness. Another epidemic apparently was transmitted by person-to-person contact and by contaminated drinking water obtained from a well. The third outbreak occurred among a group of soldiers several weeks after the cook preparing their food had contracted the disease; circumstances strongly suggested contaminated food as the source of the infection.

Careful history, physical examination and laboratory tests may not disclose the cause of an enlarged liver or jaundice or both. The correct diagnosis in such patients was facilitated by the microscopic study of a small piece of liver tissue removed by a special needle. In expert hands, the procedure was relatively simple. These observations confirmed earlier studies of the problem. In the treatment of cirrhosis of the liver, emphasis again was directed to the importance of an adequate intake of protein and carbohydrate, fortified with intravenous injection of glucose. Choline or methionine is indicated in acutely ill patients unable to eat sufficient amounts of food. The use of alcohol must be discontinued.

A new radio-opaque material, telepaque, improved the visualization of the gall-bladder by X-ray and caused fewer reactions than previous dyes. The use of telepaque consequently received extensive trial in the diagnosis of gall-bladder disease. (See also MEDICINE.)

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Strawberries: see FRUIT.

Streptomycin: see CHEMOTHERAPY; MEDICINE; TUBERCULOSIS.

Strikes. In 1951 there were 4,737 strikes in the United States, a decrease of 106 from the 1950 total of 4,843. Further, the number of workers involved (2,191,500) and the number of idle man-days (22,910,000) in 1951 were considerably less than in the previous year, as shown in Table I.

The number of strikes in the first six months of 1952 was greater than the number of strikes for the corresponding period in 1951. There was also a great increase in the number of workers involved in strikes in the first six months of 1952 when compared with the same period of the previous year. In the same six-month period of 1952 the number of idle man-days rose to 30,720,000, which was approximately three times the corresponding figure for 1951. This increase in strikes, number of workers involved and idle man-days was the result of the steel strike, which began on June 2, 1952, and ended July 25, 1952.

These statistics published by the U.S. bureau of labour statistics included all known work stoppages arising from labour-management disputes that continued for at least one full day or shift and involved six or more workers. The data on man-days idle and workers involved covered all workers made idle in establishments directly involved in a stoppage and not those em-

Table I.—United States: Number of Strikes Beginning in the Year, Workers Involved and Man-days Lost

Year	Number of strikes	Number workers involved	Man-days idle during year	Per cent of estimated work time
1935-39 (average)	2,862	1,130,000	16,900,000	0.27
1946	4,985	4,600,000	116,000,000	1.43
1947	3,693	2,170,000	34,600,000	.41
1948	3,419	1,960,000	34,100,000	.37
1949	3,606	3,030,000	50,500,000	.59
1950	4,843	2,410,000	38,800,000	.44
1951	4,737	2,191,500	22,910,000	.21
1952 (6 mo.)	2,525	2,085,000	30,720,000	.60

Source: United States Bureau of Labor Statistics, *Monthly Labor Review*. 1952 figures are preliminary.

Table II.—Analysis by Industries of Work Stoppages Arising from Industrial Disputes in Great Britain

Industry	Jan.-July 1952			Jan.-July 1951		
	Number of stoppages beginning in period*	Number of workers involved in all stoppages in progress	Aggregate number of working days lost	Number of stoppages beginning in period	Number of workers involved in all stoppages in progress	Aggregate number of working days lost
Agriculture, forestry, fishing	3	900	4,000	—	—	—
Coal mining	686	112,000†	267,000	620	77,100†	231,000
Other mining and quarrying	5	400	2,000	4	100	‡
Treatment of nonmetallic mineral products	10	500	2,000	9	700	2,000
Chemicals and allied trades	6	1,900	6,000	3	400	2,000
Metal manufacture	23	3,800	24,000	19	2,300	11,000
Shipbuilding and ship repairing	39	10,200	73,000	52	4,200	26,000
Engineering	43	20,500	167,000	54	16,900	68,000
Vehicles	34	37,700	391,000	43	37,400	208,000
Other metal industries	8	2,000	16,000	17	1,700	8,000
Textiles	2	400	‡	8	2,100	8,000
Leather, etc.	1	‡	‡	—	—	—
Clothing	8	600	1,000	6	1,900	1,000
Food, drink, tobacco	9	1,100	8,000	9	5,300	18,000
Manufactures of wood and cork	11	1,500	21,000	6	1,100	4,000
Paper and printing	6	1,500	30,000	3	100	‡
Other manufacturing industries	3	3,000	15,000	6	1,200	4,000
Building and contracting	59	16,600	97,000	62	15,000	57,000
Gas, electricity, water	4	700	7,000	3	2,400	60,000
Transport, etc.	34	8,500	26,000	56	82,200	547,000
Distributive trades	9	3,200	19,000	9	800	2,000
Other services	6	1,100	4,000	20	2,400	6,000
Total	1,005	228,100†	1,180,000	1,009	255,300†	1,263,000

*A stoppage of apprentices which began in March 1952 involved workers in several industries, but was counted as only one stoppage in the total for all industries taken together.

†Some workers, largely in the coal mining industry, were involved in more than one stoppage and are counted more than twice in the totals. The net number of individuals involved in coal mining stoppages was 95,000 in the 1952 period and 65,000 in the corresponding 1951 period. For all industries combined the corresponding net totals were approximately 210,000 and 220,000.

‡Fewer than 500.

§Fewer than 50.

Source: Ministry of Labour Gazette (London).



DESERTED STEEL MILL YARDS in South Chicago, Ill., at the beginning of a strike by about 650,000 U.S. steel workers (C.I.O.) in June 1952

ployees made idle through material or service shortages incurred by such stoppages.

Work stoppages arising from industrial disputes in Great Britain for the first seven months of 1952 and 1951 are indicated in Table II. As in 1950 and 1951, the majority of strikes in the first seven months of 1952 arose in coal mining, with 686 strikes through July 1952—the total number of work stoppages having been 1,005 during this period. The number of workers involved in coal mining strikes and the number of working days lost was also larger for the first seven months of 1952, compared with the same period in 1951. Other industries with a relatively large number of strikes were building and contracting with 59 stoppages, engineering with 43, vehicles with 34, shipbuilding and repairing with 39 and transport with 34. Although the number of strikes in any one of these industries was less than 10% of the number of stoppages in mining for the 1952 period under consideration, the number of working days lost in the vehicles group was 50% greater than the number lost in mining, and the number of working days lost in engineering was about 60% of the number lost in mining.

Wage disputes were the predominant cause of industrial stoppages in Great Britain for the first seven months of 1952. The major share of these wage disputes was not for wage increases, but was concerned with other wage issues. Disputes over the employment of particular classes or persons, and other

Table IV.—Frequency and Size of Labour Disputes in Great Britain: First Seven Months of 1952 and Corresponding Months in 1951

Month	Strikes in progress		Number of working people involved		Number of working days lost	
	1952	1951	1952	1951	1952	1951
January	122	135	26,300	23,700	80,000	77,000
February	156	143	30,600	57,300	75,000	339,000
March	162	156	42,500	36,800	288,000	145,000
April	164	192	36,500	46,000	80,000	152,000
May	201	191	41,500	59,400	176,000	203,000
June	181	193	63,400	86,300	205,000	305,000
July*	125	112	37,800	17,200	277,000	42,000

*Figures for July 1952 are subject to revision.
Source: Ministry of Labour Gazette (London).

working arrangements, were also major causes of work stoppages.

Comparative figures for the first seven months of 1951 and 1952 showed a larger number of strikes in progress in February, March, May and July of 1952. As Table IV indicates, however, the number of working people involved and number of working days lost did not necessarily increase (decrease) when the number of stoppages increased (decreased).

In Canada in the first six months of 1952 there were two fewer strikes and lockouts than for the corresponding period of 1951. However, the number of workers involved in industrial disputes in the 1952 period was more than twice the number involved in the corresponding 1951 period. Further the number of working days lost in the first six months of 1952 was more than

Table III.—Analysis of Principal Causes of Industrial Disputes in Great Britain: First Seven Months of 1952

Principal causes	Number of stoppages begun during 1952	Number of workers directly involved
Wage increase	71	39,500
Other wage disputes	350	49,200
All wage disputes	421	88,700
Hours of labour	34	4,900
Employment of particular classes or persons	149	42,300
Other working arrangements	343	30,400
Trade union principle	21	4,600
Sympathetic action	12	9,600
Total	980	180,500

Source: Ministry of Labour Gazette (London).

Table V.—Number* and Time Loss in Canadian Labour Disputes

Month	No. of strikes	1952†		No. of strikes	1951	
		No. of employees involved	Time loss in working days		No. of employees involved	Time loss in working days
Jan.	15	5,749	75,220	18	6,255	16,988
Feb.	22	13,048	47,603	20	4,944	20,103
March	26	5,204	65,502	29	4,988	16,960
April	35	12,055	178,605	22	3,950	10,199
May	42	22,973	247,733	40	8,038	35,167
June	40	59,364	708,382	53	15,937	128,510
Total	180	118,393	1,323,045	182	44,112	227,927

*These figures show the number of strikes and lockouts in existence and the workers involved during the period. The monthly figures are not cumulative. Strikes and lockouts were recorded together and are a cessation of work involving six or more employees and lasting at least one working day.

†1952 figures are preliminary.
Source: Labour Gazette (Ottawa).

five times the loss in the same period of 1951. (See also LABOUR UNIONS; LAW; NATIONAL LABOR RELATIONS BOARD; UNITED STATES.) (P. TA.)

Subsidies: see AGRICULTURE.

Sudan: see ANGLO-EGYPTIAN SUDAN; FRENCH UNION; FRENCH WEST AFRICA.

Sugar. The consumption of sugar per capita in the United States was estimated as high as 95 lb. in 1952, a little less than in 1951 and less than average.

The 1952 domestic crop of sugar cane for sugar and seed was reduced by dry weather, but the two producing states had above average crops, and that of Louisiana was sharply above the small crop of 1951. Sugar-beet production, much of it under irrigation in the western half of the U.S., was indicated as 10,334,000 tons, compared with 10,485,000 tons in 1951 and 10,013,000-ton average for 1941-50. The indicated average yield of 15.2 tons per acre, the same as in 1951, was 2 tons above average for 1941-50.

Sugar cane for syrup and sorghum cane for molasses were adversely affected by summer drought in their major areas of production and declined below the low levels of recent years. Maple syrup production in 1952, mostly in Vermont and New York, was estimated at 1,603,000 gal. from 7,012,000 trees tapped; 189,000 lb. of sugar were also made. Both products were less abundant than in 1951 and much below the 1941-50 average. Honey in 1952 was an average crop, except in drought areas. Colonies of bees continued to decline as in most years since World War II. The support price was increased to 70% of parity, about 11½ cents per pound for extracted honey.

Consumption of sugar in the U.S. in 1952 was initially estimated in late 1951 and the quota set under the law at 7,700,000 tons, near the lower levels of the fluctuating estimates of 1951 consumption. However, in Oct. 1952 the quota was revised upward by 100,000 tons. Deliveries for the calendar year 1952 through early October amounted to about 6,550,000 tons, a rate which was expected to call for nearly 8,000,000 tons for the year.

The world centrifugal sugar crop of 1951-52 was a record one of about 38,200,000 short tons, raw value, 4% more than in the

previous year and one-third more than pre-World War II. The beet-sugar total, 14,093,000 tons, was moderately less than in the previous year, but above the 11,777,000 tons prewar average. Cane sugar set a new record, 24,102,000 tons, as compared with 21,792,000 tons in the previous year and only 17,101,000 tons prewar. The extra production to make the record possible came largely from Cuba, with 1,600,000 tons more than the year before. The 7,900,000 tons (previous record 6,675,000 tons in 1947-48) resulted from a favourable combination of larger acreage and high yields. Asia also increased production, by about 600,000 tons. Europe, with much of the beet-sugar production, accounted for much of the decrease, primarily because of unfavourable weather and some disease damage to the crop.

In addition there was a production of about 6,228,000 tons of locally used unrefined or semirefined noncentrifugal sugar. This was a large crop, compared with 6,108,000 tons the previous year, and slightly more than 5,000,000 tons prewar.

Preliminary evidence suggested that the 1952-53 world sugar crop might set a new record. The world's sugar beet crop harvested late in 1952 was 100,416,000 tons, compared with 100,920,000 tons in 1951 and 82,071,000 tons prewar. The total acreage planted to sugar beets in 1952 was larger than in 1951, but adverse crop conditions on the European continent lowered expected yields somewhat. Clearly, much would depend on whether Cuba restricted the 1952-53 grind, as seemed likely. One report indicated a possible restriction to a production of 5,000,000 tons in 1952-53.

In any case, Cuba had contributed heavily to a world surplus estimated at 2,385,000 tons or more. Of that amount Cuba set aside 1,750,000 tons in a stabilization reserve to be liquidated over a five-year period. It was suggested to the International Sugar council that a new agreement should be negotiated to replace that of 1937, under which quotas had not been enforced since World War II. A special committee was reported to have prepared a draft of a new agreement which was still being studied by the council as late as Sept. 1952, with the possibility that the council might ask the United Nations to convene a conference on sugar early in 1953.

Meanwhile, sugar price levels, primarily because of quotas, continued comparatively high in the face of surplus. No particular decline was indicated as likely with retail prices in the U.S. apparently firmly established at about 10 cents per pound. In October the no. 4 world raw sugar futures contract was traded below 4 cents per pound. Rationing of sugar continued in the United Kingdom because of the scarcity of dollars. Export controls on sugar and inedible molasses produced in the U.S. or any of its possessions were ended in July 1952, having been established in Oct. 1950. About 14,209,423 tons of centrifugal sugar entered world trade in 1951, slightly less than in the previous year. (J. K. R.)

Table I.—U.S. Sugar-Beet Production

(In thousands of tons)

State	Indicated 1952	1951	Average 1941-50
California	2,793	2,645	2,242
Colorado	1,863	1,906	1,892
Idaho	1,062	1,227	1,082
Nebraska	812	683	704
Michigan	539	605	704
Montana	481	537	774
Wyoming	476	438	395
Utah	322	403	520
Ohio	126	127	248
Other states	1,860	1,914	1,451

Table II.—U.S. Sugar-Cane Production

(In thousands of tons)

State	Indicated 1952	1951	Average, 1941-50
Louisiana	6,153	4,828	5,247
Florida	1,271	1,292	969

Table III.—Centrifugal Sugar Production of the
Principal Producing Countries

(In thousands of tons, raw value)

Country	1951-52	1950-51	Average 1935-39
Cuba	7,900	6,348	3,183
U.S.S.R.	2,300	2,400	2,761
United States	2,007	2,576	1,992
Brazil	1,846	1,740	786
India	1,575	1,480	1,300
France	1,396	1,584	1,060
Puerto Rico	1,325	1,228	974
Western Germany	1,168	1,121	610
Republic of the Philippines	1,080	935	1,058
Hawaii	1,045	996	980

Suicide Statistics.

The provisional death rate from suicide in the United States during the first six months of 1952 was 10.4 per 100,000 population, the rate for the same period of 1951 having been 10.5. Within the United States, the suicide rates per 100,000 for the first six months of 1952 were: northeastern states, 8.7; southern states, 8.8; north central states, 10.4; and western states, 17.6. The estimated number of suicides for the whole country during 1951 was 15,940, with a rate of 10.4 per 100,000 population. In the same year, England and Wales recorded 4,469 and a rate of 10.2 per 100,000 population. In 1950 Canada had a rate of 7.6. The European population of New Zealand in 1949 had a rate of 9.7, and for Australia the rate was 9.8.

In 1949, the latest year of complete record for the United States, of a total of 16,992 deaths from suicide and self-in-

licted injury, the numbers for the specific means were: poisoning by analgesic and soporific substances (mostly barbiturates), 805; poisoning by other solid and liquid substances, 1,044; poisoning by gases in domestic use, 1,118; poisoning by motor vehicle exhaust and other gases, 867; hanging and strangulation, 3,641; drowning, 768; firearms and explosives, 7,215; cutting or piercing instruments, 634; jumping from high places, 553; all other and unspecified means, 347. The suicide rate per 100,000 according to race and sex were: white males, 19.2; white females, 5.5; nonwhite males, 7.0; and nonwhite females, 1.5. Among white males the suicide rate rose with advance in age to a peak of 55.4 per 100,000 at ages 65-69, with a resumption in the rise after age 75. (M. Sp.)

Sulphur. More than 90% of the world output of sulphur originates in the United States, and the bulk of the remainder comes from Italy and Japan.

United States.—For the past ten years demand for sulphur had exceeded output, and mine shipments were maintained by drawing heavily on stocks that had been accumulated in earlier years.

The trend of the industry since 1946 is shown in the following table, as reported by the U.S. bureau of mines.

Data on Sulphur Industry in the United States

	(In thousands of short tons)					
	1946	1947	1948	1949	1950	1951
Production (native)	4,322.8	4,974.1	5,453.5	5,314.4	5,815.2	5,911.6
Shipments	4,623.6	5,020.7	5,576.4	5,364.0	6,165.3	6,165.3
Exports (crude)	1,395.3	1,511.5	1,451.0	1,602.6	1,613.9	1,442.3
Available supply	3,228.3	3,509.2	4,125.4	3,761.4	4,551.4	4,723.0
Consumption	3,256	3,965	4,144.0	3,920.0	4,553.9	?
Stocks (producers')	4,221	3,771.5	3,612.0	3,471.2	2,973.0	3,177.9
By-product recovery	?	48.6	49.7	63.6	159.6	?

Under the pressure of a constantly growing demand, which was accentuated by requirements for the defense program, exploratory work had increased the reserves, and development of expanded production was under way but, in spite of this, shipments were cut back in 1951, to avoid further depletion of stocks.

The production rate in the first nine months of 1952 was slightly above that of 1951; 4,484,067 short tons were produced and 4,308,696 tons were shipped. (G. A. Ro.)

Sumatra: see INDONESIA.

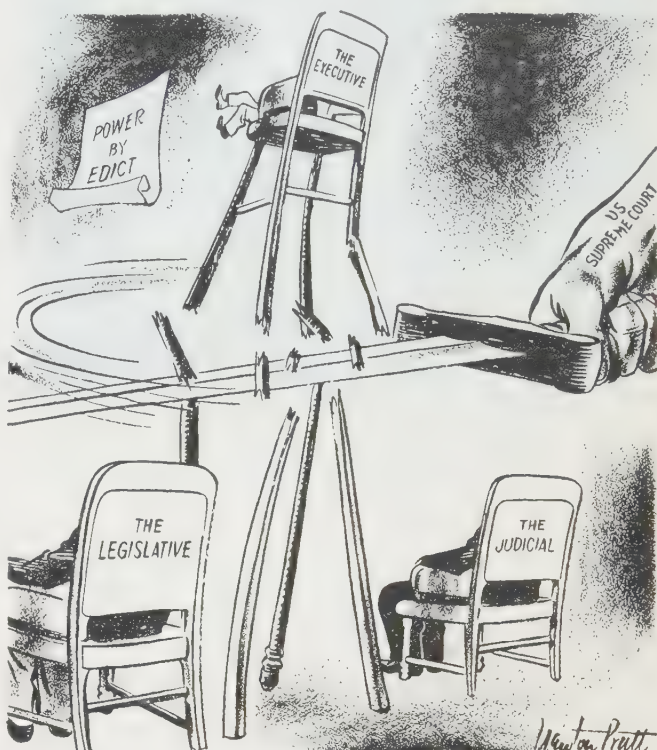
Summerfield, Arthur E (Ilsworth) (1899—), U.S. government official, was born at Pinconning, Mich., on March 17. He worked in various automobile plants and in real estate, and in 1924 became distributor in Flint, Mich., for the Pure Oil company.

In 1929 he founded the Summerfield Chevrolet company and in 1938 became president of the Bryant Properties corporation. He was a member of the board of directors of the American Motorists Insurance company and the Lumbermen's Mutual Insurance company. He became active in Republican politics during Wendell Willkie's campaign for the presidency in 1940. In 1943 he was appointed finance director of the Republican state central committee, and in 1944 he was elected committeeman from Michigan at the Republican national convention. He sponsored a movement in 1946 to draft Sen. Arthur H. Vandenberg for the presidential nomination. Summerfield was appointed to the chairmanship of the Republican strategy committee in July 1949.

After Summerfield had been instrumental in swinging the presidential nomination to Dwight D. Eisenhower at the Republican national convention in July 1952, he was elected chairman of the Republican national committee. On Nov. 25 President-elect Eisenhower selected Summerfield to serve as postmaster general in the coming administration.

Support Prices: see AGRICULTURE.

Supreme Court of the United States. The annual term of the court began Oct. 1, 1951, and ended June 9, 1952. Charles Elmore Cropley, clerk of the court for the past 25 years, died June 17, 1952.



"DOWN TO SIZE," a 1952 cartoon by Pratt of the McClatchy Newspapers

The business of the court insofar as statistics are concerned paralleled closely that of the preceding term, 1,922 cases being disposed of as compared with 1,216. Eight fewer signed majority opinions were rendered, 83 as against 91 during the previous term. Dissenting opinions increased from 54 to 68. All but 13 of the 1,922 opinions dealt with matters in which the federal or state governments were involved. As had been the situation in recent years, criminal cases outnumbered any other category.

Members of the Court.—The United States supreme court in 1952 was composed of the following members (dates indicate year appointment was confirmed by the senate): chief justice, Frederick M. Vinson (1946); associate justices, Hugo L. Black (1937), Stanley Reed (1938), Felix Frankfurter (1939), William O. Douglas (1939), Robert H. Jackson (1941), Harold H. Burton (1945), Thomas C. Clark (1949) and Sherman Minton (1949). (See also LAW.) (H. B. Wv.)

Surgery. The causal relationship between tobacco and cancer of the lung was demonstrated by O. Gsell and A. Ochsner and his associates. Gsell showed that in a series of men with cancer of the bronchus, 87% were heavy to very heavy smokers and only 2% were nonsmokers. He concluded that the more an individual smokes the greater chance he has of developing a cancer of the lung, and that if individuals 45 years of age and older smoke 25 or more cigarettes daily, they have 50 times more chance of developing a cancer of the lung than do nonsmokers. Ochsner and his associates showed a definite parallelism between the sale of cigarettes in the United States and the increased incidence of cancer of the bronchus.



HEART OPERATION being telecast to groups of doctors on a closed TV circuit in Dec. 1951. The Columbia Broadcasting system claimed this to be the first coast-to-coast broadcast of colour television

Whereas in 1920 cancer of the bronchus represented 1.1% of all cancers and in 1930, 2.2%, in 1948 it represented 8.3% of all cancers.

In order to prevent death resulting from clotting in the veins, associated with infection of the pelvis, and following childbirth in which the clot is softened by the infection, C. G. Collins *et al.* recommend ligation of the vena cava, which is the large vein draining the lower extremities and the pelvis, and the ovarian veins. Previously this condition carried a high mortality rate, approximately 80%, but in a series of 70 cases who were operated upon, 62 (89%) survived and 8 (11%) died. Although it may seem undesirable to tie off all the large veins, it was done as a lifesaving procedure, and in spite of the fact that the course of the major vein was interrupted, the end results as far as circulation was concerned were good.

In order to stimulate respiration in an individual with respiratory paralysis, S. J. Sarnoff and others used electrical stimulation applied to the phrenic nerve, which controls respiration. By means of an electrode applied to the skin overlying the nerve in the neck, it is possible to maintain normal respiration until it occurs spontaneously.

Arthur Vineberg treated coronary thrombosis by transplanting an artery of the chest (internal mammary artery) into the wall of the heart. In this way, additional blood is supplied to the heart muscle, and of four patients operated upon by this technique, three progressed nicely. E. R. Maurer successfully removed a fatty tumour of the heart.

V. A. Cooley and M. E. DeBakey reported several cases in which an aneurysm of the aorta was removed and the lumen of the large artery, leaving the heart, maintained by suturing it. This procedure is particularly applicable in cases in which the aneurysm is the result of syphilitic disease of the aorta, and is less efficacious in the patient in whom the aneurysm is caused by hardening of the artery.

H. B. Shumacker showed that removal of the sympathetic nerves is of value in the treatment of frostbite. In 20 patients with frostbite, sympathectomies were done. In all, there was evidence of diminution in circulation, but in each instance the operation greatly relieved the patient. Shumacker believed that sympathectomy, besides relieving pain and sensitivity, hastens the healing process.

In order to prevent swelling of the arm following removal of

a breast for cancer, N. Treves changed the attachment of the large muscle extending from the chest to the arm. In this way, the space left under the arm following the operation was filled and the pressure on the large vein in the armpit was prevented.

Putting the diseased bowel at rest by making an external opening in the small intestine in patients with ulcerative colitis had been the method of choice when symptoms were severe. It was recently emphasized that removal of the diseased colon is better. C. G. Ripstein *et al.* showed that in 72 cases in which the colon was removed there were only 3 deaths (4.1%). E. S. Judd *et al.* emphasized that patients with cancer of the colon a short distance above the rectum should be treated by removal of the rectum. The results reported by Judd showed that to attempt to save the rectal sphincter is hazardous and that if an incomplete operation is done in order to save a part of the rectum, the incidence of recurrence of the cancer is higher the closer the cancer is to the rectal opening. The five-year survival rates in patients in whom the cancer was within 10 cm. of the anus was 57.6%. In those in whom it was located between 11 and 15 cm. it was 64.2% and in those in whom it was between 16 and 20 cm. the survival rate was 73.8%. F. A. Collier *et al.* also emphasized the importance of the radical procedure in cases of cancer of the rectum.

In order to increase the salvage rate in the treatment of cancer, A. G. James, R. D. Williams and J. L. Morton advocated the use of radioactive cobalt. If the radioactive cobalt is applied in flexible nylon tubing, the flexibility of the tubing permits more intimate contact of the radioactive substance than would be possible from other methods of treatment, and a better effect on the tumour is obtained.

P. T. DeCamp *et al.* showed that delay in surgical treatment of acute inflammation of the gall bladder greatly increases the risk. The disease is more serious in older people. In patients who have an obstruction of the ducts leading from the liver to the intestine and who have jaundice and infection as a result of this obstruction, M. A. Hayes and F. A. Collier recommended uncovering a remnant of embryologic duct in the liver which is found in the base of the gall bladder. If a satisfactory duct can be found, they suggest anastomosis of this to a loop of intestine, in this way short-circuiting the bile from the liver into the intestine. They did this successfully in two patients.

Cancer of the pancreas which had extended beyond the pancreas and involved the portal vein (the large vein extending from the intestine and liver) had been considered inoperable. In two such cases, C. G. Charles *et al.* performed preliminary ligation of the portal vein and later removed the diseased vein together with the pancreas.

In patients in whom it is necessary to remove portions of the large vessels of the chest, such as the aorta, P. W. Schafer and C. A. Hardin suggested the use of temporary plastic shunts to permit the blood to flow around the site of the operative procedure and in this way maintain circulation while the operation is being done. (See also MEDICINE; PHYSIOLOGY.)

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Surinam (DUTCH GUIANA). Surinam, lying between French Guiana and British Guiana in northeastern South America, has an area of 55,212 sq.mi. It consists of a plain along the sea, with very little elevation and much swamp, which seldom attains a width of 100 mi., and a plateau rich in timber and minerals. The population, estimated in 1951 at 223,000, lives mainly on the coastal plain. Those born in Europe aggregate between 3,000 and 5,000; more than 50,000 were born in India, or are descended from those born there; about 35,000 are of Javanese origin; 20,000 are Afro-American; and more than 85,000 are indigenous or are partly indigenous, and partly of European, African, Asiatic or Indonesian descent. The capital is Paramaribo (pop. est. in 1951, 78,000). No other town has more than 5,000 inhabitants. All citizens of Surinam are Netherlandish subjects. The official language is Netherlandish, but other languages and dialects are widely used. The governor, appointed by the crown, was J. Klaasesz during 1952. The cabinet was headed by J. A. E. Buiskool.

History.—During 1952 extensive studies were undertaken for the purpose of carrying out the long-range program of development proposed by the International Bank for Reconstruction and Development. Concrete results of these studies were not expected before the beginning of 1953. The difficulty in working out a legislative program acceptable to foreign investors as well as to the majority of the legislative council became more apparent as the year proceeded.

Foreign trade continued to increase slightly during 1952. Connection by air, as well as by maritime facilities with the Netherlands, was improved by new services, and migration of Netherlanders to Surinam was encouraged by credit and other assistance. (See also NETHERLANDS ANTILLES.) (C. E. Mc.)

Education.—On Jan. 1, 1951, there were 120 elementary schools with 31,000 pupils and 783 teachers, 6 higher elementary schools with 2,250 pupils and 90 teachers, 1 secondary school with 81 students, 1 normal school with 48 students and 1 technical school with 99 students. There was also a law college and a medical college.

Finance.—The monetary unit is the Surinam guilder, valued at \$0.530264 U.S. currency, official rate, in 1952. The 1951 budget estimated expenditure at 27,863,000 guilders and revenue at 27,895,000 guilders.

Trade and Communications.—Exports in 1951 totalled 39,708,758 guilders; imports were 45,833,093 guilders. Principal customers were the U.S. (76%) and the Netherlands (6%); the chief suppliers were also the U.S. (37%) and the Netherlands (29%). Important exports included bauxite (about 70%), rice, citrus fruit, timber, gold, balata and coffee.

Internal transportation is largely by water; in 1951 there were 83 mi. of railway and about 250 mi. of roads. Motor vehicles at the end of 1950 included 1,096 automobiles, 499 trucks and 115 buses. In 1948 there were 1,505 telephones and 1,500 mi. of wire.

Production.—The major economic activity is the extraction of bauxite, most of which is exported to the U.S. Production figures in 1951 included bauxite 2,715,195 metric tons; gold 6,494 troy ounces; and balata 272 tons. Rice, sugar and coffee were also produced. There were 38,000 cattle in 1950. (J. W. Mw.)

Swains Island: see SAMOA, AMERICAN.

Swaziland: see BRITISH SOUTH AFRICAN TERRITORIES.

Sweden. A democratic monarchy of northern Europe. Area: 173,390 sq.mi.; pop.: (Dec. 1950) 7,047,000; (1951 est.) 7,073,000. Capital: Stockholm (pop. Jan. 1, 1951) 745,936. Other principal cities (pop. Jan. 1, 1951) were Göteborg 353,991; Malmö 192,498; Norrköping 84,939; Hälsingborg 71,718; Örebro 66,548; Uppsala 63,072. Religion: Lutheran Christian. Ruler in 1952: King Gustav VI Adolf. Prime minister in 1952: Tage Erlander.

History.—In 1952 the Swedes were prosperous, but they lived through a series of crises. Repeated cases of espionage were



SWEDISH air force flying boat, shot down by two soviet MIG-15 jet fighter planes over the Baltic sea, June 16, 1952, while searching for a missing training plane. Crew members of the flying boat are shown in rubber lifeboats before they were picked up by a German freighter

capped in the spring by the discovery of a major ring of spies operating in the north of Sweden, and over a period of ten years selling vital information on the northern defense system to the U.S.S.R. The leader of the group was Fritiof Enbom; both he and his principal agent, Hugo Gjerswold, were sentenced to life imprisonment at hard labour. Enbom's younger brother Martin was given seven years, his girl friend Lilian Ceder eight months, Fingal Larsson five years, and Arthur Karlsson twenty months. The pay for Enbom appeared to have been only \$2,000; the motivation was Communist sympathy and hatred of Swedish society. The treachery of this group affected Sweden more deeply than did Polish and soviet officers caught in similar activities.

Tense relations with the U.S.S.R. were dramatized on June 13 when a Swedish training plane disappeared over the Baltic sea. Three days later a Catalina flying boat, searching for the lost plane, was shot down by two MIG-15 planes. In this case the crew radioed a report of the attack as it started, and the men were fortunate to be picked up quickly by a German steamer. The eight men on the first plane evidently went to their graves with the plane; it was located later 60 ft. below the surface of the sea. Both planes were well outside the 12-mi. limit claimed by the U.S.S.R. along its Baltic coasts. Sharp notes from Stockholm to Moscow elicited only the reply that the second plane had been shot down because it had violated the Soviet border. Sweden admitted that some days earlier one plane had accidentally transgressed the boundary, but insisted that this one had not. A later Swedish note reminded the Russians that they, too, had on several occasions flown over Swedish territory. Notes continued, with the Russians elaborating their charges against Sweden as late as September. Sweden held its ground, and declared its right and intentions to use the international waters of the Baltic—it was not a Russian sea.

Economic problems were serious, though far from desperate. The rapid rise in the price of pulp was halted in February by the English and French decision to pay only a set price, about 20% lower than the existing market figure. This buyers' ultimatum meant millions of kronor less for Sweden's most important export. Meantime inflation continued, and by mid-year the cost-of-living index was up 25% over two years previously. The associations of employers and employees agreed in February to

Riksdag—Second Chamber, 1952

Party	1948		1952	
	Votes	Seats	Votes	Seats
Conservatives (Höger)	478,786	23	538,484	31
Liberals (Folkparti)	882,437	57	929,829	59
Farmers (Bondeförbund)	480,421	30	405,910	25
Social Democrats	1,789,459	112	1,739,227	110
Communists	244,826	8	167,295	5

further collective wage increases of 10.2% (an increase of 1.7% over an agreement reached only a few weeks earlier).

Against this background the national elections for the second chamber of the *riksdag* were held on Sept. 21. The Social Democratic-Farmers coalition was charged with responsibility for inflation and for maintenance of unnecessarily high taxes. Foreign policy was barely mentioned, and in general the campaign brought forth no sharply defined issues. The balloting brought out only 77% of the voters, as compared to 82% at the previous election. The results, however, were more noteworthy than the campaign. The Farmers party, which had joined in the government with the Social Democrats in October 1951, lost heavily; the Social Democrats themselves lost slightly; the liberal Folk party and the Conservatives gained considerably; and the Communists lost less than expected, considering the state of the world and Sweden's position therein. The trend to the right was particularly significant in the larger cities.

The coalition government remained in power, but prophets predicted a future withdrawal of the Farmers, and at least the possibility of a bourgeois government four years later.

(F. D. S.)

Education.—Schools (1951): elementary 28,850, pupils 650,200, teachers 29,700; secondary 390, pupils 143,179, teachers 9,632; technical secondary, pupils 3,790. Teachers training colleges 29, students 6,184, professors and lecturers 1,051. Universities 4 and institutions of higher education 13, students 17,634, professors 448.

Finance and Banking.—Budget: (1951-52 actual) revenue 7,507,000,000 kronor, expenditure 6,423,000,000 kronor; (1952-53 est.) revenue 8,391,000,000 kronor, expenditure 7,220,000,000 kronor. National debt (June 30, 1952): 12,329,000,000 kronor. Currency circulation (Sept. 1952): 4,158,000,000 kronor. Gold reserve (Sept. 1952): 1,043,000,000 kronor. Deposit money (June 1952): 18,450,000,000 kronor. Monetary unit: krona (pl. kronor) with an exchange rate (Dec. 1952) of 14.50 kronor to the pound sterling and 5.18 kronor to the U.S. dollar.

Foreign Trade.—(1951) Imports 9,189,000,000 kronor, exports 9,170,000,000 kronor. Main sources of imports (1951): U.K. 16%; Germany 14%; U.S. 9%; Belgium-Luxembourg 6%. Main destinations of exports: U.K. 19%; Germany 11%; Norway 6%; France 6%. Principal imports: coal, petroleum and products 20%; textile fibres and manufactures 17%; machinery and vehicles 16%; base metals and manufactures 12%. Principal exports: wood pulp 28%; machinery and vehicles 16%; paper and manufactures 14%; wood and manufactures 12%.

Transport and Communications.—Roads (1952): 56,200 mi. Motor vehicles licensed (Jan. 1952): cars and buses 320,876, trucks 89,486. Railways (1952): 10,314 mi., passenger traffic, state railways (1951) 4,045,000,000

passenger miles; freight traffic (1951) 5,800,000,000 ton miles. Shipping (July 1951): merchant vessels 1,251; total tonnage 2,115,526 gross. Scheduled air transport (1951): miles flown 7,388,000; passenger miles 160,670,000; cargo net ton-miles 3,583,000. Telephone subscribers (1951): 1,685,200. Radio receiving set licences (1952): 2,205,000.

Agriculture.—Main crops (metric tons, 1952 est.): wheat 783,000; barley 264,000; oats 884,000; rye 290,000; potatoes (1951) 1,751,000. Livestock (Sept. 1951): cattle 2,633,000; sheep 261,000; pigs (April) 1,331,000; horses 415,000; chickens (April) 12,168,000. Fisheries (salt): total catch (1950) 185,200 metric tons; value 102,000,000 kronor.

Industry.—Industrial establishments (1949): 17,289; persons employed 806,800. Fuel and power: electricity (1951) 19,440,000,000 kw.hr. Raw materials (metric tons, 1951): iron ore 16,116,000; pig iron 852,000; crude steel 1,500,000. Manufactured goods (metric tons): cement (1951) 2,012,000; wood pulp (1950) 3,146,000; timber (1950) 33,500,000 cu.m.

Sweet Potatoes: see POTATOES.

Swimming. The Olympic aquatic carnival at Helsinki, Fin., was the most important event in water sports in 1952 and afforded striking evidence of the notable world-wide progress made in swimming since the previous games in 1948. Not only were all the Olympic records broken, the majority by good margins, but in most of the events the listed marks were beaten by several contestants.

United States representatives reaped premier honours in the men's field, capturing six of nine first places, and Hungarian stars were best in the women's, taking four of seven.

Winning Yankees lowered meet records with the following performances: 100-m. free style, 57.4 sec., Clarke Scholes; 1,500-m. free style, 18 min. 30.0 sec., Ford Konno; 100-m. backstroke, 1 min. 5.4 sec., Yoshi Oyakawa; 800-m. free style relay, 8 min. 31.1 sec., Wayne Moore, William Woolsey, Konno and James McLane. Jean Boiteux of France cut the time for 400-m. free style to 4 min. 30.7 sec. and John Davies of Australia that for 200-m. breast stroke to 2 min. 34.4 sec.; David Browning and Sammy Lee, U.S., scored in diving, the former winning from springboard with 205.29 points and the latter from high platform with 156.28. Hungary earned the water polo title.

Hungarian girls bettered four of the records for women. Judit Temes reduced the figures for 100-m. free style to 1 min. 5.5 sec. in the heats but was slower in the final, and Katalin Szoke, her teammate, won the event in 1 min. 6.8 sec.; Valerie Gyenge cut the mark for 400-m. free style to 5 min. 12.1 sec.;

FINISH of the 100-m. free style swimming event at the 1952 summer Olympics in Helsinki, Fin.



Eva Szekely that for 200-m. breast stroke to 2 min. 51.7 sec.; and Ilona Novak, Miss Temes, Eva Novak and Miss Szoke lowered the Olympic and world records for the 400-m. relay to 4 min. 24.4 sec. Joan Harrison of South Africa clipped the time for 100-m. back stroke to 1 min. 14.3 sec., and Patricia McCormick, U.S., garnered the springboard and platform diving crowns with 147.3 and 79.37 points.

U.S. swimmers also set the pace in shattering world standards, creating these new marks: 100-yd. free style, 49.2 sec., Richard Cleveland; 100-yd. back stroke, 56.5 sec., Jack Taylor; 800-yd. free style relay, 7 min. 40.5 sec., Moore, McLane, Donald Sheff and Frank Chamberlain; 800-m. relay, 8 min. 29.4 sec., Moore, McLane, Sheff and Richard Thoman; 300-yd. medley relay, 2 min. 47.1 sec., Taylor, Gerald Holan and Cleveland; 300-m. medley relay, 3 min. 7.0 sec., Thoman, Dennis O'Connor and Kerry Donovan. Herbert Klein of Germany shaded the breast stroke time for 100 m. to 1 min. 5.8 sec., and John Davies of Australia that for 200 yd. to 2 min. 12.9 sec.

U.S. women swimmers disposed of two relay marks, Jackie La Vine, Mary Kastelyn, Jody Alderson and Marlene Cahill dropping the time for the 400-yd. free style event to 4 min. 5.3 sec. and Sheila Donahue, Carol Pence and Betty Mullen that for the 300-yd. medley to 3 min. 18.1 sec.

Florence Chadwick, U.S., only woman to have swum the English channel from both shores, achieved another great feat in conquering the stretch of troubled ocean between Catalina Island and the California coast. First of her sex to succeed in the gruelling test, she crossed from the island to Point Vicente, about 21 mi., in 13 hr. 47 min. 32.6 sec., coming close to the course record of 13 hr. 35 min. set by Byron Summers in 1927. (See also OLYMPIC GAMES.) (L. DE B. H.)

Switzerland. A republican confederation of 22 cantons in west-central Europe. Switzerland is bounded west by France, north by Germany, east by Austria and Liechtenstein and south by Italy. Area: 15,940 sq.mi. Pop.: (1950 census) 4,714,992; (1952 est.) 4,806,000. Language: German 72.6%; French 20.8%; Italian 5.2%; Romansch 1.1%. Religion: Protestant 57.6%; Roman Catholic 41.1%; Jewish 0.5%. Chief towns (pop., 1950): Berne (cap., 146,499); Zürich (390,020); Basle (183,543); Geneva (145,473); Lausanne (106,807). President of the confederation for 1952: Karl Kobelt; vice-president of the federal council (government): Philip Etter.

History.—The year 1952 inherited from its predecessor the unsolved problem of how to pay for rearmament. The Social Democratic party continued to press for the imposition of a capital levy. Its leaders worked out a plan in accordance with which only about 80,000 persons would be affected and a referendum was held on this proposal on May 18. This was not unexpectedly rejected by 421,459 votes to 328,032 and by all the cantons as such except Zürich, Basle, Schaffhausen and the Ticino, the first three being highly industrialized and the last a poor, mainly peasant, canton.

It was decided to put the government's project for the payment of the rearmament bill to the Swiss people seven weeks later, on July 6. This proposal again asked for the bitterly opposed tax on drinks, for an increase of the *Wehrsteuer*, or—roughly—income tax, and for the severe taxation of luxury foods. It was officially backed by all the principal political parties and by the responsible bankers and industrialists represented by the *Neue Zürcher Zeitung*. And yet it soon became obvious that the propaganda against the government project was much more energetic and more liberally financed than that in its favour; it was indeed systematically organized by groups of big business people with a paid personnel for the purpose.

This opposition, as frequently before, was supported by Pierre Béguin, editor of the influential *Gazette de Lausanne*, and justified itself with the argument that it was unnecessary to increase taxation in a period of prosperity when the revenue was buoyant. In reply government supporters pointed out that the cost of rearmament had increased since the estimates were made, that the wave of prosperity was ebbing and that, if new taxes were not voted, additional government borrowing would become necessary; the latter was likely to intensify the inflationary pressure of which the country was already disagreeably aware.

When the votes registered on July 6 were counted it was found that, while only 43% of the electorate had voted, the new financial bill had been rejected by 352,205 votes to 256,035 and by all the cantons except Zürich, Berne and Solothurn.

Although the Swiss appeared unwilling to pay for their rearmament, the building up of a new modernized army and air force was enthusiastically promoted. A number of tanks were bought from France and U.S., and British models were also tried.

The insignificant Swiss Communist party (*Partei der Arbeit*) was evidently spurred on from Moscow to make efforts to exploit discontent about rearmament and taxation. On April 20 voting took place on a Communist initiative against the unpopular purchase tax, but anti-Communist feeling was sufficient to bring about a rejection by 550,712 to 128,237 votes with no single canton in favour.

The economic history of Switzerland during 1952 was relatively uneventful. The boom brought about by the effects of the Korean war subsided gradually, but without impairing the country's remarkable well-being to any extent except in a few branches of the textile industry. There were no extraordinary changes in the foreign trade by which the Swiss live, though a tendency to trade more with the German Federal Republic and less with France became evident. As the summer passed even textiles showed signs of picking up, and the highly nervous watch industry, reassured by Pres. Harry S. Truman's decision not to allow an increase of the U.S. tariffs against Swiss watches, continued to export record quantities.

In view of the anti-Berne demonstration of July 6 the government decided to let its financial problems slide for a time, meanwhile increasing the national debt. It was even expected that the general revision of financial administration that had to be prepared by the end of 1954 might be made to include the financing of the newly armed forces of Switzerland. (E. Wt.)

Education.—Schools (1948-49): primary, pupils 434,498, teachers 14,136 (5,460 women); secondary and lower middle, pupils 78,587 (girls 36,266), teachers 3,275 (women 427); universities (1949-50) 7, students 14,903, professors and lecturers 1,379; institutions of higher education 2, matriculated students 3,957, teachers 453.

Finance and Banking.—Budget: (1950 est.) revenue 1,622,000,000 Fr., expenditure 1,466,000,000 Fr.; (1951 est.) revenue 1,577,000,000 Fr., expenditure 1,901,000,000 Fr. National debt (Dec. 1950): 11,176,000,000 Fr. Currency circulation (Aug. 1952): 5,017,000,000 Fr. Bank deposits (July 1952): 7,017,000,000 Fr. Gold and foreign exchange (Aug. 1952): 1,427,000,000 Fr. Monetary unit: Swiss franc, with an exchange rate of 12.25 Fr. to the pound and 4.36 Fr. to the U.S. dollar.

Foreign Trade.—(1951) Imports 5,915,500,000 Fr., exports 4,690,900,000 Fr. Main sources of imports (1951): U.S. 16%; Germany 15%; France 10%; U.K. 7%. Main destinations of exports: U.S. 13%; Germany 9%; France 9%; Italy 7%. Main imports: machinery 10%; coal, petroleum and products 9%; steel mill products 8%; textile fibres 6%; fruit and vegetables 4%. Main exports: machinery 21%; watches, clocks and parts 22%; chemicals 16%; textiles, including apparel, 15%.

Transport and Communications.—Roads (1949): 10,250 mi. Licensed motor vehicles (Dec. 1950): cars 146,998; commercial vehicles 41,514. Railways (1949): total 3,345 mi.; state 1,812 mi.; passenger-miles (1950) 3,356,000,000; freight, ton-miles 1,215,000,000. Shipping (1951): merchant vessels 20; total tonnage 100,000; freight handled (1949) 2,252,020 metric tons. Air transport (1950): passenger-miles 91,487,000; cargo net ton-miles 2,450,000. Swissair traffic (1950): passengers 196,625; freight 2,349 metric tons; mail 1,554 metric tons; miles flown 5,618,309. Telephones (1951): 896,398. Radio receiving sets (1949): 986,679.

Agriculture.—Main crops (metric tons, 1951): wheat 235,000; rye 38,000; barley (1952) 52,000; oats (1952) 61,000; sugar, raw value 30,000;

potatoes 938,000. Wine production (1950): 1,130,000 hl. Livestock (April 1951): cattle 1,607,000; pigs 892,000; goats (1950) 180,000; horses 131,000; sheep 191,000; chickens 6,268,000; geese, ducks and turkeys (Sept. 1951) 68,000. Meat production (1951): 69,600 metric tons. Dairy produce (1951): butter 25,800 metric tons; cheese 46,800 metric tons; milk, about two-thirds of total production 17,379,000 hl.

Industry.—Industrial establishments (1950): 11,568; persons employed 492,563. Fuel and power: manufactured gas (1949) 299,000,000 cu.m.; electricity (1951) 10,271,000,000 kw.hr. Index of industrial activity (1950; 1938=100): building 116; cotton 99.5; silk 119.5; embroidery 108; metals 136; watchmaking 123; chemicals 162; foodstuffs 129. Index of employment in manufacturing (1950; 1948=100): 92.

Symphony Orchestras: see MUSIC.

Synge, Richard Laurence Millington (1914–), British biochemist, was born at Liverpool, Oct. 28. He was awarded the Nobel prize for chemistry jointly with Archer John Porter Martin (*q.v.*) on Nov. 6, 1952, for his part in evolving their method of identifying and separating chemical elements by chromatography. Synge was educated at Winchester college and at Trinity college, Cambridge, and he and Martin undertook chemical research together at Cambridge and, from 1941 to 1943, at the Wool Industries Research association's laboratories at Leeds, Yorkshire. In 1943 Synge went as a biochemist to the Lister Institute of Preventive Medicine, University of London, and from 1948 he worked at the Rowett Research institute, Bucksburn, Aberdeenshire. He was elected a fellow of the Royal society in 1950. In the *Dagens Nyheter* (Stockholm) of Nov. 6 Arne Tiselius (Nobel prize winner, 1948), with whom Synge had worked in 1946, wrote that the Synge-Martin method was so simple "that almost any schoolboy with ordinary laboratory equipment could demonstrate the procedure." The new chromatographic method had "given us the key to solve a number of very important problems of great current interest in chemistry, biology and medicine." In 1951 Synge, with four other scientists, formed a "science for peace" committee, and he was also a member of the British sponsoring committee of the Communist-inspired "People's Congress for Peace" held in Vienna, Aus., in Dec. 1952.

Synthetic Products: see PLASTICS INDUSTRY; RAYON AND OTHER SYNTHETIC FIBRES; RUBBER; STANDARDS, NATIONAL BUREAU OF.

Syphilis: see VENEREAL DISEASES.

Syria. An independent Arab republic, Syria is bounded west by the Mediterranean and Lebanon, northwest and north by Turkey, east and southeast by Iraq, south by Jordan and southwest by Israel. Area: 72,200 sq.mi. Pop. (Dec. 1951 est.): 3,517,000, including 288,000 nomads and seminomads. Language: Arabic (86%); also Kurdish, Armenian, Turkish, Circassian. Religion (1952 est.): Moslem 85.7%; Christian 14%. Chief towns (pop., 1950 est.): Damascus (cap. 335,100); Aleppo (362,500); Homs (244,100); Hama (146,600); Latakia (100,500). Chief of state and prime minister in 1952: Col. Fawzi Silo.

History.—In Jan. 1952 the Syrian government closed all Moslem brotherhood offices in the country. In March the United States information centre in Damascus was blown up.

In that month the government (which had come into office on the nomination of the Higher Military council headed by the chief of the general staff, Col. Adib el Shishakly, after the military coup d'état of Nov. 29, 1951) announced a program of national land reform. It decreed the distribution of about 4,000,000 ac. of state-domain lands among groups of agricultural co-operative settlements, each comprising between 20 and 50 families and varying in size between 2,500 and 5,000 ac. This settlement scheme was designed to provide for about 16,000

families; and to help them, the Agricultural bank would make long-term loans to finance the purchase of farm machinery, seed, etc.; at the same time the government would accelerate irrigation projects, and place agricultural experts at the disposal of the settlers.

Also in March the government negotiated a trade agreement with the Lebanese government, thus ending a deadlock which had persisted since March 1950 when the customs union linking the two countries had been severed. By the new agreement free exchange of local agricultural and industrial products and free travel between the two countries (subject to Syrian military interests) were re-established; and, in accordance with the agreement reached in 1949, Syria liquidated its French franc debt by the payment to Lebanon of 44,000,000 Lebanese francs.

In April the Syrian government, following the example of Lebanon and Iraq, set up the Syrian Development council to direct the economy of the country. It also announced its support for the establishment of an industrial bank to further industrial projects and to assist with loans industries which had contracted debts during the depression of 1949.

In May the government introduced legislation controlling foreign companies operating in Syria. Under this legislation all such companies had to register with the ministry of national economy and each had to have a Syrian majority of both directors and shareholders; also the chairman or local agent had to be of Syrian nationality.

In June a new government was announced which included Col. Fawzi Silo as prime minister and minister of defense and Said ez-Zaim as finance minister.

A conference in Damascus was called on July 7 by the Syrian government for the discussion of the Arab attitude to recent Israeli moves. It was attended by delegates from Syria, Lebanon, Egypt and Jordan, and passed a resolution that future Arab delegates to the Mixed Armistice (Palestine) commission should form a joint body instead of attending as four separate entities.

In September a trade agreement was signed between Syria and Czechoslovakia. In the same month a Damascus press report announced the constitution, sponsored by Colonel Shishakly, of a new party, the Arab Liberation movement. Its program included the emancipation of women, work for all, regulation of relations between employers and workers, progressive taxation and agrarian, economic and educational reform. (O. M. T.)

Education.—Schools (April 1951): elementary 1,759, including private 228, foreign 38; total pupils 260,759, including private 48,817, foreign 6,715; secondary 136, including private 69, foreign 18; total pupils 28,595, including private 10,127, foreign 2,227. Technical schools (1950) 8, including 2 private; university 1.

Finance and Banking.—Budget: (suppl. est., January 1–June 30, 1951) balanced at L.S. 67,800,000; (1951–52 est.) balanced at L.S. 197,000,000. Currency circulation (April 1951): L.S. 225,000,000. Monetary unit: Syrian pound with an exchange rate (Nov. 1951) of L.S. 6.16 to the pound sterling and L.S. 2.20 to the U.S. dollar.

Foreign Trade.—(April–December 1950) Imports L.S. 198,000,000, exports L.S. 207,900,000.

Transport and Communications.—Roads (1950): 9,740 mi., of which 3,021 mi. are usable all the year. Licensed motor vehicles (Dec. 1950): cars 4,172, commercial 5,476. Railways (1949): 539 mi. Telephones (1951): 11,516. Radio receiving sets (1950 est.) 50,000.

Agriculture.—Main crops (metric tons): wheat (1951 est.) 700,000; barley (1951 est.) 300,000; maize (1948) 39,000; oats (1951 est.) 3,000; potatoes (1948) 15,000; rice (1948) 20,000; cotton, ginned (1950) 40,000; cottonseed (1950) 73,000. Fruit production (metric tons): grapes (1949) 150,000; olives (1950) 26,000; olive oil (1951) 9,000; oranges and tangerines (1951) 2,000. Livestock (Sept. 1951): sheep 2,363,000; goats (1949–50) 1,196,000; cattle 401,000; horses 93,000; donkeys 260,000; mules (1950) 54,000; chickens 2,171,000.

Industry.—Production: cotton (metric tons, 1950 est.) 5,600; natural and artificial silk textiles (1950) 26,700,000 m.; box calf and kid-skin leather (1947) 29,000,000 sq.m.; salt (1947) 18,800 metric tons; cement (1951) 38,800 metric tons; asphalt (1947) 14,500 metric tons.

Syrup, Sorgo and Cane: see SUGAR.

Table Tennis. The 1952 world championships in table tennis were played in Bombay, India, Feb. 1-10. The Swaythling cup was won by Hungary (J. Koczian, F. Sido, K. Szepesi); the Marcel Corbillion cup by Japan (Shizuka Narahara, Tomie Nishimura); men's singles by Hiroji Satoh (Japan); women's singles by Angelica Roseanu (Rumania); men's doubles by Norikazu Fujii and Tadaaki Hayashi (Japan); women's doubles, Shizuka Narahara and Tomie Nishimura (Japan); mixed doubles, F. Sido and Angelica Roseanu (Rumania); the Jubilee cup, restricted to players appearing in world championships at least 21 years before, Victor Barna (England). The 1953 world championships were to be held in Rumania.

The 22nd U.S. national table tennis championships were held at the Masonic temple, Cleveland, O., March 28-30, 1952. The following were the winners: men's singles, Lou Pagliaro (Brooklyn, N.Y.); women's singles, Mrs. Leah Neumberger (New York, N.Y.); junior singles, Carl Dentice (Milwaukee, Wis.); boy's singles, Dave Krisman (South Bend, Ind.); junior miss singles, Carolee Leichty (South Bend, Ind.); esquire singles (50 years old or over), Louis Scharlack (San Antonio, Tex.); senior singles, Bill Price (St. Louis, Mo.); men's doubles, Richard Miles (New York city) and Sol Schiff (Bronx, N.Y.); women's doubles, Mrs. Leah Neumberger (New York city) and Mildred Shahian (St. Louis, Mo.); senior doubles, Bill Gunn (Mamaroneck, N.Y.) and Tibor Hazi (Washington, D.C.); mixed doubles, Sol Schiff (Bronx, N.Y.) and Mrs. Leah Neumberger (New York city).

The English open championships were played March 25-29, 1952, at Wembley, London. The men's singles were won by Richard Bergmann (England); women's singles, Linde Wertl (Austria); men's doubles, Z. Dolinar and J. Harangozo (Yugoslavia); women's doubles, Diane Rowe and Rosalind Rowe (England); mixed doubles, Johnny Leach and Diane Rowe (England).

Ninety-six players from 11 of the 16 soviet republics and from Moscow and Leningrad participated in the All Union table tennis championships of the U.S.S.R. held at Vilnius in the Lithuanian S.S.R. The men's singles were won by A. Akopyan (Armenia); the women's singles by A. Mitton (Estonia).

(P. W. R.)

Taft, Robert Alphonso (1889-), U.S. senator, was born on Sept. 8 in Cincinnati, O., the son of William Howard Taft, 27th president of the U.S. He graduated from Yale university, New Haven, Conn., in 1910, and from the Harvard law school in 1913. During World War I he served as assistant counsel of the U.S. Food administration, and after the war he helped organize relief services to Europe. He served in both houses of the Ohio legislature, was elected to the U.S. senate in 1938, re-elected in 1944 and 1950. He was a strong contender for the Republican nomination for the presidency in the 1944, 1948 and 1952 national conventions.

By the early 1940s Taft had become recognized as the principal spokesman for the conservative wing of the Republican party. In the post-World War II years he became increasingly critical of the administration's domestic policy, specifically attacking huge national expenditures and the trend toward centralized government. Likewise he assailed the foreign policy of Pres. Harry S. Truman and Secretary of State Dean Acheson. Truman, Taft declared, did not have the constitutional right to commit U.S. military forces in Korea without consent of congress. He held similarly that a congressional limit should be placed on the number of U.S. troops sent to defend Europe. Any attempt to halt communism in Asia by ground forces alone, Taft contended, was futile; superior air and naval forces should be used instead.

Taft, known familiarly as "Mr. Republican," waged a bitter pre-convention contest with Dwight D. Eisenhower for the Republican presidential nomination in 1952, but was defeated by Eisenhower on the first ballot at Chicago, July 11. He then declared that he would not again seek the Republican nomination. On Sept. 12 at New York city he composed his differences of view with those of Eisenhower and announced that he would campaign for the latter without reservation. (See POLITICAL PARTIES, U.S.)

Taft-Hartley Act: see NATIONAL LABOR RELATIONS BOARD.

Tanganyika: see BRITISH EAST AFRICA; TRUST TERRITORIES.

Tangerines: see FRUIT.

Tangier. An international and demilitarized zone of Morocco, Tangier is on the southern shore of the Straits of Gibraltar. Area: 232 sq.mi. Pop. (mid-1949 est.): 150,000 including 30,000 Europeans. Language: Arabic, French and Spanish. Religion: mainly Moslem. Administration is by a committee of control composed of the resident consuls general of France, Great Britain, the United States, Belgium, Italy, the Netherlands, Portugal and Spain, which appoints a legislative assembly of 26 members (4 French, 4 Spaniards, 3 British, 3 U.S., 1 Belgian, 1 Dutch, 1 Portuguese, 3 Jews and 6 Moslems). Tangier remained under the nominal sovereignty of the sultan of Morocco and his representative (the *mendoub*) was Hadj Mohammed el Tazi. Administrator in 1952: José Luis Archer (Portugal).

History.—On March 30, the 40th anniversary of the Fez treaty which had imposed the French and Spanish protectorates on Morocco, a violent manifestation of the Moroccan Nationalist party took the international authorities by surprise. The police opened fire and at least 12 rioters were killed and 157 wounded. The demonstration, which was apparently meant to be anti-French, got out of hand and degenerated into an attack on any European shops and cafés, of which about 100 were looted. On April 3 French and Spanish troops were moved into Tangier territory and put at the disposal of the chief of police, Colonel Legrand, a Belgian.

On April 7 the Spanish government delivered a *note verbale* to the heads of the diplomatic missions in Madrid of the seven other nations represented on the committee of control, demanding a complete revision of the 1945 agreement and a return to the convention of 1923 and 1928 (under which the chief of police had been a Spaniard). At the end of May the British government replied to the Spanish note: it did not share the Spanish view that the 1945 agreement had lapsed but agreed that certain changes in the interests of better administration would be desirable.

At the end of June it was learned the governments of France, Great Britain and the United States had suggested the creation in Tangier of a motorized police corps with a Spaniard as its commander and a Frenchman as his deputy. The municipal police of Tangier would be under the command of a Frenchman with a Spaniard as his deputy.

Tanks: see MUNITIONS OF WAR.

Tariffs. There were no major new trends in the tariff policies of the world during 1952. Activities centring around the General Agreement on Tariffs and Trade related primarily to the clarification of relationships among the contracting parties. With the formal inauguration of the Schuman plan, members of the new European Coal and Steel Community initiated measures designed ultimately to effect an integration of their tariffs in respect of coal and steel products. New restrictive

import measures were adopted during the year by the United States; largely because of the "dollar shortage" problem in many areas, these measures attracted considerable world-wide interest. Nevertheless, they effected no significant change in the over-all tariff structure of the United States.

General Agreement on Tariffs and Trade.—Near the close of 1952, 34 countries were contracting parties to the General Agreement on Tariffs and Trade (G.A.T.T.). Although 37 countries had acceded to the General agreement, 3 of them—China, Lebanon and Syria—had later withdrawn. During the year the major G.A.T.T. activity was the seventh session of the contracting parties held at Geneva, Switz., beginning Oct. 2. The agenda included the following items: (1) the waiver of most-favoured-nation and other contractual obligations under the G.A.T.T. to permit members of the European Coal and Steel Community to adjust their tariffs on coal and steel products as envisaged in the Schuman plan; (2) the application of Japan for accession to the General agreement; (3) the French plan for a general lowering of customs tariffs—a proposal which would require participating countries to reduce their average tariff rates on designated groups of commodities by a specified percentage; (4) consultations with contracting parties maintaining discriminatory import restrictions for balance-of-payments purposes, *e.g.*, consultations with British Commonwealth countries and others; (5) complaints by individual contracting parties of alleged violations of the provisions of the General agreement; (6) requests by individual contracting parties for waivers from specific obligations assumed under the General agreement; and (7) reports by individual contracting parties on various matters, such as progress reports on the development of customs unions in which one or more contracting parties had participated.

No trade agreement negotiations were undertaken within the framework of the General agreement during 1952. However, a few bilateral agreements providing for the exchange of tariff concessions were concluded.

The Schuman Plan.—Following ratification of the European Coal and Steel Community (Schuman plan) by the six participating countries (France, Germany, Belgium, the Netherlands, Luxembourg and Italy), the foreign ministers of those countries agreed that the community should come into effect on Aug. 10. Among other measures designed to effect the joint development of the major coal and steel resources of western Europe, the plan contemplated the establishment, as far as feasible, of a single community or common market for trade in coal, coke, iron ore, iron and steel. The plan, therefore, provided for the elimination of import duties and other trade restrictions on these commodities between the various members of the community.

The plan also provided for the eventual establishment of minimum rates of duty below which, and maximum rates above which, the Schuman plan countries would not tax imports of coal, iron and steel commodities entering from outside the community. Some of these tariff provisions were, at least technically, in violation of provisions of the General Agreement on Tariffs and Trade. Consequently, it became necessary for the Schuman plan countries to obtain a waiver of most-favoured-nation and other commitments from the members of G.A.T.T. to permit full operation of the plan. The granting of such waiver was one of the many subjects considered at the seventh session of G.A.T.T. (*See also* EUROPEAN UNION.)

General Tariff Revisions.—Early in the year the Nicaraguan chamber of deputies authorized the creation of a commission to undertake a complete revision of that country's tariff.

A comprehensive tariff revision was initiated in Czechoslovakia. The government announced that the system of specific duties would be replaced largely by duties levied on an ad valorem basis. As an initial step, a number of imports were

made immediately subject to ad valorem duties.

A general tariff revision was being contemplated in Denmark. That country's tariff, about 30 years old, was considered by the government to be in need of both a revised nomenclature and a new schedule of duties. The objectives, apparently, included making about 200 groups of commodities dutiable on an ad valorem basis as well as giving additional protection to selected industries.

A comprehensive revision of the Norwegian tariff schedule became effective in Jan. 1952. Rates of duty on more than 600 of the 1,000 or more items in the Norwegian tariff were revised, and additional modifications were contemplated. Duties levied on a specific basis were increased generally by about 100%. Various specific duties, moreover, were converted to an ad valorem basis. Rates of duty on items previously dutiable on an ad valorem basis were not altered.

New tariff schedules also became effective during the year in Jordan and in St. Pierre and Miquelon. A comprehensive revision was also in project in the Belgian Congo.

Less Extensive Revisions.—The year 1952 was the third consecutive one during which there were relatively few minor changes in the tariff schedules of individual countries. Upward revisions in duty of a minor or piecemeal character were materially more prominent during the year than those providing lower import duties; as indicated, however, the aggregate of these revisions did not appreciably alter the world tariff structure. Countries raising their duties or import fees on an important number of commodities were: Bolivia, Chile, the Dominican Republic, Mexico, Peru, Venezuela, Finland, Ireland and Egypt.

The only revision noted during the year providing for lower duties on a substantial number of import items was that provided in Colombia. Near the beginning of the year that country, in the first important revision of its recently adopted tariff, reduced duties on about 500 items including, particularly, various drug products, chemicals and agricultural implements. Tariff rates were increased for a few commodities.

United States.—The most publicized developments in United States tariffs during 1952 related to activities of various groups of domestic producers seeking increased protection against imports. Such activities were reflected principally in applications for escape-clause investigations filed with the United States tariff commission under the escape-clause provisions of the Trade Agreements Extension Act of 1951. During the first nine months of the year, the tariff commission had 22 such investigations pending, compared with 11 during the first nine months of 1951. Broadly speaking, if the commission found after investigation that a domestic industry was being seriously injured or threatened with serious injury as a result of a trade-agreement concession, the president could impose whatever import duty or import quota was recommended by the commission.

The tariff commission also had under way other investigations which could lead to increased import restrictions. By direction of the president, two investigations—one on edible tree nuts and the other on wool and wool tops—were in progress under the provisions of section 22 of the Agricultural Adjustment act; under that statute, the president could impose import fees or quotas if the commission determined imports of the products concerned were interfering materially with programs of the department of agriculture. In response to a senate resolution, the commission also undertook an investigation of chinaware under the provisions of section 336 of the Tariff act of 1930; if the investigation established differences in cost of production of those articles in the United States and foreign countries, the import duty could be increased or decreased, within statutory limits, to offset the difference.

During the year, the department of agriculture continued to restrict imports of cheese, butter and other fats and oils, casein, flaxseed, peanuts and rice under section 104 of the Defense Production Act of 1950. The United States had granted tariff concessions on a number of these products in trade agreement negotiations. Some of the restrictions, such as that on butter, virtually excluded imports; others, such as those on cheese, reduced imports substantially below the levels prevailing before the quotas were imposed.

The increasing resort to the "escape clause" and other devices for restricting imports by individual United States producing interests was regarded apprehensively by the governments of various countries which traditionally export to the United States market. European observers expressed alarm that the United States appeared to be reversing its policy of espousing liberal international trading and was thereby turning to more aggressive protectionism.

In January the Italian government, in a memorandum to the state department, described "the serious economic, social, and psychological repercussions" in Italy resulting from United States trade restrictions and other measures which unfavourably affect Italian exports. Specifically, Italy protested actions under the escape clause, the "buy American" policy and restrictive measures which had been initiated under section 104; all of these measures, they said, were being employed to limit United States imports of Italian products, particularly almonds, olive oil and cheese. The Italian foreign office recalled that through the Economic Cooperation administration the United States had encouraged Italy and other European countries to "make a frontal attack on the dollar shortage problem" by increasing exports to the United States. It feared, however, that the renewed recourse to restrictive trade practices by the United States constituted a marked inconsistency between principle and practice.

A similar protest by the United Kingdom was registered early in April 1952. That government expressed apprehension over "a most disturbing increase" in the number of escape-clause applications, some of which affected important United Kingdom export products such as motorcycles, bicycles, chinaware, tobacco pipes and wood screws.

Shortly thereafter, also in April, Belgium took more positive action. The Belgian government notified the United States that the tariff concession on mastic gums granted in G.A.T.T. would be withdrawn in view of the United States action on hatters' fur. This was the first case of formal retaliation by a country adversely affected by United States action under the escape clause.

Discontent on the part of G.A.T.T. members with regard to the United States import restrictions, particularly the import quotas on cheese imposed under section 104 of the Defense Production act, came to a focus at the sixth session of the contracting parties held in Sept. 1951 and at the meeting of the Intersessional committee held in Feb. 1952. Nine signatories to the General agreement protested that the United States had impaired or nullified G.A.T.T. commitments by its actions under section 104 and that they either were entitled to compensatory concessions or were privileged to withdraw concessions of equal benefit to the United States.

Although requests by various United States producers for protection against imports were more numerous in 1952 than in any year in at least a decade, their requests were not automatically granted by the government. Of the 22 escape-clause investigations before the tariff commission, 8 were disposed of by Oct. 1. In the case of two—relating to hatters' fur and dried figs—the commission recommended increased import restrictions, which the president authorized. In the case of two

others—affecting garlic and watches and watch movements—the commission recommended increased import duties; the president, nevertheless, rejected those recommendations. In connection with four other investigations—relating to motorcycles, blue-mould cheese, spring clothespins and groundfish fillets—the commission did not find serious injury and, therefore, did not recommend increased import restrictions. The 14 remaining cases were still before the commission.

Late in June, the congress extended section 104 of the Defense Production act in a modified form. The modified provisions were generally regarded by importers as more flexible and moderate than the previous statute. In July the department of agriculture, under the new provisions, removed the quotas on imports of certain types of cheese and some rice and flaxseed products; it also relaxed the quotas applicable to certain other types of cheese. Most of the quotas, however, continued unchanged. At the beginning of October, the department removed import quotas on a few other varieties of cheese and, as permitted by the revised law, increased all quotas under section 104 by 15% "in the interest of international trade and relations." (See also INTERNATIONAL TRADE.)

(D. L.H.; G. P. H.)

Taxation. In his economic report for Jan. 1952, Pres. Harry S. Truman proposed that congress "provide at least enough additional revenues to reach the revenue goal proposed last year, by eliminating loopholes and special privileges, and by tax rate increases." This would have meant providing additional revenue of about \$5,000,000,000. The president, however, did not send any special tax message to congress, and no further details on his proposals were given by the treasury. Congressional and public opinion was strongly opposed to further tax increases.

In his January budget message the president predicted a deficit of \$8,200,000,000 for the fiscal year 1952 and \$14,400,000,000 for the fiscal year 1953. Both revenues and expenditures turned out to be less than the January budget estimates. Expenditures fell short of the estimates by more than did revenues with the result that the actual deficit in the fiscal year 1952 was \$4,000,000,000. Nevertheless, total budget receipts in the fiscal year 1952 were \$62,100,000,000, an all-time high and an increase of \$14,000,000,000 over the fiscal year 1951. Estimates for the fiscal year 1953 indicated, late in 1952, total budget receipts of \$68,700,000,000 and a deficit of \$10,300,000,000.

U.S. Legislation.—In 1952 there was no major federal tax legislation. Among several minor changes in the law were the following: the charitable deduction allowed individuals was increased from 15% to 20% of adjusted gross income. The capital gain on securities purchased by an employee through a stock purchase plan operated by his employer was made taxable only when the stock was sold and the gain actually realized. Under the excess profits tax some changes were made in the definition of base period earnings for corporations completing contracts or making deposits under the Merchant Marine act and certain corporations which used copper and zinc as raw materials and which increased their total facilities by 80% or more in the base period; also when a taxpayer operated a branch at a loss during the base period, the loss, subject to certain restrictions, was not required to be deducted from the base period earnings credit.

Although there was no change in tax rates, people were paying heavier taxes in 1952 because the Revenue Act of 1951 (passed in Oct. 1951) became fully effective.

U.S. State Taxation.—State tax collections increased by about 10% in the fiscal year 1952. The increase was largely the result of increases in income, sales and prices. Increases in tax

State Tax Collections by Source*

Fiscal Year 1952†

	Amount (millions)	Percentage distribution
Total	\$9,839	100.0
Sales and gross receipts	5,730	58.2
General sales or gross receipts	2,229	22.7
Motor fuels	1,871	19.0
Alcoholic beverages	442	4.5
Tobacco products	449	4.6
Other	739	7.5
Licences	1,475	15.0
Motor vehicles and operators	924	9.4
Corporations in general	226	2.3
Other	325	3.3
Income taxes‡	1,736	17.6
Individual income	905	9.2
Corporation net income	830	8.4
Property taxes	370	3.8
Death and gift	211	2.1
Severance	272	2.8
Other	45	0.5

*Preliminary; detail will not necessarily add to totals because of rounding. †Data are for state fiscal years ending June 30, except for six states with earlier closing dates. ‡Combined corporation and income taxes reported by five states, tabulated with individual income.

Source: Department of Commerce.



"THE TRIAL of the former tax official may proceed, your honor . . . but it wasn't easy to get a jury without any prejudice against the Bureau of Internal Revenue . . ." a 1952 cartoon by Lichty of the Chicago Sun-Times Syndicate

rates and new taxes were not of much importance; in some states there were reductions in rates or increases in exemptions under certain taxes.

Income taxes were cut, either by lowered rates or increased exemptions, in Colorado, Georgia, Louisiana, Maryland, Mississippi, New York and Virginia. Rates were increased in Kentucky and emergency rates on corporations in Pennsylvania and Rhode Island were extended.

There was little change in sales, use and gross receipts tax rates. New exemptions were added in Arizona, Georgia, Michigan, Rhode Island, Virginia and South Carolina. Massachusetts and Virginia applied a 5% tax to the gross receipts from television and radio broadcasting rights at boxing matches. New York imposed a 15% admissions tax on trotting race meetings. Rhode Island extended its 2% sales and use tax through May 31, 1953.

Property tax changes were largely increases in exemptions. Michigan increased its tax on income-producing intangible personal property from 3% to 3.5%. Colorado imposed a tax of $\frac{1}{2}$ mill per dollar of assessed valuation on owners of poultry and livestock other than sheep and goats.

Maryland introduced a tax of \$5 per 100-proof gallon on distilled spirits seized and "on the potential quantity distilled spirits to be derived from the quantity of mash seized." Virginia introduced a \$1,500 licence tax for the manufacture of alcoholic beverages from fruit or fruit juices.

Gasoline taxes were increased in the District of Columbia, Massachusetts and Missouri. Louisiana lowered its rate of 9 cents a gallon to 7 cents.

The relative importance of various state taxes remained about the same as in previous years. The accompanying table shows collections from various taxes and the percentage breakdown for the fiscal year 1952.

Tax Treaties.—The year 1952 witnessed a substantial increase in the area covered by international treaties seeking to eliminate double taxation. Effective treaties now existed between the United States and Canada, Denmark, France, Ireland, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the Union of South Africa and the United Kingdom. Pending exchange of ratifications by the governments concerned were tax treaties between the United States and Belgium, Finland and Greece. Negotiations had been started with Argentina, Australia, Austria, Brazil, Colombia, Cuba, Israel, Italy, Japan, Luxembourg, Mexico, the Philippines and Uruguay.

Canada.—In 1951, to meet an expanded defense program, various increases were made in excise taxes and a surcharge of 20% was levied on existing personal and corporate tax liabilities (the surcharge on corporations applied to the tax on profits in excess of \$10,000). For the fiscal year ending March 31, 1952, total revenues exceeded budget estimates by 7.5% while total expenditures fell short of budget estimates by 1.5%. The actual budget surplus was \$356,000,000 instead of the estimated \$30,000,000. In the budget speech of April 8, 1952, the minister of finance, Douglas Abbott, proposed a reduction of about 6% in personal income taxes, effective July 1, 1952, in addition to reductions in excise and sales taxes. These changes were expected to reduce revenues in a full year by \$146,000,000. Nevertheless, the budget surplus for the fiscal year ending March 31, 1953, was expected to be \$9,000,000—in effect, there was a balanced budget.

Since the reduction in personal income taxes was effective for only half of 1952, the reduction amounted to about 3% for the whole year. Also the reduction was incorporated in a new rate schedule which replaced the defense surcharge. In 1952 the tax rate on the lowest taxable income bracket was 17.5%, excluding the old-age security tax, and 91% on the highest bracket.

In 1951 an Old-Age Security act was passed under which payments of \$40 per month were made to citizens over 70 years of age without a means test. These payments were financed by a 2% tax on personal incomes (with a maximum of \$60 per year), a 2% tax on corporate income and 2% of the existing general sales tax. The old-age security taxes became effective July 1, 1952. The reduction in the personal income tax mentioned above was apart from this new tax, so that the net reduction in personal income tax liabilities was about 2% in 1952 and about 4% in 1953.

Several technical changes in the personal income tax were introduced. The most important of these was a doubling of the maximum amount of medical expenses that could be deducted. Medical expenses could be deducted in excess of 4% of income up to a maximum amount of \$1,500 for a single person and

\$2,000 for a married person, with additional allowances for dependents.

The major change in the corporate income tax was a consolidation of the federal and provincial taxes in nine provinces. The federal tax rate was increased from 15% to 20% on the first \$10,000 of profits and from 45.6% to 50% on profits in excess of \$10,000. This increase replaced a previous provincial tax of 5% in eight of the provinces which would receive equivalent payments from the federal government. In August, Ontario, which had a corporate tax rate of 7%, also entered the "tax rental" agreements. In Quebec, where the corporate tax rate was 7%, the provincial tax was to continue, but a 5% tax credit would be allowed against the federal tax on profits earned in the province. Since the federal rate on profits of more than \$10,000 was increased by 4.4 instead of 5 percentage points, the consolidation involved a slight decrease in ordinary corporation taxes. In addition, however, corporations became subject to a 2% old-age security tax, so that the top corporate rate was 52% in nine provinces and 54% in Quebec.

Special relief was granted to certain public utility companies in recognition of their need for raising large amounts of capital and of the fact that their rates were subject to public control. The rate on companies whose main business was the generation or distribution of electrical energy, gas or steam to the public was reduced to 43% excluding the old-age security tax. This relief was intended to be temporary; when the general corporation rate was reduced to 43% or less, the relief would be eliminated.

Certain reductions and changes were made in commodity taxes. Except for a few additions to the list of exempt goods, there was no change in the general sales tax. The rate of this tax was 10%, of which 2% consisted of the old-age security tax. The second category of commodity taxes consisted of the special excises which applied to consumers' durables and other less essential goods; the rate had been raised in 1951 to 25% with a few exceptions and in general it applied in addition to the general sales tax. Since shortages of critical materials appeared less acute than in 1951, and consequently there was less need of restricting purchases of the goods subject to the special excises, the rate was reduced to 15%. Also certain household appliances which had been taxed at 15% were exempted from the special excise; the rate on soft drinks, which had been 30%, was reduced to 15%. The third category of commodity taxes was those on alcoholic beverages and tobacco. In 1951 the rate on cigarettes had been increased to 23 cents a pack with the result that there was a sharp drop in consumption. Instead of an increase of \$21,000,000 which the minister expected from this tax, revenue declined by \$1,000,000. In 1952 the rate was reduced again to 20 cents per pack. Only minor changes were made in the taxes on alcoholic beverages. Changes in commodity taxes became effective April 9, 1952. (See also BUDGET, NATIONAL; DEBT, NATIONAL; MOTOR TRANSPORTATION; MUNICIPAL GOVERNMENT.)

(H. J. Mr.)

Tea. The most notable tea event of 1952 was its removal in October from the restricted list in the major consuming country, Great Britain, after 12 years of rationing. Consumption in the United States was indicated at an average of 0.64 lb. per person per year, 96% of the 1951 and prewar levels. United States imports of 84,146,000 lb. in 1951 were 25% below 1950. Imports in 1952 were at about the 1951 rate.

World production was 1,277,000,000 lb. in 1951 (excluding China, the major producer, Indochina and the U.S.S.R.), 6% above 1950, with a further increase anticipated in 1952. India led with 615,000,000 lb.; Ceylon, second highest, produced 324,200,000 lb.

Tea Exports from Principal Producing Countries

Country	(In thousands of pounds)			
	1951*	1950	1949	Average 1935-39
India	445,000	391,000	490,000	332,735
Ceylon	305,200	295,100	297,573	221,568
Indonesia	88,400	69,873	52,743	153,175
China		25,000	20,000	79,483
Japan	18,954	15,944	16,049	43,280
Pakistan	47,200	15,900	27,265	†
Nyasaland		15,157	12,770	8,834
Formosa	20,277	15,116	24,000	22,779

*Preliminary.

†Included in India.

Major producing areas exported 994,300,000 lb. in 1951, as compared with 867,800,000 lb. in 1950. The International Tea committee's export quota was set at 135% of standard exports.

(J. K. R.)

Technicolor: see MOTION PICTURES.

Telegraphy. Outstanding among the United States telegraph industry's achievements in 1952 was the rapid expansion in the use of Western Union's facsimile telegraph methods for the transmission of intelligence between and within business organizations.

In the years between World War II and 1952 the capacity of the nation's telegraph system was doubled and its efficiency vastly increased by the installation of a network of 15 high-speed message centres. An "electrical brain" in each centre routes and flashes telegrams from all points to their destinations. A telegram is typed only once, at the point of origin.

Desk-Fax.—To supplement this high-speed network between cities, rapid progress was made in 1952 in the use of facsimile methods to speed telegrams between local Western Union offices and customers' offices. Thousands of Desk-Fax miniature sending and receiving machines were installed for customer use, enabling businessmen to send and receive their own telegrams by pressing a button.

The telegraph company had approximately 10,000 Desk-Fax machines in use in 48 cities, more than double the number at the end of 1951. Thousands of these machines were to be installed in additional cities in 1953. Installation of the Desk-Fax in customer offices in London, Eng., was begun in March 1952 to increase speed and efficiency in handling messages to and from Western Union's main cable office in that city.

Intrafax.—To speed communications between departments or units of any company, Western Union developed the Intrafax, a customer-operated, leased facsimile system. Such systems were installed in the department-store field between store and warehouse to speed deliveries to customers; in the air-line field to link scattered departments; in the banking field between branches and the central file of a bank to verify check signatures, and between a number of large banks and a central agency for the transfer of funds.

Radio Beam.—During the year Western Union increased the transmitter power of its radio beam system between New York, Philadelphia, Washington and Pittsburgh from one-tenth watt to ten watts by installing three-cavity Klystron amplifier tubes developed specifically for the purpose. This reduced fading and improved continuity of operation.

High-Speed Fax, the world's fastest practical communication method, with a faster-than-speech speed of 3,000 words a minute, was placed in regular use flashing telegraph traffic between New York city and Washington, D.C., on the Western Union microwave beam.

Armed Services.—Western Union was carrying out in 1952 large contracts with the armed services involving high-speed switching systems, telegraph carrier systems, facsimile telegraph equipment and radio techniques. It greatly expanded the nation-wide push-button telegraph switching network it provides to the U.S. air force, linking more than 200 air force stations

with 130,000 mi. of telegraph circuits. The telegraph company also enlarged some of the extensive private wire switching systems it leases to many American companies.

The Press.—Telegraph service to the press reached record-breaking proportions during the Republican and Democratic nominating conventions in July. Western Union flashed 16,445,647 news words to the press in the United States and other countries during the conventions, and handled additional millions of news words during the presidential campaign.

Weather Service.—The telegraph company in 1952 began providing scientific weather forecasts to hundreds of customers in 26 states, acting as agent for the weather forecasting services of the National Weather institute. Industry and agriculture were able to save many millions of dollars annually through wider use of scientific, pin-pointed weather information.

Submarine Cable Amplifiers.—With the six installations scheduled during 1952, nine vacuum tube amplifiers would be in use on the ocean bottom in eight of Western Union's transatlantic cables between the United States, Newfoundland and the British Isles. These amplifiers triple the word speed of the cables and provide additional all-weather communication facilities to ensure secret, high-speed handling of military and diplomatic communications in times of emergency, and at the same time to meet the growing peacetime demand for rapid and dependable international service. Plans for 1953 called for the construction and installation of six additional repeaters.

(See also FEDERAL COMMUNICATIONS COMMISSION.)

(W. P. MA.)

Telephone. According to the latest available information, there were approximately 79,000,000 telephones in operation in the world during 1952. More than 57% of these were in the United States.

Ceremonies celebrating the 25th anniversary of the opening of transatlantic telephone service between New York city, N.Y., and London, Eng., were held Jan. 7, 1952. By that time 96% of the world's telephones had been interconnected. Overseas telephone service was also being used by about 100 vessels on the high seas. Among the places added to the telephone network during 1952 were the Azores, Madeira, Cape Verde Islands, Angola, Mozambique, Lebanon, Madagascar, Dakar and Iraq.

The year also marked the 25th anniversary of the first public demonstration of television over telephone wires.

As the Bell system's radio relay and coaxial cable network was extended, 12 more U.S. cities were brought into the national television network—Dallas, Tex., Denver, Colo., Fort Worth, Tex., Houston, Tex., Miami, Fla., New Orleans, La., Oklahoma City, Okla., Phoenix, Ariz., Portland, Ore., San Antonio, Tex., Seattle, Wash., and Tulsa, Okla. (See also TELEVISION.)

Going forward with their largest construction program since 1948, the Bell Telephone companies continued during 1952 to meet a growing demand for service. A change in service, to a line with fewer parties or to an individual line, was made for more than 660,000 customers during the first nine months of the year. An important part of the new construction program was the conversion of manually operated telephones to dial operation. At the end of August, 78.6% of the telephones served by Bell companies were dial operated.

Long-Distance Dialing.—The trial begun by the Bell system

Table II.—Bell System Statistics

(As of Sept. 1, 1952)	
Number of telephones	38,655,000
Dial telephones	30,400,000
Mobile telephones	12,000
Miles of wire:*	
Exchange wire	125,957,000
Toll wire	28,217,000
Total	154,174,000
Number of central offices	8,795
Average daily conversations	148,082,000
Route miles of radio relay	6,500
Route miles of coaxial cable	9,000
Channel miles of television transmission facilities	28,000
Total investment in plant and equipment	\$11,592,000,000

*As of July 1, 1952

on Nov. 10, 1951, in Englewood, N.J., on the dialing of long distance calls by customers was continued during 1952. Indications were that customer long-distance dialing was practical and would make service faster and more convenient.

The Englewood customers were able to dial directly to telephones in cities as far away as San Francisco, Calif. Automatic accounting equipment recorded the charges when a subscriber dialed a long-distance call, summarized the call information and printed it in final form on the customer's monthly bill. Cross-country calls by this method could be made in a matter of seconds.

Operator Dialing.—The operator dialing method of handling calls, which had been rapidly developing with the growth of dial systems, was improved and extended in 1952. Four out of ten of the Bell system's long-distance calls were being handled by operator dialing. With this system calls were handled by an originating long-distance operator who, in most cases, reached the called telephone in a distant city without the help of other operators along the route or at the destination. This was done by means of dial codes based on a universal numbering system and master dial switching systems.

During the year major dial switching centres for long distance calls were placed in operation in Omaha, Neb., Houston, Tex., and Cincinnati, O. Each of these centres was the core of a dialing network extending over a large area. The interconnected networks, together with other smaller systems, enabled operators to dial straight through to distant telephones in more than 1,600 U.S. cities and towns.

Rural Service.—The telephone companies continued during 1952 to provide telephone service wherever it was needed in the rural areas of the country. In July the number of Bell system rural area telephones added since World War II hit the 2,000,000 mark. Continued progress to improve the quality of rural service was made through reductions in the number of subscribers on rural lines and improvements in telephone ringing.

Defense and Military Developments.—A telephone service vital to U.S. defense was instituted during 1952 when the Bell system, at the request of the army anti-aircraft command, began furnishing all the communication facilities required for its operation. The wire communication circuits being installed consisted of numerous multistation private lines which were used between an operations control centre and strategic sites. The Bell system also was authorized to back up these wire facilities with the installation of radio communication between control centres and gun locations. Pilot installations were made and intensive manoeuvres staged to test the equipment prior to completing the network.

Another development of 1952 was a new military field telephone far superior to the one used in World War II. The 1952 version of the signal corps telephone was designed by the Bell Telephone laboratories and manufactured by the Western Electric company. It was lighter, smaller and more rugged. It operated for several miles without batteries and could withstand near-by gun blasts. It could be submerged in water without effect and could be used by a soldier wearing heavy arctic mit-

Table I.—U.S. Telephone Statistics

(As of July 1, 1952)

Number of telephones	46,880,000
Bell system telephones	38,383,000
Non-Bell telephones	8,497,000
Average daily conversations	182,000,000
Total investment in plant and equipment	\$12,740,000,000

tens. It would work effectively at altitudes of more than 10,000 ft. and at temperatures from 130° F. to -40° F. (See also FEDERAL COMMUNICATIONS COMMISSION; RURAL ELECTRIFICATION.) (C. F. CG.)

Television. Despite limitations on its development because of the freeze on construction of new stations imposed by the Federal Communications commission (FCC) in late 1948, television in the United States reached the proportions of a \$3,000,000,000-a-year business. The FCC on April 13, 1952, issued its sixth report and order lifting the freeze, effective June 2, 1952. As of that date, 109 television broadcasting stations were on the air, operating on 12 channels in the very high frequency (VHF) portion of the radio spectrum and their combined service areas included about 24,000,000 homes, of which nearly 18,000,000 had television receivers.

The commission's action made provision for additional stations within the 12 VHF channels and established 70 new channels in the ultra high frequency (UHF) band. Seventeen of these were "flexibility" channels to provide for future expansion. A table of assignments was adopted allocating specific channels to communities so as to make provision for more than 2,000 stations in the United States and its territories. The commission's order authorized power increases for existing and contemplated stations. The table of assignments included provision for 233 noncommercial educational television stations to be supported by educational and philanthropic interests.

By Sept. 1 the commission had processed 177 of the applications filed for construction permits for new stations, granting 11 in the VHF and 32 in the UHF channels and ordering hearings on the remainder. A total of 737 applications were on file awaiting commission action. Actual construction was begun on several new stations and in July, KFEL in Denver, Colo., went on the air as the first post-freeze TV station.

Ultra High Frequency Television.—Extensive use was made of the RCA-NBC experimental television station, KC2XAK, at Bridgeport, Conn., in operation until August, as a proving ground by means of which a large number of television receiver manufacturers tested their combination UHF-VHF receiver and UHF converter designs. The KC2XAK transmitter was sold to the Empire Coil company and was transported to Portland, Ore., where in September, as KPTV, it became the first commercial UHF station. Field tests were conducted and the results proved more favourable than anticipated. The success of this station resulted in a flood of orders for UHF transmitting equipment. Low-powered UHF transmitters were available and there was assurance that several manufacturers would have transmitters of 5- to 12-kw. power in full-scale production by the year's end.

The operation of KPTV aroused great interest in both government and industry since it was recognized that only through utilization of UHF channels could television become truly nation-wide in scope. It was estimated that by the end of 1955 television service would be available to approximately 95% of all United States families.

Colour Television.—The order of the director of defense mobilization issued in late 1951 banning the production of commercial colour television receivers was modified on June 24 so as to permit manufacture of colour equipment but subject to certain restrictions. Production of home colour receivers was not undertaken by any of the television receiver manufacturers. CBS did not resume television broadcasting in colour.

The National Television System committee (NTSC) continued its activity in field testing of proposed compatible colour television standards. Experimental tests of these standards over existing commercial television stations during normal program

hours were authorized by the FCC although its existing policy permitted such tests only after regular broadcasting hours. The commission continued to receive full information on the NTSC tests, in keeping with the caveat attached to its 1950 order that its doors were still open for consideration of any proposed system meeting its specified criteria.

Television Receivers.—Effects of the long-continued freeze on the construction of new television stations were reflected in receiver production for the first eight months of 1952, which stood on Sept. 1 at 2,939,144 units, with the total for the year, however, expected to reach 5,500,000 or approximately 200,000 sets more than the number produced in 1951. Total television sets in use reached 18,724,000 by Sept. 1.

In television receivers the trend toward larger picture tubes continued, the majority of receivers using 17-in. or larger sizes. Manufacturers were ready to place on the market, in phase with the construction of UHF stations, converters and combination UHF-VHF receivers.

Television receiver prices held relatively constant throughout the year. These prices were averaging 15% or more below the ceilings established by the Office of Price Stabilization. This resulted in a removal of the ceilings, with a continuation of only a spot check as a means of control.

During 1952 there were approximately 100 manufacturers of TV receiving sets, including assemblers and kit makers. There were 37 manufacturers of cathode ray or picture tubes, 11 of whom also produced receiving-type tubes.

Television Broadcasting.—The 109 stations operating on regular schedules served 64 metropolitan areas. The commission reported during the year that 95 of these stations were operating at a profit. In the larger metropolitan areas operations were invariably profitable and billings showed a marked increase. Radio billings showed reductions, though not in proportion to the television gains, and rate cuts averaging 14% went into effect in the operation of the CBS and NBC radio broadcasting networks.

The most important addition to the television network facilities in 1952 was the extension by the American Telephone and Telegraph company of its radio-relay and coaxial-cable systems so as to reach major communities in the south, southwest and northwest. Thus, by the time the national political conventions were held in Chicago, 107 television stations in 65 cities were interconnected by 29,500 mi. of network. By the end of 1952, the Bell system television network was expected to serve 113 television stations in 71 cities, utilizing 31,000 mi. of network.

Of outstanding significance in television broadcasting during the year was the coverage of the national political conventions, in which all television stations, with the exception of one which lacked interconnection, participated. New telecasting techniques, including the first operational use of the "walkie-lookie," brought audiences of 65,000,000 into intimate touch with events as they occurred on the convention floor.

Proposals with regard to the televising of judicial and congressional proceedings raised national policy issues debated widely by bar associations, committees of congress and civic groups.

The National Collegiate Athletic association made available for broadcasting 11 major football games for the 1952 season, and the National Broadcasting company purchased the television rights for a figure in excess of \$2,500,000. Blackouts continued with respect to championship prize fights. Legal and economic issues relating to the telecasting of major sports events remained unsettled.

During the year an increasing number of feature programs were originated from films produced specifically for television.

A civil antitrust complaint was filed in Los Angeles, Calif.,

by the U.S. department of justice charging with conspiracy to restrain interstate commerce 12 motion-picture firms producing and distributing 16-mm. feature films of the type used for television broadcasting. There were no major changes in the situation with respect to the availability to television of feature motion pictures.

In Jan. 1952 the National Association of Radio and Television Broadcasters adopted its television code, effective March 1, 1952. Subscribers to this code agree to advance education and culture through television programming and to accept responsibility with respect to program material in the interest of decency and decorum.

Theatre Television.—Interest in theatre television continued and by September 75 theatres had either installed or were installing projection equipment. Sporting events of wide public interest were presented exclusively by theatre television through leased interconnection facilities. The competition between theatres and television broadcasters in the "live" showing of events of national interest held the hope for the motion-picture industry of reducing the severe inroads of television on theatre attendance.

By far the largest network of theatres to carry a major sports event was used when 50 theatres presented the Jersey Joe Walcott-Rocky Marciano heavyweight championship fight. An audience totalling 125,000, which paid about \$400,000 at the box office, was reported. Many thousands of fans were turned away for lack of seats. The first drive-in theatre to utilize theatre television equipment, in Rutherford, N.J., was among the 50. A standard RCA theatre television system was used, with the equipment being mounted on a truck 125 ft. from the screen to provide a 24- by 36-ft. picture. An audience estimated at between 15,000 and 20,000 persons viewed the pictures. As a result of this drive-in theatre's success, a new field for theatre television operations was envisioned.

The hearing announced by the FCC in April 1951 to determine whether or not a band of microwave radio frequencies should be allocated to theatre television for operation of its own network interconnections began in Oct. 1952, with the conclusion of the testimony scheduled for early 1953.

Development work on theatre colour television continued during the year. Twentieth Century-Fox gave a series of colour theatre television demonstrations using the Eidophor, a device started 13 years before by Fritz Fischer working at the Swiss Federal Polytechnical institute in Zürich. The Eidophor differs from the conventional television picture tubes in that the source of light is an arc lamp such as is used in motion-picture projectors. A cathode ray beam is employed to control the light intensity on the projection screen. In the Twentieth Century-Fox colour demonstrations, a field sequential colour system using a rotating colour filter disk was employed. The pictures were 11 by 15 ft. with a high-light brightness of approximately five foot-lamberts.

Subscription Television.—Zenith Radio corporation, sponsor of a system called "Phonevision," early in the year filed a petition before the commission seeking approval of the principle of subscription television and modification of rules of the commission so as to permit this type of operation. A public hearing was requested on which the commission had not taken action.

Other subscription television projects which were in the development and testing stages were the "Subscribervision" system of the Skiatron corporation of New York city and the "Telemeter" system of the International Telemeter corporation and Paramount Pictures.

Wired Television.—The year saw substantial growth of wired television or "community-antenna" systems, which brought television programs into smaller towns and cities shadowed out

from the good service range of the radio transmissions of existing stations by intervening hills or mountains. A Community Antenna association was formed, with more than 100 member companies, and an estimated 80 or more installations were in operation or under construction. "Telemeter" had undertaken to conduct tests of its subscription method, operated in conjunction with wired television in Palm Springs, Calif. The number of wired antenna and distribution systems for receivers in hotels and apartment houses also showed a steady increase.

Other Developments.—Other developments relating to television included the serving of subpoenas on 17 radio and television manufacturers as a result of action taken by the department of justice in an effort to determine whether antitrust laws were being violated.

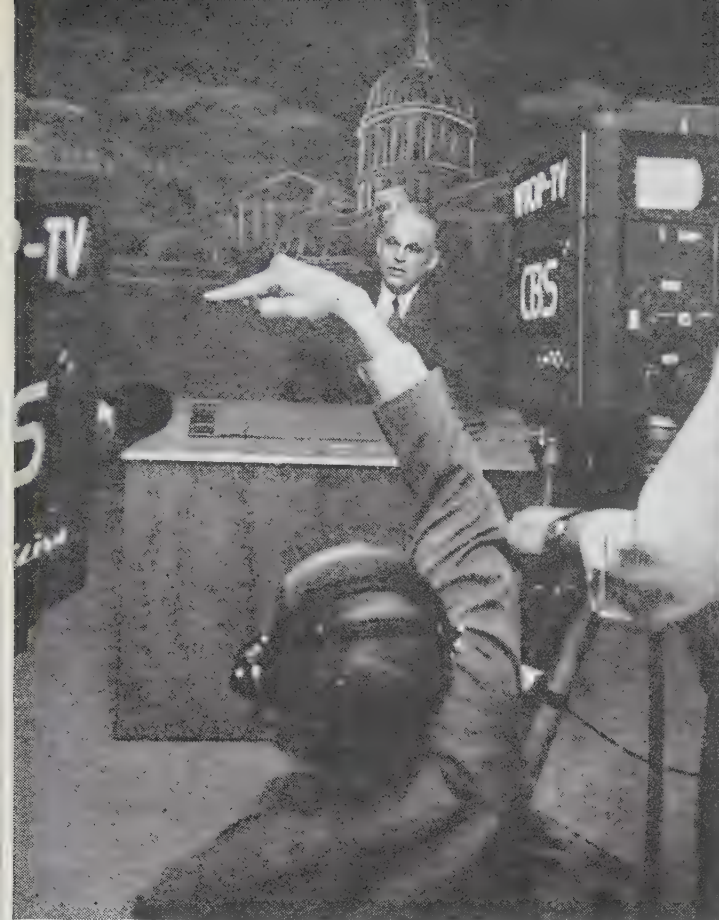
Of striking significance were the applications of the techniques of television in other fields of science including radar design, pictorial communications and electron microscopy. Industrial applications of television, such as in the control of processes involving hazard to life, illustrated the versatility of the medium and its great usefulness in fields other than entertainment. (See also ADVERTISING; ATOMIC ENERGY; FEDERAL COMMUNICATIONS COMMISSION; HUMOUR OF 1952; MARINE BIOLOGY; MOTION PICTURES; RADIO.) (G. L. Bs.)

Other Countries.—Rapid progress was made during 1952 in the spread of television through western Europe. Radiodiffusion et Télévision Françaises opened a second station at Lille and began work on a new transmitter at Strasbourg. The experimental service in the Netherlands was developed further. The greatest advance was made in northwest Germany, where Nordwestdeutscher Rundfunk completed a network of five transmitters, including one at Berlin. Radio Italiana began a public television service during the summer, thus initiating a five-year plan for a nation-wide network. Plans were also laid for television services to start in Belgium and Switzerland in 1953. Only in such countries as Norway, Sweden and Portugal, where the physical nature of the country presented serious technical and financial obstacles to the operation of television, was little progress made. Except in the U.S.S.R., where a regular service was in operation from stations at Moscow, Leningrad and Kiev, no advance was made in eastern Europe. An almost universal feature of television services in the planning stage in all parts of Europe was the adoption of a 625-line standard of definition. Of the two countries which had a fully established service, however, France continued to employ an 819-line standard and Great Britain a 405-line standard.

In Britain television transmitters at Kirk of Shotts, Scot., and at Wenvoe, Wales, were brought into operation during 1952. With them the British Broadcasting corporation's plans to provide national coverage with five main transmitters were completed. By August television was available to 78% of the population of the United Kingdom.

Programs reflected this expansion. Thus "London Town," in its third year, was joined by a program very similar in treatment, called "About Britain." There was a transmission from Glyndebourne when Verdi's *Macbeth* was performed in the opera house, in a version produced for television. Television newsreel, ranging over the whole country and abroad, was extended to five complete editions every week and maintained its place as the most consistently popular program. The funeral of George VI and the proclamation of Elizabeth II were fully covered. A series called "Special Enquiry" started in the autumn of 1952, dealing with problems of urgent national importance, but in country-wide rather than metropolitan terms.

A group of broadcasts was presented during July from Paris. Fourteen programs, varying from cabaret shows and street scenes to a visit to the Louvre, were arranged jointly by the

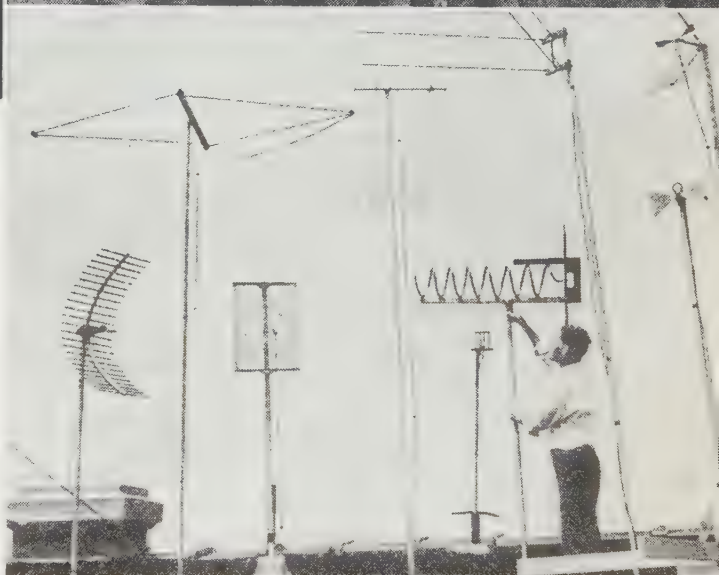


Above, left: SEN. ROBERT S. KERR of Oklahoma, an aspirant for the Democratic presidential nomination in 1952, at a school for political candidates set up by station WTOP-TV in Washington, D.C. The director is shown indicating a switch in cameras



Above, right: PROMPTING CARDS used by TV performers and political speakers in 1952

Right: VARIETY OF TV rooftop antennas designed by engineers of the RCA laboratories at Stratford, Conn., for use in receiving television broadcasts to be transmitted from ultra high frequency stations



Below: MODEL of the first unit of Television city, a 25-ac. community to be devoted exclusively to television by the Columbia Broadcasting system in Hollywood, Calif. Regular broadcasting from this initial unit began in Oct. 1952



B.B.C. and by Radiodiffusion et Télévision Françaises. The programs were spread out over eight days and transmitted simultaneously to audiences in France and the United Kingdom. The picture was converted en route (at Cassel) from the French 819 lines to the British 405 lines.

In 1952 sales of television receivers in Great Britain outstripped sound radio sales for the first time, in spite of purchase tax at 66 $\frac{2}{3}$ % and restrictions on instalment purchase. A rate of production of 60,000 to 70,000 television sets per month was maintained in Britain during the year.

In Canada a regular television service began early in September with two Canadian Broadcasting corporation stations: CBLT in Toronto and CBFT in Montreal. A start was made on plans for a third station in Ottawa. In the initial period both stations were operating for about three hours an evening, CBFT carrying programs in French and English.

Tellurium: see MINERAL AND METAL PRODUCTION AND PRICES.

Tennessee. A south central state, 16th to enter the union, Tennessee is called the "Volunteer state." Land area 41,797 sq.mi., water area about 447 sq.mi. Population (1950): 3,291,718; rural 1,839,116, urban 1,452,602, rural farm 1,016,204; white 2,760,250, nonwhite 531,468.

The population of principal cities in 1950: Nashville (capital) 174,307; Memphis 396,000; Chattanooga 131,041; and Knoxville 124,769.

History.—The state commissioners, appointed by Gov. Gordon Browning, were in 1952: agriculture, Edward Jones; conservation, C. P. Swan; education, James A. Barksdale; finance and taxation, J. M. Dickinson; highways and public works, Herbert McKee; institutions, Houston Brown; public welfare, J. O. McMahan; insurance and banking, M. O. Allen; labour, J. L. Case; public health, R. H. Hutcheson; safety, Sam K. Neal; employment security, E. K. Wiley. Railroad and public utility commissioners elected by the people were: Hammond Fowler, John Hammer and J. B. Avery.

The constitutional officers were: James H. Cummings, secretary of state; W. N. Estes, state treasurer; Cedric Hunt, state comptroller.

During the year, the University of Tennessee Junior college at Martin became a four-year affiliate of the university. A proposed convention for constitutional amendment was approved. The Tennessee Valley authority began constructing a large steam plant to generate electricity near Rogersville in Hawkins county.

Education.—Enrolment in elementary schools in 1951 was 549,503, an increase of 1.9% over that of 1950. High school enrolment was 126,131, an increase of 4.8%. Total net enrolment in 4,432 schools was 675,634. There were 4,065 county and 367 city schools, 3,521 white and 911 Negro. The total number of teachers was 23,897.

Social Insurance and Assistance, Public Welfare and Related Programs.—In Sept. 1952 the total amount of assistance was \$3,034,307 to 82,139 cases; 59,492 old-age recipients received \$1,951,679; 53,935 dependent children received \$968,691; and 2,851 blind received \$113,938. The increase in payments compared with Sept. 1951 was 2.7%.

There were in 1951-52 seven correctional institutions in the state with expenditures of \$7,170,319. A school was maintained for the blind and deaf, three state hospitals for the insane, a home for the feeble-minded and an industrial school.

Communications.—Of the 65,392 mi. of public road in 1951, 7,862 mi. were state highways; expenditure for construction of highways was \$49,683,248. There were 3,491 mi. of railroad. As of June 1952 there were 56 civilian airports, of which 21 were commercial, 25 municipal, 1 CAA intermediate and 8 private. There were in 1951, 672,168 class A and B telephones in Tennessee, 185,075 business and 487,093 residential. Water-borne commerce on the Tennessee river in 1951 amounted to 3,748,586 short tons; Cumberland river 1,646,527 (1950); Mississippi river 22,058,140 (1950); and 2,938,258 (1950) at the port of Memphis.

Banking and Finance.—In June 1952 there were 74 national banks and 220 state banks; assets totalled \$1,710,038,000 for the national and \$643,017,221 for the state banks; deposits \$1,598,921,000 for the national banks and \$586,241,172 for the state banks. Savings and loan associations in 1951 numbered 40 with assets of \$72,077,935. Federal associations constituted 36 of these with assets of \$71,717,960.

State revenue collected for the fiscal year 1951-52 was \$180,609,405. In 1951 federal aid amounted to \$49,500,000; proceeds from bonds sold, \$12,-

Table I.—Principal Crops of Tennessee

Crop	Indicated 1952	1951	Average 1941-50
Corn, bu.	39,840,000	60,360,000	64,488,000
All hay, tons	1,264,000	1,685,000	2,114,000
Cotton, bales	530,000	534,000	549,000
Cottonseed, tons	211,000	213,000	213,000
Soybeans, bu.	3,654,000	3,202,000	1,603,000
Wheat, bu.	4,370,000	3,022,000	4,405,000
Oats, bu.	5,600,000	4,732,000	5,400,000
Barley, bu.	1,160,000	980,000	1,672,000
Tobacco, lb.	141,530,000	143,214,000	128,139,000
Potatoes, bu.	1,440,000	1,539,000	3,005,000
Sweet potatoes, bu.	1,105,000	990,000	2,944,000
Apples, bu.	551,000	399,000	392,000
Peaches, bu.	450,000	80,000	707,000

Source: U. S. Department of Agriculture.

400,000. Debt outstanding was \$100,197,500, an increase of \$3,507,500 during the year. Receipts increased by \$19,511,029 over 1950, expenditures by \$12,530,439. Of total expenditures of \$245,300,000, \$69,076,717 was for education, \$47,338,089 for highways, \$42,672,410 for welfare and \$22,446,324 for distribution to cities and local governments.

Agriculture.—The gross value of agricultural production in 1951 was \$630,332,000; cash farm income \$522,889,000. Cash income from crops was \$236,996,000, from livestock \$278,887,000 and from government payments \$7,006,000. The value of home consumption was \$107,443,000. The forest area was 12,641,000 ac.

Manufacturing.—According to the 1947 census of manufacturing, 3,346 manufacturing plants employed 221,454 persons, wages and salaries being \$473,211,000. Value added by manufacture was \$957,539,000, led by chemical industries \$162,578,000, food \$132,489,000 and textiles \$121,294,000. (C. E. A.)

Mineral Production.—Table II shows the tonnage and value of those mineral commodities produced in Tennessee in 1949 and 1950, whose value

Table II.—Mineral Production of Tennessee

Mineral	1950 (In short tons, except as noted)		1949	
	Quantity	Value	Quantity	Value
Barite	?	?	13,000	\$ 137,000
Cement (bbl.)	6,663,000	\$14,683,000	5,993,000	12,858,000
Clays	787,000	3,094,000	624,000	2,399,000
Coal	5,070,000	27,360,000	4,172,000	21,895,000
Coke*	243,000	?	213,000	?
Ferroalloys*	93,000	7,659,000	54,000	3,924,000
Lime	98,000	958,000	117,000	1,108,000
Phosphate rock	1,550,000	10,028,000	1,503,000	9,066,000
Sand and gravel	4,153,000	4,411,000	4,056,000	4,054,000
Stone	7,979,000	13,802,000	7,614,000	13,027,000
Zinc	35,000	10,033,000	30,000	7,387,000
Other minerals . . . . .	...	5,325,000	...	5,402,000
Total		\$89,694,000		\$77,333,000

*Values for processed materials are not included in the totals.

†Value included with other minerals.

exceeded \$100,000. Data for 1951 were not yet available. Tennessee ranks 1st among the states in the production of pyrite and 2nd in phosphate rock, and stands 26th in value of mineral output, with 0.76% of the U.S. total.

Tennessee Valley Authority. The demand for power for national defense, and particularly for expanded operations at the U.S. Atomic Energy commission's plants at Oak Ridge, Tenn., and Paducah, Ky., was the major factor leading TVA to embark upon a vast expansion of electric generating capacity which would bring the installed capacity of the system to more than 9,600,000 kw. early in 1955. Installed capacity at the end of 1952 was 4,664,000 kw., of which more than 1,100,000 kw. had been added during the year.

The congress provided funds to commence construction of 2,781,000 kw. of new capacity, chiefly in steam-electric generating stations; of this, 1,710,000 kw. was earmarked to supply power for the atomic energy plants. It included two new steam plants, John Sevier and Gallatin, bringing to seven the number of steam plants TVA had under construction. Six additional generating units were approved for Shawnee steam plant, being built to supply the Paducah Atomic Energy commission plant; with a total installation of 1,350,000 kw. in ten units, this would be the largest steam-electric generating station in the U.S.

The integrated system, which includes hydro plants of the Aluminum Company of America on the Little Tennessee river and the U.S. army engineers on the Cumberland river, generated about 20,000,000,000 kw.hr. in the fiscal year 1952, and additional power was obtained through purchase and interchange.

TVA's total operating revenues were \$95,000,000 and net operating revenues were \$25,839,000, representing a return of



WORKMEN CHANGING SHIFT at a steam-generating plant being built by the Tennessee Valley authority to furnish electric power to an atomic energy installation under construction at nearby Paducah, Ky., in 1952

4.7% on the net average power investment. Combined revenues of the 96 municipal and 50 co-operative systems which distribute TVA power totalled \$103,000,000 and net income was \$17,400,000. They sold 8,900,000,000 kw.hr. of power to 1,226,000 consumers.

No major floods occurred on the Tennessee during the first three quarters of the year, but reduction of a relatively minor crest on the Ohio river in March was estimated to have averted \$400,000 in flood damages. Estimated savings in flood damages since TVA commenced operation had amounted to \$51,266,000, while TVA flood control costs amounted to \$22,200,000. Recreation improvements and equipment on TVA lakes were valued at \$31,300,000 at the end of 1951, compared with \$12,400,000 in 1947. At its chemical plants TVA produced 14,800 tons of fused tricalcium phosphate, 32,500 tons of calcium metaphosphate, 132,200 tons of concentrated superphosphate and 197,200 tons of ammonium nitrate.

The board of directors consisted in 1952 of Gordon R. Clapp, chairman, H. A. Curtis and Raymond L. Paty. Paty was appointed by the president during the year to succeed James P. Pope, who retired upon completion of his term of office. (See also DAMS; ELECTRICAL INDUSTRIES; PUBLIC UTILITIES.)

(K. R. K.)

Tennis. Australia with its winning Davis Cup trio, Frank Sedgman, Ken McGregor and Mervyn Rose, dominated the tennis scene in 1952. After their Davis Cup victory over the U.S. in the 1951 challenge round at Sydney, the Australian players captured all but one of the major singles titles, won three of the four most important international doubles championships and shared in the fourth.

Only Sedgman's defeat by Jaroslav Drobny, exiled Czech, in the final of the French championship and the loss by Sedgman

and McGregor of their U.S. doubles title to their Davis Cup teammate Rose and Vic Seixas, top U.S. player, prevented a clean sweep of the world's foremost tennis events by the Aussies.

In January McGregor captured the Australian title, defeating Sedgman in the final. Later in Europe, Sedgman, after his loss to Drobny at Paris, avenged that setback by defeating Drobny for the Wimbledon title. In September at Forest Hills, N.Y., Sedgman successfully defended his championship, beating a tired 38-year-old Gardnar Mulloy easily in the final, 6-1, 6-2, 6-3.

Two surprises marked the season's performance by the U.S. players. One was Richard Savitt's failure to maintain the pace he set the year before when he won the Australian and Wimbledon titles. The other was the unusual record of Mulloy, who after 18 years of striving, reached the final round of the U.S. singles championship for the first time. Mulloy won a number of U.S. tournaments and the Pan-American singles in Mexico in October in addition to scoring victories for the U.S. in Davis Cup play against Japan and Cuba, serving as playing captain in the latter match.

After defeating Japan and Cuba, the U.S. won the American zone final against Canada and thus qualified for the interzone final to be played in Sydney, Austr., Dec. 18-20, 1952. The U.S. team for Australia was to include Seixas, playing captain; Straight Clark, Hamilton Richardson and, if made available by the navy, Tony Trabert.

Altogether 29 nations challenged Australia for the Davis Cup. Twenty-three nations competed in the European zone, the winner being Italy. Only one challenger, India, entered the newly established Eastern zone. These two nations were to meet in Brisbane, Austr., Dec. 11-13 and the winner would face the U.S. the following week for the right to meet Australia in the challenge round at Adelaide, Austr., Dec. 29-31.

The U.S. women players, led by 17-year-old Maureen Connolly, again ruled women's tennis. The U.S. Wightman Cup team of Miss Connolly, Doris Hart, Shirley Fry and Louise Brough, captained by Mrs. Richard (Midge) Buck, journeyed to England and once again defeated the English team of Mrs. Jean Walker-Smith, Mrs. Jean Quertier Rinkel, Mrs. Joy Gannon Mottram, Susan Partridge, Pat Ward and Helen Fletcher, captained by Mrs. D. C. Shepherd-Baron. Miss Connolly, playing in the English championships for the first time, won the singles title at Wimbledon, defeating her teammate Miss Brough, a three-time Wimbledon singles champion. Returning to the U.S., Miss Connolly repeated her 1951 victory at Forest Hills. The young champion defeated Miss Hart rather easily in the final after a stubborn fight with Miss Fry in the semifinal round. Miss Hart, who won the French championship and Miss Fry, who was runner-up, proved invincible in doubles, retaining their French, Wimbledon and U.S. titles. Miss Hart also was a triple winner in mixed doubles with Sedgman. For the second successive year they won the French, Wimbledon and U.S. championships.

(E. S. Br.)

Terramycin: see CHEMISTRY; CHEMOTHERAPY.

Texas. A west south central state of the United States, Texas was admitted to the union by annexation Dec. 29, 1845; it is known as the "Lone Star state" from the single star in the flag of the Texas republic, 1836-45. Land area, 263,513 sq.mi.; inland water, 3,826 sq.mi.; total 267,339 sq.mi. Population (1950 census) 7,711,194, which was 20.2% greater than in 1940; (est. July 1, 1951, 7,991,000). Urban population, 4,838,060 or 62.7%; rural, 2,873,134 or 37.3%. Total white population (preliminary) 6,825,000 or 88.5%; nonwhite 886,000 or 11.5%. Capital: Austin, with 132,459 population in 1950. Other cities ranked by population in 1950: Houston 596,163;

Dallas 434,462; San Antonio 408,442; Fort Worth 278,778; El Paso 130,485; Corpus Christi 108,287; Beaumont 94,014; Waco 84,706; Amarillo 74,246; Lubbock 71,747; Wichita Falls 68,042.

History.—Political interest in 1952 centred principally in the issue of federal or state ownership of the tidelands (submerged coastal lands) claimed by Texas as part of its public-school domain. Because of Pres. Harry S. Truman's veto of a congressional resolution quitclaiming these lands to the states, much opposition was aroused. Incumbent Gov. Allan Shivers, antiadministration, won in the Democratic primary over Ralph Yarborough, proadministration, 829,829 to 485,652. Tom Connally, who had served as United States senator since 1929, did not stand for re-election. State Atty. Gen. Price Daniel, antiadministration, defeated Rep. Lindley Beckworth of the 3rd congressional district, proadministration, 936,875 to 284,967. Democratic nomination to a state office in Texas is tantamount to election. The state Democratic convention in Amarillo was controlled by the anti-Truman forces which first proposed to nominate Gen. Dwight D. Eisenhower on a "Texas Democratic ticket" but did not do so because of legal obstructions; however, it officially recommended support of General Eisenhower for the presidency. Two constitutional amendments adopted by the legislature in 1951 were voted on and approved by the people on Nov. 4, 1952. One set up a state medical education board and a state medical scholarship fund; and the other permitted cities, towns and villages to provide workmen's compensation insurance.

The principal state officials for the biennium beginning Jan. 1, 1953, and ending Dec. 31, 1954, were: governor, Allan Shivers; lieutenant governor, Ben Ramsey; attorney general, John Ben Shepperd; comptroller of public accounts, Robert S. Calvert; treasurer, Jesse James; state commissioner of education, J. W. Edgar; commissioner of agriculture, John C. White; commissioner of the general land office, Bascom Giles.

Education.—The public-school system during 1952-53 consisted of 959 independent and 1,178 common school districts, according to the state department of education. The census of total scholastics, ages 6-17, showed 1,633,911. The department's October estimate of enrolment for 1952-53 was 1,511,367; estimated average attendance, 1,277,281; estimated number of high school graduates, 44,171. The state's per capita apportionment, 1952-53, was \$66 or a total of \$107,838,006; equalization fund and other contributions of the state (est.), \$213,500,000; local contributions (est.), \$107,500,000, exclusive of servicing bonded debt. Number of classroom teachers (1951-52) was 54,340; average teacher's salary, \$3,222.

Social Insurance and Assistance, Public Welfare and Related Programs.—Average monthly payments for the fiscal year ended Aug. 31, 1952, were as follows: \$7,335,815.56 to 220,490 old-age assistance recipients for an average of \$33.27; \$226,492.81 to 6,061 aid to the blind recipients for an average of \$37.37; \$833,356.50 to 16,709 aid to dependent children families on behalf of 48,249 children for an average of \$49.87 per family or \$17.27 per child. Total expenditures for public welfare for all purposes from the state budget for the fiscal year ended Aug. 31, 1952, were \$124,864,066.

Transportation and Communication.—Texas public road mileage Oct. 1, 1952, was 108,603; state-maintained, 46,756, and county-maintained, 151,847. Expenditures from the highway fund for the fiscal year ended Aug. 31, 1952, totalled \$132,430,788. Motor vehicle registration, 1952 (prelim.), was 3,252,000. There were 15,500 mi. (est.) or first main-line railway track and 6,200 mi. (est.) of auxiliary track in Texas as of Jan. 1, 1952, according to the state railroad commission. Eleven air lines were serving Texas Oct. 1, 1952. There were approximately 620 airports of all classes. Total number of telephone stations in operation, Oct. 1, 1952, was 2,097,353. There were 215 radio stations in Texas Oct. 1, 1952, including 185 AM, 24 FM and 6 TV.

Banking and Finance.—State government receipts for the year ended Aug. 31, 1952, were \$682,835,693; total expenditures, \$592,260,809. Principal receipts were from gross receipts and production (largely petroleum) taxes, \$160,157,763; highway motor fuel tax, \$120,244,040; ad valorem tax, \$24,256,967; cigarette tax, \$35,284,873; automobile licences, \$36,064,861. Principal expenditures were for education, \$238,961,576; highways, \$132,430,788; public welfare (pensions), \$124,864,066; charitable and correctional, \$31,251,696. The state's bonded debt was \$104,100,000; total debt of all civil subdivisions, 1949, was \$948,862,623.54. On Jan. 1, 1952, there were 443 national and 463 state banks; total 906. National bank deposits were \$6,501,343,000 and resources \$6,951,848,000. State bank deposits were \$1,513,998,000 and resources \$1,628,720,000. Total bank deposits \$8,015,341,000; total resources \$8,580,568,000.

Agriculture.—Harvested acreage of 1952 crops (Oct. 1 report of the U.S. department of agriculture) was 22,329,000. A severe drought extending throughout the summer cut down acreage and limited production of most crops.

The number and value of livestock on farms, Jan. 1, 1952, were as

Table I.—Leading Agricultural Products of Texas

Crop	Indicated 1952	1951	Average 1941-50
Cotton lint, bales	3,600,000	4,074,000	3,020,000
Cottonseed, tons	1,620,000	1,833,300	1,730,000
Wheat, bu.	40,380,000	17,307,000	60,347,000
Sorghum for grain, bu.	38,038,000	71,085,000	79,096,000
Corn, bu.	39,117,000	42,143,000	56,861,000
Rice, 100-lb. bags	13,402,000	12,408,000	8,668,000
Peanuts, lb.	90,500,000	118,300,000	317,066,000
Hay, tons	1,442,000	1,456,000	1,550,000
Flaxseed, bu.	978,000	75,000	737,000
Oats, bu.	21,952,000	8,145,000	28,263,000
Barley, bu.	900,000	518,000	3,649,000
Tomatoes, bu.	1,750,000	2,030,000	2,227,000
Potatoes, bu.	2,040,000	2,204,000	4,402,000
Sweet potatoes, bu.	1,740,000	1,365,000	4,855,000
Pecans, lb.	33,000,000	5,700,000	30,415,000
Peaches, bu.	346,000	696,000	1,327,000

Source: U.S. Department of Agriculture.

follows: all cattle, 8,940,000, valued at \$1,314,180,000; milk cows only, 1,053,000, valued at \$205,335,000; hogs 1,645,000, valued at \$35,532,000; sheep, 6,176,000, valued at \$114,706,000; goats, 2,099,000, valued at \$18,051,000; horses, 321,000, valued at \$9,309,000; mules, 96,000, valued at \$2,880,000; chickens, 22,992,000, valued at \$27,590,000; turkeys, 549,000, valued at \$3,184,000. Total net value, all livestock, was \$1,525,432,000.

Manufacturing.—Total number of wage and salary workers in the manufacturing industries in Aug. 1952 was 421,200, according to the Texas employment commission. Of these 199,600 were in durable goods industries and 221,600 in nondurable goods industries. Principal employment in durable goods industries was as follows: transportation equipment, 53,700; machinery, except electric, 32,400; lumber and wood products, 31,900. In nondurable goods: food, 61,700; petroleum products, 47,800; chemicals, 36,000. Increase in industrial employment from 297,053 in 1947 (last census) to 421,200 in 1952 indicated an increase from \$1,727,464,000 value added by manufacture in 1947 to \$2,450,000,000 in 1952.

(S. McG.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in Texas in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Texas ranks first among the states in the production of petroleum, natural gas and sulphur, is third in gypsum and cement and has the only commercial production of helium in the world. Texas stands first among the states in the value of mineral production, with 22.55% of the U.S. total, by virtue of an output of petroleum and natural gas that accounts for well over 90% of the state total.

Table II.—Mineral Production of Texas

(In short tons, except as noted)

Mineral	Quantity	Value	Quantity	Value
	1949		1950	
Cement (bbl.)	14,742,000	\$33,409,000	17,282,000	\$39,678,000
Clays	1,235,000	3,002,000	1,454,000	3,577,000
Coke	497,000	?	686,000	?
Gypsum	843,000	2,179,000	1,076,000	2,772,000
Helium (000 cu. ft.)	52,000	689,000	81,000	1,028,000
Iron ore	636,000	?	1,332,000	?
Lime	174,000	1,739,000	216,000	2,074,000
Magnesium*	13,000	5,321,000	16,000	8,879,000
Natural gas (000 cu. ft.)	2,588,921,000	118,832,000	3,126,402,000	146,941,000
Natural gasoline (bbl.)	47,327,000	138,924,000	54,007,000	156,786,000
Petroleum (bbl.)	744,834,000	1,932,050,000	829,874,000	2,147,160,000
Petroleum gases (bbl.)	29,704,000	45,108,000	39,643,000	50,266,000
Salt	1,641,000	2,420,000	1,852,000	2,847,000
Sand and gravel	14,998,000	13,468,000	17,972,000	15,708,000
Stone	4,158,000	5,290,000	4,893,000	5,580,000
Sulphur	4,119,000	66,208,000	4,758,000	80,300,000
Other minerals	...	16,475,000	...	19,233,000
Total	...	\$2,379,793,000	...	\$2,673,950,000

*Values for processed materials are not included in the totals.

†Values included with other minerals.

Textile Industry. United States.—The reaction of the textile industry in the United States to the outbreak of the Korean war, while generally sharp, was not prolonged. By mid-1951, it had become clear that military fibre requirements could, with few exceptions, be met without undue strain, and when civilian consumer demand slackened off at that time, the industry encountered a sharp recession from which it began to recover only in the middle of 1952.

The price reaction to the Korean war by the three principal textile fibres is shown in the table. The cotton price quoted is the average monthly ten-market price for 15/16-in. middling cotton. The wool figure refers to fine-grade territory wool, scoured basis, at Boston, while the rayon data cover 150-denier

Selected Textile Prices

(In cents per pound)

Date	Raw cotton	Raw wool	Rayon yarn
June 1950	33.8	176.0	71.0
July 1950	37.1	179.0	73.4
Dec. 1950	42.6	265.0	77.1
March 1951	45.1	370.0	78.0
June 1951	45.2	290.7	78.0
Dec. 1951	42.2	180.0	78.0
June 1952	40.4	160.0	78.0

viscose yarn.

It will be noted that all three fibre prices rose in the month immediately after the outbreak of hostilities in Korea. Wool prices skyrocketed thereafter to an all-time high of \$3.70 per pound in March 1951 but by mid-1952 collapsed to a point 9% below the June 1950 quotation. Cotton touched a high of 45.2 cents per pound in April 1951, but by June 1952 had declined to 40.4 cents, which was 20% above June 1950. Rayon, which advanced to 78.0 cents per pound in Jan. 1951, remained at that level to mid-1952 for a net increase of 10% over the pre-Korean war price. Particularly in the case of wool, the price movements corresponded closely to the military requirements for the fibre. These requirements were a much larger percentage of total wool consumption than of the other two fibres.

Fibre Consumption Trends.—Total United States consumption of the four major textile fibres (cotton, man-made fibres, wool and silk) was 6,800,000,000 lb. in 1950, 6,900,000,000 lb. in 1951, and was at an annual rate of 6,400,000,000 lb. in the first half of 1952. For comparison, 1939 consumption was 4,500,000,000 lb.

Accompanying the increase in total fibre consumption since before World War II, there was an interesting shift in the relative importance of the fibres. Thus cotton represented 80% of all fibre used by weight in 1939, the man-made fibres accounted for 10%, wool for 9% and silk for 1%. By 1951 the respective shares were 72%, 22%, 6% and nominal.

The same general consumption trend away from wool and cotton and into the man-made fibres was observable in broad weaving. Of a total of 10,100,000,000 linear yards of broad woven goods turned out in 1939, cotton fabrics were 8,300,000,000 yd. or 82%, man-made fabrics were 13%, wool 4% and silk 1%. By 1951 broad woven output had risen by 28% to 12,900,000,000 linear yd. and the fibre shares that year were cotton 79%, man-made fibre 18%, wool 3% and silk nominal.

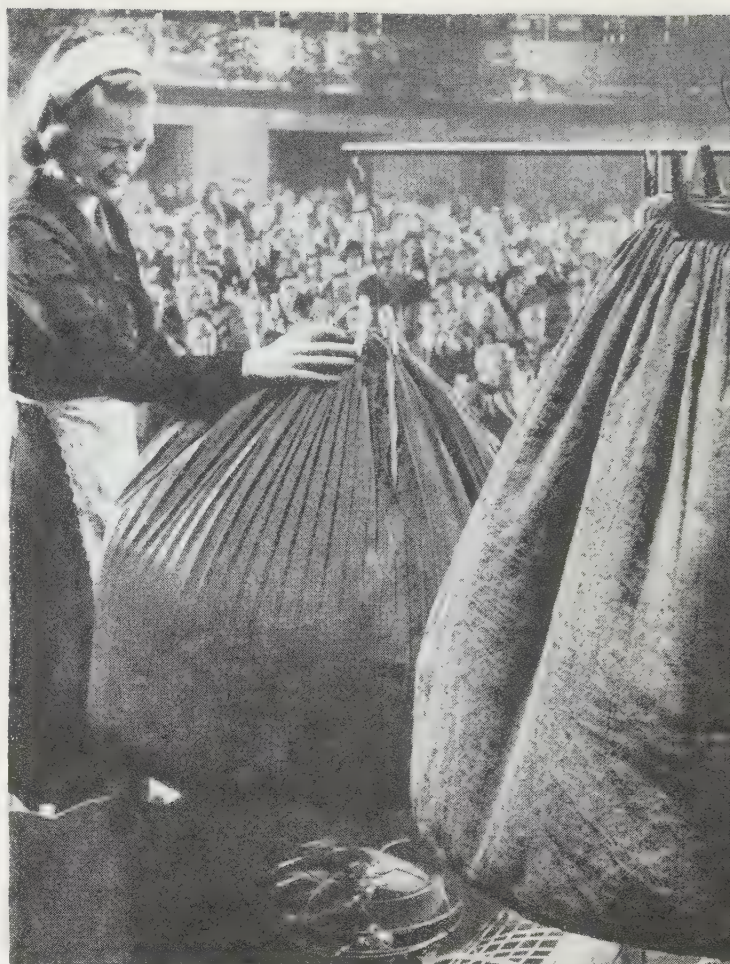
In tire cord and fabric output, the progress of the man-made fibres was extraordinary. Total production in 1939 was 252,000,000 lb., of which rayon and nylon was only 9,000,000 lb. and the balance cotton. By 1951 the man-made fibres represented 316,000,000 lb. or 52% of total tire cord and fabric output, which was 604,000,000 lb. For the first half of 1952, rayon and nylon constituted 63% of the poundage used.

Military uses of cotton in 1951 were estimated at 368,000,000 lb. or 7½% of total consumption. Wool for military uses that year was about 170,000,000 lb. or 35% of all wool consumption, while the man-made fibre figure was 142,000,000 lb. or 9% of its consumption.

Imports and Exports.—For silk the United States is entirely dependent on imports, and about 83% of the 1951 raw wool consumed in the U.S. was obtained from sources abroad. In man-made fibres, on the other hand, only 8% of the total 1951 poundage used was imported. Imports of manufactured and semimanufactured textiles were small in relation to aggregate consumption.

United States exports of all textile products in 1951 amounted to \$1,966,000,000 in value, the bulk of these shipments being raw cotton and manufactured textiles of cotton and man-made fibres. Exports of raw wool and woollen textiles are generally very small as a percentage of the total. Exports of all man-made fibres and manufactures thereof in 1951 were valued at \$226,000,000 or 11% of the total figure.

The Textile Outlook.—After a severe recession lasting from about mid-1951 to mid-1952, the textile industry was anticipating more active business for the balance of the year and into 1953. The heavy inventories prevalent at the beginning of the downturn had been liquidated in most cases by mid-1952 and demand for goods was reported stronger. Perhaps even more im-



PLEATED ORLON and wool skirt (left) and all-wool skirt (right) shown after each had been laundered but not ironed. Orlon, a synthetic fibre developed in the laboratories of E. I. Du Pont de Nemours & Co., was first marketed in quantity in 1952

portant was the prospect of the newer man-made fibres and a consequent stimulation of aggregate demand. Apart from nylon, demand for which continued unabated, much importance for apparel purposes was attached to the acrylic fibres (Acrilan, Orlon, Vinyon N, dynel and X-51), as well as Dacron polyester fibre and the two protein fibres, Caslen and Vicara. Also significant, chiefly for nonapparel applications, were the polyethylene, polyvinyl-acetate, saran and glass fibres. (S. B. H.)

Great Britain.—The first few months of 1952 were the most difficult period for the United Kingdom textile industry since the slump of 1930-33.

The U.K. consumption of merino wool for topmaking in Aug. 1952 was 8,560,000 lb. as compared with 9,940,000 lb. in Aug. 1951 and consumption of crossbred wool was 7,200,000 lb. (6,950,000 lb.). The consumption figures for the same periods in woollen spinning were: merino 2,450,000 lb. (2,670,000); crossbred 6,410,000 lb. (7,740,000); Indian, etc., 1,190,000 lb. (1,760,000); wool noils 1,020,000 lb. (1,270,000); wool wastes 1,380,000 lb. (1,570,000); mungo and shoddy 5,050,000 lb. (6,380,000); these figures disregarded the consumption of hair, rayon and other fibres. Estimated deliveries of woollen yarn (monthly averages) for July-August-September 1952 were 22,500,000 lb. and worsted yarn deliveries for August were 12,630,000 lb., compared with 14,530,000 lb. in Aug. 1951. Deliveries of woven fabrics for the same periods totalled 25,860,000 sq.yd. (32,460,000) of which woollen cloth accounted for 15,880,000 sq.yd. (19,490,000) and worsted fabrics 9,980,000 sq.yd. (12,970,000). Workers employed in worsted spinning and weaving in August totalled 72,500, as compared with 76,800 in Dec.

1951 and woollen spinning and weaving 59,400 (62,200).

In the cotton section of the industry, total weekly average single yarn production in August was 8,590,000 lb. as against 15,910,000 lb. in Aug. 1951. In the same period cotton waste yarn production was 1,280,000 lb. (1,840,000) and production of spun rayon and mixture yarns 1,750,000 lb. (2,120,000); the totals for doubled yarn were 2,380,000 lb. (4,780,000). The production of cotton cloth was 28,800,000 linear yards (41,900,000) and rayon and mixtures 10,200,000 linear yards (14,700,000). In the same periods (Aug. 1952 and 1951) the total number of operatives in spinning and doubling was 112,300 (148,700); and weaving 114,100 (145,700). Weekly average machine activity was 17,200,000 mule equivalent spindles, as compared with 26,500,000 in Aug. 1951, and the number of looms running was 221,000 (307,000); the figures for doubling spindles were 1,340,000 (2,510,000).

United Kingdom production in August of single continuous-filament rayon yarn was 9,600,000 lb., as compared with 18,300,000 lb. in Aug. 1951 and staple fibre production was 5,700,000 lb. (11,900,000); totals 15,300,000 lb. (30,200,000). Weekly average production of filament and spun rayon woven fabrics for July was 5,320,000 linear yards, as compared with 9,710,000 linear yards in the period January-May. In the export field the position was extremely poor. Rayon staple, rayon yarn, rayon and spun rayon fabrics, mixtures, pile fabrics, ribbons, lace, etc., amounted in August to £2,710,000, as compared with £6,190,000 in Aug. 1951. In the same months the figures for cotton yarn were £970,000 (£3,110,000); cotton fabrics £5,980,000 (£12,560,000); wool tops and woollen and worsted yarns £3,500,000 (£4,850,000); woollen fabrics £3,050,000 (£4,180,000); worsted fabrics £2,460,000 (£3,360,000).

Europe.—In most countries textile production was adversely affected by the world-wide recession and exports were lower than in 1951. Belgium, the Netherlands and Italy were the first to curtail production of cotton and spun rayon yarns and piece goods.

The Federal Republic of Germany and Austria soon took similar action, followed by France. Exports from Italy revealed a marked decline.

Commonwealth.—In India there was a fall in demand during 1952 for cotton textiles and the government attempted to alleviate the situation by partly decontrolling textiles at home and lifting some restrictions on exports. Exports to the trans-shipment areas were permitted and there were no restrictions on the export of fine and superfine cloth, but the export duty on coarse and medium cloth still remained. In 1951-52 India exported a total of 804,000 tons of jute manufactures valued at Rs. 268.1 crores, compared with 649,000 tons valued at Rs. 113.8 crores in 1950-51.

In Australia more than 90 cotton spinning and weaving mills were steadily employed, as were the 170 woollen mills. Wool prices during the latter half of the year had become more stable and gave fresh impetus to world buying activities. It was announced that Australian wool growers would receive from the Joint organization about £31,200,000 sterling in profits from disposals of wartime accumulated wool. (See also COTTON; LINEN AND FLAX; RAYON AND OTHER SYNTHETIC FIBRES; WOOL.)

(A. DR.)

Thailand (SIAM). A kingdom of southeastern Asia, Thailand is bounded west and northwest by Burma, northeast and east by French Indochina and south by Malaya. Area: 198,272 sq.mi. Pop.: (1947 census) 17,442,689; (1951 est.) 18,836,000. Language: Thai (Siamese) 75%; Chinese 20%; Indian and Malayan 6%. Religions (1947 est.): Buddhist 95%, Moslem 4%. Capital (pop., 1947 census): Bangkok 1,173,-

549. Ruler, King Phumiphon Adundet (or Bhumibol Aduladej); prime minister in 1952, Marshal Luang Pibul Songgram.

History.—On June 28, 1952, a son was born to King Phumiphon and Queen Sirikit; this was the first time a son had been born to a reigning monarch of Thailand since 1893 and was therefore an occasion for general satisfaction.

A new constitution adopted following the coup d'état of Nov. 28, 1951, was brought into force on March 8 when the king formally approved it, and thus Thailand reverted to the system first adopted in 1932 under which there was a single legislative chamber, half the members being elected by universal adult suffrage and half nominated by the crown, in place of the bicameral and elective system introduced in 1946.

The elections already held in February gave the existing ministry a strong position, for of the 123 elected members of the chamber only about 40 were likely to be in opposition, while the support of the 123 nominated members was assured. The new parliament met on March 18 and six days later nominated Marshal Pibul Songgram once more as prime minister.

Thailand was affected during the year by the fall in the price of rubber, and the southern provinces were in a distressed condition; in August the government resolved to make a grant of 5,000,000 baht to assist the rubber industry. A number of plans for developing the country's economic resources were formulated during the year; according to the press, loans totalling 3,000,000,000 baht (about \$166,000,000) were sought from the International Bank for Reconstruction and Development, for electric power projects, irrigation, extension of the railway system, harbour development, modernization of mines and development of new mineral resources.

The government maintained its co-operation with the United Nations and the western powers, and the Thai contingent in Korea continued at full strength. Diplomatic relations were resumed with Japan, and a Japanese embassy was established in Bangkok on April 28. Internally, however, a certain amount of Communist agitation continued, almost exclusively among the large Chinese population, and this unrest was strengthened by resentment against the raising of the alien registration fee from 20 to 400 baht a year.

An effort was made to send delegates to the peace conference at Peking in September, but the authorities refused to issue passports.

(B. R. P.)

Education.—Schools (1951): government 364, pupils 81,340; local public and municipal 18,581, pupils 2,660,492, teachers 72,281; private 1,279, pupils 267,442. Universities 5, students 10,557.

Finance and Banking.—Budget: (1951 est.) revenue 2,500,000,000 baht, expenditure 2,499,000,000 baht; (1952 est.) revenue 3,055,000,000 baht, expenditure 2,749,000,000 baht. Currency circulation (Dec. 1951): 3,782,000,000 baht. Bank deposits (Dec. 1951): 1,517,000,000 baht. Monetary unit: baht or tical with an official exchange rate of 35 bahts to the pound sterling and 12.55 bahts to the U.S. dollar.

Foreign Trade.—(1951) Imports 3,713,000,000 baht; exports 4,652,000,000 baht. Main sources of imports (1949): Hong Kong 17.3%; U.S. 15.7%; Singapore 13.4%; U.K. 8.7%. Main destinations of exports: Singapore 19.5%; U.S. 15.3%; India 13.4%; Penang 9.1%. Main imports: textiles 19.4%; foodstuffs 11.7%; metal manufactures 8.3%; yarns 6.8%. Main exports: rice 50.7%; rubber 15.7%; tin and tin ore 9.7%; teak 4.1%.

Transport and Communications.—Roads (1950): 3,587 mi. Licensed motor vehicles (Dec. 1950): cars 8,500; commercial vehicles 6,570. Railways (1950): 2,032 mi.; passenger-miles (1950) 891,818,000; freight net ton-miles 298,390,000. Merchant shipping (1949): vessels of 200 tons and over, 13; total tonnage 4,709. Air transport (1950): miles flown 1,265,000; passenger-miles 11,500,000; cargo ton-miles 267,000; mail ton-miles 30,400. Telephones (1951): 6,100. Radio receiving sets (1950): 100,000.

Agriculture and Fisheries.—Main crops (metric tons, 1951 except as noted): rice 7,250,000; sugar, raw value 32,000; soya beans 12,000; sesame 9,500; peanuts (1950) 55,000; tobacco (1950) 21,300; cotton (1950) 6,000; jute (1949) 3,000; cottonseed (1950) 14,000. Livestock (Dec. 1949): cattle 5,000,000; pigs 2,000,000; buffaloes 5,000,000; horses (1951) 220,000. Meat, commercial production (1951) 70,800 metric tons.

Fisheries: total catch (1950) 150,000 metric tons.

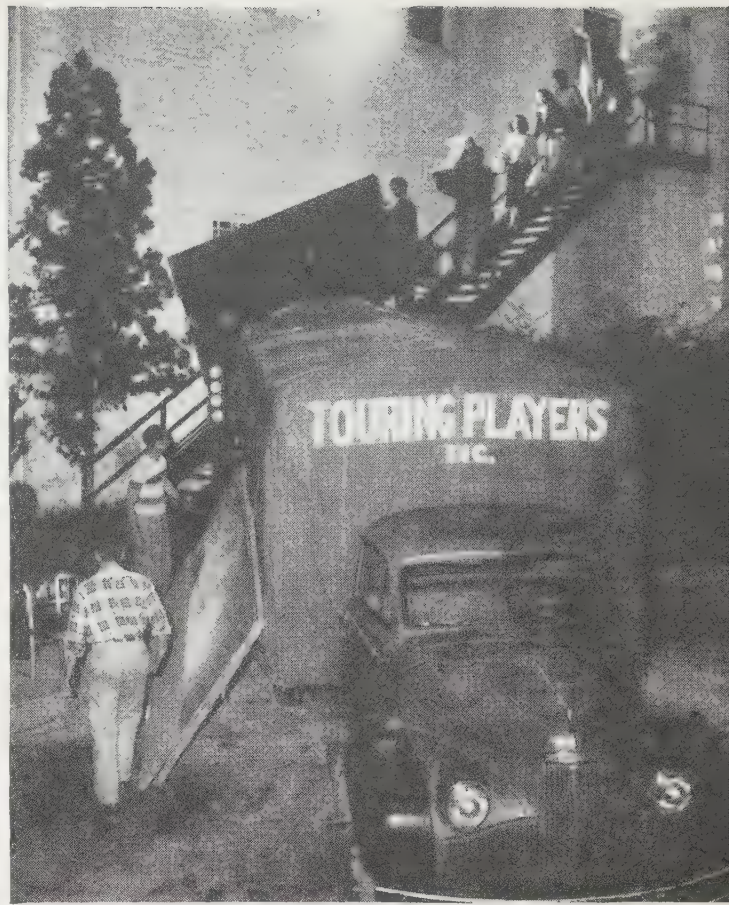
Industry.—Electricity production in 1951, Bangkok (93% of total generation): 57,000,000 kw.hr. Raw materials (metric tons, 1951): rubber (net exports) 110,500; tin (concentrates) 10,800; cement 228,000.

Theatre. The many difficulties facing the theatre in the United States appeared to be on the increase during 1952. The shortage of new plays of merit by Americans continued to prevail, and growing production costs made formerly adventurous producers cautious. While no new native dramatist seemed to have anything very extraordinary to offer, such superior works from abroad as Sean O'Casey's *Cock-a-Doodle Dandy*, Lord Dunsany's *The Strange Lover*, various plays by Ferenc Molnar (who died in New York city, April 1, 1952), André Roussin's *The Ostrich Eggs* and Marcel Aymé's *Clérambard* were available for production. The financial risk of staging them, however, prevented their being attempted, and Eugene O'Neill, ill and unable to supervise its production, published in book form instead of presenting in the theatre his play, *A Moon for the Misbegotten*.

The New York dramatic critics complained bitterly about the state of the theatre, and George Jean Nathan declined to contribute his annual volume on the season on the grounds that the year was unworthy of record. The New York Drama Critics circle prize was awarded to John van Druten's *I Am a Camera*, a dramatization of some short stories of pre-nazi Berlin by the English novelist Christopher Isherwood, and Julie Harris as the drifting, British bohemian in this play was selected as the season's outstanding actress. The Pulitzer prize went to *The Shrike*, a drama of life in the psychopathic ward of a large Manhattan hospital, the first play by Joseph Kramm, a former radio writer. *The Shrike* was distinguished by the direction and acting of José Ferrer, whose performance as the harassed inmate was another of the year's histrionic triumphs.

Helen Hayes found a following with Mary Chase's rather maudlin, Barrie-esque fantasy, *Mrs. McThing*, and Paul Osborn's dramatization of John P. Marquand's novel *Point of No Return* with Henry Fonda, Anita Loos's dramatization of Colette's novel *Gigi* with Audrey Hepburn, and Jan de Hartog's two-character play of 25 years of married life, *The Fourposter* (all of which had opened late in 1951), proved popular at the box office. S. N. Behrman contributed a drawing-room piece, *Jane*, based on a Somerset Maugham story, and Truman Capote, turning from the novel, wrote his first play, *The Grass Harp*, a gentle comedy of small-town life in the south. Its quality was not illuminated by a poor production.

There were many importations and revivals. Rex Harrison and Lilli Palmer offered Christopher Fry's poetic comedy of autumnal passion, *Venus Observed*, and Sir Laurence Olivier and Vivien Leigh played Shaw's *Caesar and Cleopatra* and Shakespeare's *Antony and Cleopatra*. Jean Anouilh's *Eurydice*, adapted as *Legend of Lovers*, appeared and disappeared. The Drama Quartette (Charles Laughton, Sir Cedric Hardwicke, Charles Boyer and Agnes Moorehead) read the "Don Juan in Hell" sequence from Shaw's *Man and Superman* and were so successful that many other "reading" companies were formed across the nation. The American National Theatre and Academy revived O'Neill's *Desire under the Elms*, Odets' *Golden Boy* and Gertrude Stein and Virgil Thomson's *Four Saints in Three Acts*, while the New York City Center theatre revived Clemence Dane's *Come of Age*, George S. Kaufman and Edna Ferber's *First Lady*, Ibsen's *The Wild Duck*, Deval's *Tovarich* and El-



PORTABLE STAGE equipment of the Touring Players being loaded onto a truck before moving on to a new engagement in 1952. On its 8,000-mi. barnstorming tour of the season, the travelling repertory group often played in small U.S. towns never before visited by a professional company

liott Nugent and James Thurber's *The Male Animal*, the last enjoying an extended engagement. Another theatre event of note was provided by the London actor Emlyn Williams, reading from the works of Charles Dickens.

The U.S. musical comedy stage suffered from a lack of fresh material as severely as did the dramatic stage during 1952. *South Pacific*, *Guys and Dolls* and *The King and I*—all held over from previous seasons—continued to prosper, but no new musical show joined their happy company. The only other show to do so was the handsome revival of *Pal Joey*, a Richard Rodgers-Lorenz Hart musical comedy of 1940 vintage. *Wish You Were Here*, an expensive extravaganza suggested by Arthur Kober's play *Having a Wonderful Time*, found a wider public than the critics had predicted, but the revival of George Gershwin's *Of Thee I Sing*, a new edition of the celebrated Negro revue *Shuffle Along*, and *Three Wishes for Jamie* all fared badly.

(T. Q. C.)

Canada.—The Dominion Drama festival entered a new era in 1952 when it accepted commercial sponsorship to avoid collapse of the annual competition: Calvert Distillers Ltd. granted the organization \$15,000 annually toward expenses and \$2,300 toward cash awards; a Calvert trophy and \$1,000 replaced the Bessborough trophy as the festival's top award, and Calvert trophies and \$100 awards were scheduled for winning groups in regional festivals. The decision to accept commercial sponsorship created some disturbance within the festival ranks, but with a \$30,000 annual expenditure, outside financial aid became inevitable. The 1952 festival was held in Saint John, N.B., and the traditional awards were made for the last time: the Bessborough trophy (highest award) to the Ottawa Little theatre for *The Enchanted*; the Martha Allan trophy for best visual

Statistics of the Theatre in New York City

	Season*	Calendar Year	Season†
	1951-52	1951	1927-28
Productions	85	106	302
Musical comedies	22	29	69
Plays	63	77	233
Premières	49	52	255
Successful productions	26	19	66
Performers employed	1,686	1,852	6,621
Tickets sold	7,600,000	8,900,000	
Approximate cost of production	\$3,750,000	\$4,300,000	
Number of shows booked for other cities	59	67	

*The theatrical season is considered to begin Aug. 1 and end July 31.

†The peak season on Broadway.

presentation to St. John's, Nfld., players; the Henry Osborne trophy for the best male actor to E. M. Margolese of Toronto Actor's company; the Nella Jeffris trophy for the best female actor to Carmel Kemp, St. John's; the Sir Barry Jackson trophy for the best presentation of a Canadian play in the 13 regional festivals to St. Marys, Ont., Little theatre.

The fourth annual ballet festival in Toronto was a great success and encouraged the Canadian Ballet Festival association in its aim—to promote the development of public consciousness of ballet to a point where dancers could earn their living at their profession.

There was much interest in the announcement that a Shakespeare festival would be launched at Stratford, Ont.; the avowed objective was Elizabethan-style settings and the establishment of the relationships between the actor and the audience that the Elizabethan theatre knew. The project was scheduled for 1953, with the leading talent to come from England. A company of 14 actors and actresses, mostly from London, Eng., went to Newfoundland late in 1952 and organized the island's first professional theatre. (C. Cy.)

Great Britain.—In 1951 the needs and purposes of the Festival of Britain had imposed upon the British stage a severe nationalism; and in 1952, as if by natural reaction from an artificial state of affairs, it was noticeable that London seemed to have an English-speaking, rather than an exclusively English theatre. This is not merely a roundabout or picturesque way of saying that the importation of United States plays was resumed in 1952 on a more than usually lavish scale (though that did in fact happen); it is a comment on the remarkable degree to which the British and United States stages had fused themselves into one vast organization in which almost every kind of talent was interchangeable.

A striking example occurred in *The Young Elizabeth*, by Jennette Dowling and Francis Letton, which came to the New theatre on April 2 and proved one of the year's chief successes. Although the theme of this play, the stormy and dangerous years of the girlhood of Elizabeth I, was a page of English history, the authors were American and the leading lady, Mary Morris, had been born in the Fiji Islands and had made her first appearance on any stage in the British West Indies. Miss Morris, who had been doing distinguished work for years without much reward, became a popular favourite overnight.

Another actress who belonged by birth to the commonwealth and by training to the British stage but who increased her reputation during the year by appearing in plays from the U.S. was Margaret Johnston, born in Australia. She appeared first in Tennessee Williams' *Summer and Smoke* and although the play did not entirely satisfy either critics or public, Margaret Johnston's sure but delicate touch in the part of the unhappy heroine and her faculty for creating about her an atmosphere of strangeness were greatly admired. Later, in Philip Barry's *Second Threshold*, she showed her ability to play a much more formidable woman without losing her individual quality. The actress won more praise than the play. Clive Brook gave one of the year's outstanding performances as the father.

Alfred Lunt, Lynn Fontanne and Noel Coward renewed an old partnership with Coward's play *Quadrille*. Compared with his last piece, *Relative Values*, which was still running at the Savoy, critical opinion found *Quadrille* a deeply disappointing comedy. A more worthy example of dramaturgy was *Winter Journey* by Clifford Odets, in which a broken-down actor was magnificently played by Michael Redgrave, his director by Sam Wanamaker and his wife by Googie Withers. Other U.S. productions which won commendation during the year were *Red Letter Day*, *Under the Sycamore Tree*, *The Trouble-Makers* and the musicals *Call Me Madam* and *Porgy and Bess*.

The year 1952 was not a good one for those British dramatists whose interests lay wholly at home. Indeed, only five such plays of real distinction were put on during the year—Terence Rattigan's *The Deep Blue Sea*, Charles Morgan's *The River Line*, J. B. Priestley's *The Dragon's Mouth*, Christopher Fry's *The First-Born* and James Forsyth's *The Other Heart*—and of these only the first three could be accounted successes.

Anthony Sharp's *Nightmare Abbey* was an unexpectedly rewarding stage transcription of Thomas Love Peacock's extravaganza. Later in the year the Westminster housed a really good "thriller"—Frederick Knott's *Dial M for Murder*.

The year had more than its share of worthy Shakespeare revivals, though some of the Stratford performances were not up to standard. John Gielgud's production of *Much Ado About Nothing* started the year's playgoing brilliantly; and a month later the Bristol Old Vic company, visiting the parent theatre with *Two Gentlemen of Verona*, carried that seldom-seen and generally intractable play to something very like a triumph. On May 28 the Old Vic company itself staged a memorable production of another rarely seen play, *Timon of Athens*; and at the opening of the autumn season *Romeo and Juliet*, with Alan Badel and Claire Bloom as the two lovers and Athene Seyler as the nurse, proved a real achievement.

The admirable series of revivals at the Arts Theatre club continued during the year, the most interesting being Harold Brighouse's *Hobson's Choice* and the 18th-century comedy *The Way to Keep Him* by Arthur Murphy. Another play which was resuscitated during the season was Thomas Middleton's *A Trick to Catch the Old One*, which proved to have more than a little life in it. (W. A. DN.)

Therapy: see CHEMOTHERAPY; PSYCHIATRY.

Throat: see EAR, NOSE AND THROAT, DISEASES OF.

Tibet. A country of central Asia, north and northeast of the Himalaya, Tibet is nominally a Chinese dependency. It had been in practice independent and was the only country in the world entirely under ecclesiastical control. Area: c. 469,294 sq.mi. Pop. (1948 est.): c. 3,000,000. Language: Tibetan. Religion: Buddhist. Capital, Lhasa. Ruler, the Ling Erh ("divine child") Pamo Töntrup or Lamu Fankha, the 14th dalai lama.

History.—The first anniversary of the "liberation" of this natural mountain fortress towering above the three most populated realms of the world was celebrated at Lhasa on May 23, 1952. Both the dalai lama and the panchen lama (who reached Lhasa on April 28) sent telegrams to Mao Tse-tung thanking him for his friendly protection. A military parade took place at Lhasa in the presence of Gen. Chang Ching-wu, the Chinese civil administrator, Gen. Chang Kuo-hua, commander of the Chinese forces, and Ngabo Ngawang Jigme, representing the Tibetan administration.

Shortly before, under Chinese pressure, the dalai lama had had to dismiss Lukhang, his premier, and Lobsang Tashi, a deputy premier, who were charged with being responsible for the nationalist movement which led to Sino-Tibetan clashes in Lhasa in April. Savang Lhalu, another minister, who commanded the fortress of Chamdo (Chengtu) when Tibet was invaded in 1950, was forced to resign. In June the panchen lama left Lhasa for the monastery of Shigatse where he was to make his headquarters.

In September it was reported that the Chinese were building an airfield at Lhasa and a highway linking Lhasa with Kashgar in Sinkiang.

The governments of India and China agreed in September that the Indian mission at Lhasa should henceforth be desig-

nated the Indian consulate-general. It was also understood that the three Indian trade agencies in Tibet, at Gyantse, Yatung and Gartok (western Tibet) would continue to function, and that the small Indian army detachment would remain at Gyantse for the protection of the trade route.

See Fosco Maraini, *Secret Tibet* (London, 1952).

Timber: see FORESTS; LUMBER.

Timor: see PORTUGUESE OVERSEAS TERRITORIES.

Tin. The mine output of the major producing countries is shown in Table I, as reported by the U.S. bureau of mines. While the world total continued to rise in 1951, the increase over 1950 was relatively small.

Table I.—World Mine Production of Tin

	1946	1947	1948	1949	1950	1951
	(In short tons)					
Australia	2,382	2,738	2,099	2,210	2,769	?
Belgian Congo	15,782	16,685	15,164	15,411	15,344	14,474
Bolivia	42,133	37,258	41,816	38,209	34,959	37,106
Burma	383	2,007	1,285	1,995	1,720	1,058
China	2,800?	4,800?	5,380?	4,700?	4,000?	?
Indonesia	7,189	17,825	34,229	32,441	35,951	34,704
Malaya	9,444	30,269	50,193	61,499	64,441	64,028
Nigeria	11,573	10,229	10,345	9,883	9,249	9,552
Thailand	1,183	1,569	4,749	8,755	11,608	10,642
United Kingdom . . .	888	1,006	1,435	1,357	1,075	?
Others	4,843	3,814	4,105	4,740	5,120	17,418
Total	98,600	128,200	170,800	181,200	186,400	187,924

The production rate in 1952 continued at about the 1951 level, with 108,360 short tons reported through July.

United States.—The salient features of the tin industry in the United States are summarized in Table II.

Table II.—Data of the Tin Industry in the United States

	1945	1946	1947	1948	1949	1950	1951
	(In thousands of short tons)						
Imports, total	47.0	60.1	59.7	97.1	110.3	121.9	64.3
In concentrates . .	37.5	42.7	31.8	42.0	42.9	29.2	33.2
Metal	9.5	17.4	27.9	55.1	67.4	92.8	31.1
Smelter output . . .	45.3	48.7	37.6	41.6	40.4	37.1	35.3
Secondary recovery .	39.3	31.0	30.0	30.1	24.9	35.5	31.5
Consumption, total .	93.6	90.6	98.7	101.7	81.0	117.0	98.7
Primary	62.3	61.2	66.3	67.0	52.8	79.7	63.7
Secondary	31.3	29.5	32.4	34.6	28.2	37.3	35.0
Stocks, industry . . .	17.7	19.3	23.5	16.6	25.4	28.9	?

An increase in price to \$1.83 per pound early in 1951 reduced U.S. buying and consumption. The price dropped back to \$1.06 in June and \$1.03 in August 1951, but advanced to \$1.215 in January 1952. (See also CANNING INDUSTRY; MINERAL AND METAL PRODUCTION AND PRICES; RECONSTRUCTION FINANCE CORPORATION.)

(G. A. Ro.)

Tires: see RUBBER.

Titanium: see MINERAL AND METAL PRODUCTION AND PRICES.

Tito (JOSIP BROZOVICH or BROZ) (1892–), Yugoslav prime minister, was born on May 25 at Kumrovec, Croatia. He served in the Austro-Hungarian army in World War I, was captured by the Russians, and in 1917 he joined the Red army and fought against anti-Communist Russian armies. In 1920 he was sent by the Comintern to Yugoslavia to organize the Communist party there. From 1928 to 1934 he was imprisoned for conspiracy, and in 1937 he became secretary-general of the Yugoslav Communist party. After the Germans overran Yugoslavia in 1941, Tito organized a leftist guerrilla group which effectively harried the axis occupation forces. Yugoslavia was liberated early in 1945, and Tito, who had appointed himself marshal, became prime minister and commander in chief. On June 28, 1948, the Cominform published a statement denouncing Tito for his "hateful policy in relation to the U.S.S.R." But from a correspondence between Belgrade and Moscow published later it was possible to learn that the real core of Tito's heresy was his brand of Yugoslav patriotism. "Even though we love the U.S.S.R. we cannot love our own

country less," wrote Tito to Stalin on April 13, 1948. On Oct. 29, 1950, he paid tribute to the U.S. government, which was helping Yugoslavia in its food crisis without imposing any political obligations.

During 1951 Tito pursued his qualified approach to the west. As the Soviet propaganda campaign against Yugoslavia increased in violence, on Nov. 14, 1951, Tito and George V. Allen, the U.S. ambassador, signed at Belgrade an agreement providing that the United States would "make or continue to make available" to Yugoslavia military equipment, materials and other services. On July 6, 1952, Tito said that Yugoslavia was ready to collaborate with Greece, Turkey and Austria but would not enter into formal alliances with those countries.

On Sept. 18, in Belgrade, and four days later at Bled, Tito discussed European problems with Anthony Eden, British foreign secretary. It was learned on that occasion that Tito had remarried and that his third wife was Jovanka Budisavljevic. On Nov. 3, at the Yugoslav Communist party congress, Tito spoke for five and a half hours.

Tobacco. U.S. consumers in 1952 paid about \$5,100,000,000 for tobacco products, of which about \$1,500,000,000 was taxes. Total tobacco production in the U.S. was large, indicated at 2,234,535,000 lb., compared with 2,328,226,000 lb. (second highest on record) in 1951 and an average for 1941–50 of 1,841,869,000 lb. Most types were under acreage allocations. The 1,790,000 ac. for harvest were slightly above 1951, but the 1941–50 average was 1,630,000 ac. Yields were somewhat better than was anticipated during the drought but averaged 1,248 lb. per acre, compared with a record 1,307 lb. in 1951 and 1,124 lb. average for 1941–50.

Tobacco consumption in 1952 averaged about 12.6 lb. by U.S. civilians. Cigarette consumption continued its upward trend in 1952 to an output of about 430,000,000,000, 3% more than in 1951 and 10% more than in 1950, a daily average of ten per person over age 15. Prices were about 5% higher, and some states increased tax rates on cigarettes. Cigar consumption also increased, but use of pipe tobacco, chewing tobacco and snuff declined.

The flue-cured types of the coastal plain (class I) which are the dominant cigarette and export tobaccos totalled 1,388,848,000 lb., second only to the record 1,451,965,000 lb. of 1951—the 1941–50 average was only 1,064,300,000 lb. Average yields per acre declined to 1,234 lb., compared with a record 1,304 lb. in 1951 and an average for 1941–50 of 1,103 lb. Acreage was approximately 1,125,600, and the official support price was 50.6 cents per pound. Carry-over stocks were a record 1,731,000,000 lb., which with the 1952 crop gave a total supply of 3,120,000,000 lb., about 2.5 times the probable disappearance in 1952–53; prices in the early southern markets were higher than in 1951, but in the northern markets were below the previous year.

Table I.—U.S. Tobacco Production by Leading States

(In thousands of pounds)							
State	Indicated 1952	1951	Average 1941-50	State	Indicated 1952	1951	Average 1941-50
North Carolina . . .	942,950	998,990	736,834	Florida	29,700	32,392	19,990
Kentucky	452,162	460,370	397,950	Ohio	27,165	26,222	24,160
Virginia	183,995	176,788	138,489	Connecticut . . .	24,138	22,353	24,416
South Carolina . . .	172,900	175,560	128,052	Wisconsin	22,002	22,889	32,468
Tennessee	141,530	143,214	128,139	Massachusetts . .	9,171	10,317	10,694
Georgia	125,620	137,361	92,991	Missouri	5,980	4,000	5,965
Maryland	39,200	41,600	33,702	West Virginia . .	4,160	4,278	3,268
Pennsylvania	38,814	56,186	50,451				

Table II.—Tobacco Production of the Principal Producing Countries

(In thousands of pounds)							
Country	1952*	1951*	Average 1935-39	Country	1952*	1951*	Average 1935-39
United States	2,234,535	2,328,226	1,460,054	Turkey	195,264	180,777	128,505
India	—	—	761,600	Italy	—	179,674	95,511
Brazil	—	240,000	202,703	Canada	—	153,792	76,556
Japan	216,194	209,966	148,680	Greece	99,207	137,135	132,819
				France	115,000	111,240	72,995

*Preliminary.

The fire-cured types (class II) of Kentucky and Tennessee produced a small crop of 55,812,000 lb., compared with 59,529,000 lb. in 1951 and an average for the previous decade of 72,940,000 lb. The average yield of 1,195 lb. was lower than the 1,215 lb. of 1951, but far above the 1941-50 average of 1,051 lb. The support price was 37.1 cents per pound.

The air-cured Burley types amounted to 611,470,000 lb., slightly less than 616,515,000 lb. in 1951, but far above the 500,138,000 lb. average for the previous decade. The average yield was 1,310 lb. per acre, whereas 1951 was 1,352 lb. and 1941-50 only 1,154 lb. Burley acreage was 466,800 ac. in 1951. The support price averaged 49.5 cents per pound. Stocks from previous crops were a record 1,063,000,000 lb., giving a total supply about 3.1 times probable 1952-53 disappearance.

Southern Maryland tobacco (type 32) was 39,200,000 lb., well above the 33,702,000 lb. average for 1941-50, but below the 41,600,000 lb. of 1951. Yields (800 lb. per acre) were the same as in 1951, whereas the 1941-50 average was 758 lb. Acreage was 49,000, compared with 52,000 ac. in the previous year. The price was not supported.

Dark air-cured types totalled 30,185,000 lb., less than 31,708,000 lb. in 1951 and much below the decade average of 37,161,000 lb. The average yield was 1,126 lb. against 1,197 lb. in 1951 and 1,064 lb. in 1941-50. The support price averaged 33 cents per pound.

Cigar types, wrapper, filler and binder totalled 108,840,000 lb., compared with 126,645,000 lb. in 1951 and an average for the previous decade of 133,460,000 lb. The average yield declined to 1,459 lb., whereas 1951 was 1,502 lb. and 1941-50 was 1,413 lb. There was no price support on 1952 production of these types.

The 1952 tobacco crop of the north temperate zone was forecast at 5,422,000,000 lb., 4% less than in 1951, with the decrease mostly in North America and southeast Europe, largely but not wholly to be charged to drought. World production of flue-cured types was a new record in 1951-52 of 2,377,000,000 lb., 20% more than the record of the previous year and 31% more than the average for the decade. World trade in tobacco in 1951 totalled 1,293,923,000 lb., 6% more than 1950 and 9% above pre-World War II. Increased exports by the United States, Turkey, India, Greece and the Philippines more than offset decreased amounts from Italy, Yugoslavia, Brazil and Southern Rhodesia. The U.S. exported nearly one-half the total. Leading importers were the United Kingdom (355,804,000 lb.), the U.S. (104,652,000 lb.) and the Federal Republic of Germany. (J. K. R.)

Tobago: see TRINIDAD AND TOBAGO.

Tobin, Maurice Joseph (1901-), U.S. secretary of labour, was born in Roxbury, Mass., on May 22. He worked for the New England Telephone and Telegraph company for a number of years, served in the Massachusetts legislature, 1927-28, was mayor of Boston, 1937-44, and governor of Massachusetts, 1944-46. In 1948 Pres. Harry S. Truman appointed him secretary of labour.

During the national steel strike of 1952, Tobin supported the wage demands of the C.I.O. steelworkers union, declaring at the latter's annual convention in Philadelphia, Pa., May 14, that he was behind the steelworkers "heart and soul and spirit."

Togoland: see BRITISH WEST AFRICA; FRENCH WEST AFRICA; TRUST TERRITORIES.

Tongan Island Protectorate: see PACIFIC ISLANDS, BRITISH.

Tongking: see INDOCHINA.

Tornadoes: see DISASTERS.

Toronto. Capital of the province of Ontario, Can., Toronto lies at the mouths of the Humber and the Don rivers on the north shore of the western end of Lake Ontario. The population in 1951 was 670,945 (1941: 667,457); the 1951 population of the metropolitan area was 1,108,532 (1941: 909,928). In 1952 the population of the metropolitan area was estimated at 1,117,470, of which 544,171 were males. The subject of unification of Toronto proper with the 12 surrounding suburban municipalities continued to be hotly debated in 1952, but the once solid suburban opposition against unity in any form had disappeared under the admission that some form of union was desirable. The debate therefore centred around outright amalgamation, unification of essential services, or piecemeal amalgamation. By Oct. 31, 1952, no decision had been reached. The draft zoning law continued to be a contentious issue. A subcommittee of the city council studying traffic movement recommended a priority schedule for street enlargements to aid the flow of traffic from congested downtown areas. The province of Ontario consented to taxation of its vast property holdings in Toronto, valued at approximately \$11,000,000. A proposal to hold the sixth referendum on the question of two-year terms for councillors was discussed; the latest previous referendum was in 1950 when the idea was defeated by 20,000 votes. The Toronto board of education budget for 1952 totalled \$23,007,816, or \$2,833,855 over 1951. Figures released in 1952 revealed that Toronto had, in 1951, 157,205 occupied dwellings, of which 97,830 were owner-occupied. There were 4,005 major industries, having 158,562 employees, earning \$369,000,000 in wages, and making \$1,579,000,000 worth of goods. (C. Cy.)

Tourist Travel. The volume of vacation travel by the people of the United States, both at home and abroad, soared to a new record peak in 1952. The American Automobile association estimated that nearly 75,000,000 persons, about half the national population, made a pleasure trip sometime during the year, spending in excess of \$13,000,000,000 in the course of their travels.

Approximately 85% of all travel was by private passenger automobile; the vacation trend was further stimulated by a rise of more than 1,000,000 in the number of automobiles in the country in 1952. There were 43,894,000 passenger vehicles registered, an increase of 2.8% over the total of the previous year. A new record was set in national park visitation during the travel year, with 41,000,000 persons exceeding the total in 1951 by 14%. Ninety-six per cent of the visitors to the national parks arrived by car.

During the first six months of 1952, the 16 motor clubs affiliated with the American Automobile association issued a total of 531,821 travel routings to their members, an increase of 13.1% over the same period of the previous year. While travel rose to all regions, the percentages varied widely. The largest increase, 47%, was to California. Other increases, by regions, were northwest, 33%; New England, 21%; south central, 19%; northeast, 17%; southeast, 15%; Florida, 12%; southwest, 11%; north central, 9%; and eastern Canada, 8%.

The widespread use of the automobile as a means of travel greatly affected the accommodations industry. The building of conventional hotels had practically ceased; on the other hand, the construction of motor courts along the highways had proceeded at a high pace and by late 1952 there were an estimated 45,000 motels in the country, compared with 25,000 hotels. Owners of motor courts expected to take in an aggregate \$1,500,000,000 from a registration of 600,000,000 persons during 1952. The A.A.A. estimated that when its members travel by automobile, 55% stop at motor courts, 27% at hotels and the balance with friends or relatives.

Travel outside the country also continued to rise to new heights. Canada, the principal foreign objective of United States travellers, drew a total of 1,759,545 visitors during the first eight months of 1952, an increase of 5.9% over the same period of 1951. Alaska travel volumes were high and it was expected that a total of 50,000 vehicles, with about 100,000 passengers, would visit the territory during 1952. The total for the preceding year was 23,406 vehicles with 43,238 passengers. Mexican officials reported that 421,317 tourists visited Mexico during 1951, spending approximately \$300,000,000. A total of 500,000 visitors was expected during 1952.

A record number of travellers, citizens returning from abroad and aliens coming from other countries, arrived in the United States during the fiscal year ending June 30, 1952, according to figures furnished by the immigration and naturalization service. The total number of passengers was 1,433,010, an increase of 11.8% over the previous high set in 1951. The number of citizens was 797,108.

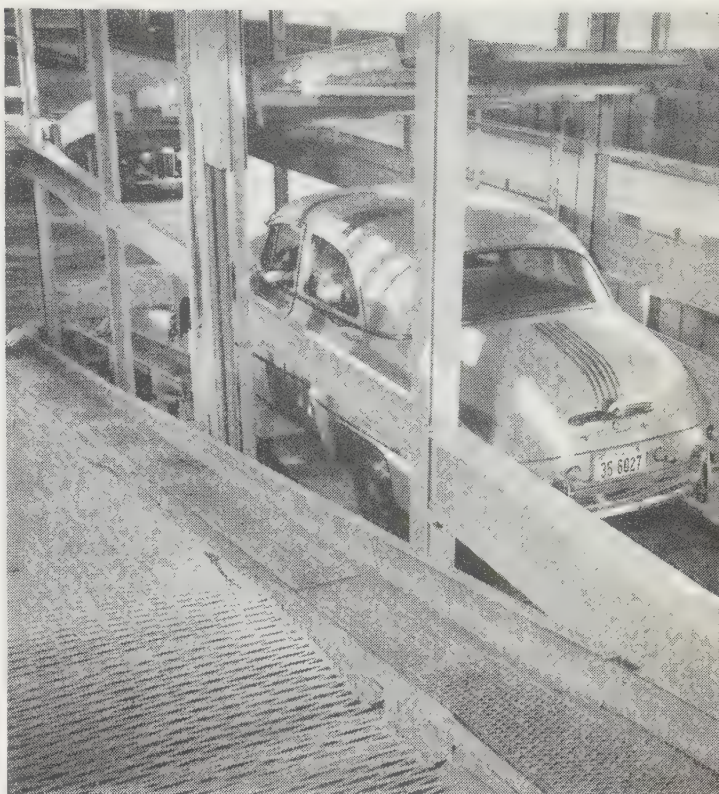
More passports were issued by the state department for travel abroad than ever before. During the first six months a total of 244,860 passports was issued, an increase of 48% over the same period in 1951. The principal foreign destination was Europe; the department of commerce estimated that in 1952 Americans visiting there would spend \$250,000,000.

A new international driving treaty, promulgated by the United Nations, took effect, with ratification by five nations including the United States. It was designed to "facilitate and encourage international motor touring" by enabling motorists of signatory nations to travel freely with their home licence plates and registration documents. The A.A.A.'s International Travel department reported a record high in the number of Americans motoring in Europe, with more than 4,500 shipping their own cars abroad and several thousand others renting cars for use on arrival. (See also AMERICAN CITIZENS ABROAD; NATIONAL PARKS AND MONUMENTS.) (MI. FE.)

Town and Regional Planning. The 21st International Housing and Town Planning congress was held in Lisbon, Port., Sept. 24-27, 1952. In Africa, a plan for Lusaka, the capital of Northern Rhodesia, was being realized in 1952. In 1951 plans were made for Capetown, Union of South Africa. A plan for greater Bombay, India, was published. For Copenhagen, Den., a city of more than 1,000,000 inhabitants, a plan for the metropolitan region was drawn up. At Marseilles, Fr., progress was made on the realization of a regional plan to localize and improve industrial zones and provide slum clearance for the central area. Construction proceeded in 1952 on the Avenida Bolivar in Caracas, Venez., a mile-long, 525-ft. parkway to provide an eight-lane superhighway across the heart of the city.

In Great Britain most of the county-wide, comprehensive plans required by law were filed in 1952 with the ministry of housing and local government. In Manchester, work began on realization of a 20-year plan. The new town of Lansbury, part of which was built as an exhibit for the Festival of Britain in 1951, was to be extended as one of a series of new towns to replace east side slum conditions in London. Construction proceeded in 1952 in the new towns of Stevenage, Harlow and others.

In the United States the growing urban population made demands on cities for revised plans and stimulated the creation and activities of county planning boards to take care of the overspill across official city limits. In 1950, 63.7% of the population lived in cities compared with 45.8% in 1910. The *Municipal Year Book, 1952* reported 20 city-county planning commissions. An economic survey in Arlington county, Va., made in



MULTIDECK GARAGE in a shopping district of Beverly Hills, Calif., one of the vertical parking structures growing in popularity in 1952 as an answer to midtown parking problems in many U.S. cities

1951, led to the establishment of a large regional shopping centre.

A plan for the state capitol area of Salem, Ore., was issued by the planning commission created by the legislature in 1949. In St. Paul, Minn., where an ambitious plan for approaches to the state capitol had been realized, announcement was made of a redevelopment scheme which would redeem slum areas in the capitol area. A similar redevelopment plan was announced for Nashville, Tenn. Many redevelopment schemes were adopted in 1952. In Portland, Ore., adverse uses were to be eliminated from an established industrial area. In Philadelphia, Pa., the planning commission announced redevelopment plans for Penn centre, where the removal of the Broad Street station and elevated tracks cleared the way for new land uses. A 1952 report indicated that the Board of Architectural Review, established in Rye, N.Y., in Aug. 1951, had performed a useful service. In Virginia a portable travelling exhibit, "Planning Your Town," was circulated in the towns.

The American Planning institute held its annual meeting at Baltimore, Md., April 24-26, 1952. The American Planning and Civic association held its National Citizens Conference on Planning and Resources in Louisville, Ky., May 18-21, 1952. The chamber of commerce of the United States held its fourth National Conference on Urban Problems in Portland, Ore., June 23-24, 1952. The American Society of Civil Engineers celebrated its 100th anniversary in Chicago, Ill., Sept. 3-13, 1952, and at one session "A History of City Planning" was given by Maj. Gen. U. S. Grant, III, president of the American Planning and Civic association. The American Society of Planning Officials held its National Planning conference in Boston, Mass., Oct. 5-8, 1952. (See also ARCHITECTURE; HOUSING.)

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Track and Field Sports.

Competition leading to the Olympic games was a feature of 1952, and the various records set during the United States indoor campaign were indications of what lay ahead. The mile run, with Fred Wilt and Don Gehrmann the top stars, and the pole-vaulting duels of Bob Richards and Don Laz, were highlights of the season. Wilt got away winging at New York city, Jan. 12, when he took his specialty in 4 min. 14.6 sec. to help the New York Athletic club annex Metropolitan Amateur Athletic union team honours. Manhattan college's medley relay team missed a listed world mark by $\frac{1}{10}$ sec. when it triumphed in 1 min. 53.7 sec. on a flat armoury floor. Richards lost the pole vault for the first time in 50 consecutive meets in the *Washington Star* (D.C.) games Jan. 12 when Laz went 7 in. higher to score at 15 ft. 3 in. Gehrmann took the mile in 4 min. 14 sec. and Dick Attlesley set a U.S. indoor mark of 8.3 sec. for the 70-yd. high hurdles. Horace Ashenfelter clipped the meet two-mile standard to 9 min. 5 sec. Gehrmann, Richards, Roscoe Browne and George Rhoden all set meet records in the *Philadelphia Inquirer* (Pa.) games of Jan. 18. Gehrmann spun a mile in 4 min. 10.2 sec.; Richards vaulted 15 ft. 3 in.; Rhoden took the 600-yd. run in 1 min. 13 sec.; and Browne annexed the 1,000-yd. run in 2 min. 14.9 sec. Two of the season's best feats came in the *Milwaukee Journal* (Wis.) games on Feb. 1. Richards vaulted 15 ft. 4 $\frac{1}{2}$ in., his peak for the year, and Gehrmann again beat Wilt in a 4 min. 8.4 sec. mile, his fastest of the year. A photo finish between Gehrmann and Wilt featured the New York Athletic club meet on Feb. 9, with Wilt declared the victor in 4 min. 10.4 sec. The national A.A.U. championships at New York, Feb. 16, saw Gehrmann set a new meet and U.S. record of 2 min. 8.2 sec. for the 1,000. John O'Connell of the Manhattan College Athletic association took the 60-yd. dash, then helped Vernon Dixon, Louis Jones and Robert Carty take the medley sprint crown after they had established a new U.S. time of 1 min. 52.7 sec. in qualifying. Richards, vaulting for the Illinois Athletic club, won at 15 ft.; Bill Mack of East Lansing, Mich., defeated Wilt for the mile title; and Ashenfelter, running for the New York Athletic club, won at three miles in 14 min. 2 sec. Charles Moore broke the meet mark with a 1 min. 10.9 sec. clocking in the 600 as he helped the New York Athletic club annex the team championship with 27 points. The Manhattan College Athletic association was second with 20.

Wilt moved up to the two miles for the Intercollegiate A.A.A.A. games and triumphed in 8 min. 50.7 sec. for the fastest time ever made on the North American continent. Reggie Pearman, New York university, turned in the best half-mile ever run on an 11-lap track as he upset Gehrmann in 1 min. 51.3 sec. Manhattan, with 40 $\frac{1}{2}$ points, took the team crown. Manhattan continued its record breaking and set a new Canadian mark of 3 min. 22.1 sec. for the mile relay at Hamilton, Ont., on March 8. O'Connell tied the Canadian national standard of 6.2 sec. for the 60-yd. dash and equalled the mark of 4.6 sec. for the 40.

Four championship records fell at Long Beach, Calif., June 20-21 in the 64th national A.A.U. outdoor games. Designated as semifinal Olympic tryouts, the meet drew a crack field. Walter Davis of the San Antonio Athletic club accounted for a mark with a high jump of 6 ft. 10 $\frac{1}{2}$ in., and Parry O'Brien, wearing the colours of the Los Angeles Athletic club, set a shot-put

Outstanding U.S. Track and Field Performances (Outdoor), 1952

100 Yd.		Mile Relay	
9.5 sec.—Johnson, L.S.U.; Burl, Colorado A. and M.; Golliday, Northwestern		3 min. 13 sec.—Occidental	
9.6—Thomas, Texas; Clinkscale, Texas Christian; Baker, Kansas State; Matson, San Francisco; Smith, Oregon; Childress, Odessa High school, Texas; Turner, Alameda High school, California; Smith, Texas; Poston, Florida State; Aldridge, Texas Southern; Dillard, unattached, Cleveland; Renfro, North Texas		183 ft. 5 $\frac{1}{2}$ in.—Iness, Southern California	
	220 Yd.	181:10 $\frac{1}{2}$ —Gordien, Los Angeles A.C.	
20.4 sec.—Stanfield, Shore A.C.		175:3 $\frac{3}{8}$ —Dillion, Auburn	
20.6—Baker, Kansas State		171:6 $\frac{1}{2}$ —Doyle, Montana A.C.	
20.8—Goode, Southern Methodist		171:0—Emery, Pennsylvania	
20.9—Curatta, Seton Hall		170:4 $\frac{1}{2}$ —O'Brien, Southern California	
21.0—Aldridge, Texas Southern; Burl, Colorado A. and M.; Pollard, Coatesville H.C., Pa.		Javelin	
	440 Yd.	242 ft. 3 $\frac{4}{8}$ in.—Young, Los Angeles A.C.	
46.9 sec.—Matson, San Francisco		239:3 $\frac{3}{8}$ —Miller, Navy Olympics	
47.0—Rhoden, Morgan State		233:1 $\frac{1}{2}$ —Allison, Navy	
47.7—Johnson, V.P.I.		228:8 $\frac{3}{8}$ —Roseme, California	
47.8—Lingel, Cornell; Adrian, San Antonio A.C.		224:5—Roylance, Salt Lake City	
	880 Yd.	Shot-Put	
1 min. 49.6 sec.—Whitfield, U.S. air force		58 ft. 5 $\frac{1}{2}$ in.—Fuchs, New York A.C.	
1:51.2—Siders, Illinois		57:4 $\frac{3}{8}$ —O'Brien, Southern California	
1:51.7—Wheeler, Iowa		57:1 $\frac{1}{8}$ —Hooper, Texas A. and M.	
1:52.3—Cryer, Illinois		56:7 $\frac{3}{4}$ —Mayer, New York P.C.	
1:52.6—Barnes, Occidental		55:3 $\frac{1}{2}$ —Chandler, U.S. air force	
	One Mile		Pole Vault
4 min. 8.8 sec.—Santee, Kansas		14 ft. 11 $\frac{1}{2}$ in.—Richards, Illinois A.C.	
4:09.4—Ross, Michigan		14:9—Cooper, Los Angeles A.C.	
4:10—Shea, U.S. army		14:9 $\frac{1}{2}$ —Laz, Illinois A.C.	
4:10.8—Dreutzler, U.S. army		14:5 $\frac{3}{8}$ —Mattois, San Francisco Olympic club	
4:12—Truex, Ohio State		14:5—Coleman, Illinois	
4:12.4—La Pierre, Georgetown		Broad Jump	
4:12.5—Garcia, Southern California		26 ft. 3 $\frac{1}{4}$ in.—Brown, U.C.L.A.	
	Two Mile		25:6 $\frac{1}{8}$ —Taylor, Princeton
9 min. 1.8 sec.—McEwen, Michigan		25:4 $\frac{1}{2}$ —Gourdine, Cornell	
9:05.8—Shea, West Point		25:2—Biffle, U.S. army	
9:07.2—Santee, Kansas		24:9 $\frac{1}{4}$ —Price, Oklahoma	
9:08.9—Ferguson, Iowa		High Jump	
9:13.2—H. Ashenfelter, New York A.C.		6 ft. 10 $\frac{1}{2}$ in.—Davis, Texas A. and M.	
9:16.4—Semper, Kansas		6:9 $\frac{3}{4}$ —Holding, East Texas State	
	120-Yd. High Hurdles		6:8 $\frac{3}{4}$ —Barnes, Oregon; Betton, Drake
13.7 sec.—Dillard, unattached, Cleveland		6:8—Wyatt, San Jose State; Hall, Florida; Dobard, unattached	
13.9—Dixon, Los Angeles A.C.; Anderson, Fort Knox		Hop, Step and Jump	
14.0—Davis, Southern California		50 ft. 8 $\frac{3}{4}$ in.—Ashbaugh, Fort Lee	
14.1—Walker, Southern Methodist		50:7 $\frac{1}{4}$ —Mazzocca, Northeastern	
14.2—Albans, Los Angeles A.C.; Attlesley, Navy Olympics; Barnard, Los Angeles A.C.; McNulty, Illinois		50:5 $\frac{1}{2}$ —Shaw, Columbia	
	220-Yd. Low Hurdles		49:11 $\frac{3}{4}$ —Gerhardt, unattached
23 sec.—Person, Texas; Davis, Southern California; Dillard, unattached		49:2 $\frac{1}{2}$ —Webb, La Salle; Bryan, San Francisco Olympic club	
23.1—Martin, Indiana		Hammer Throw	
23.2—McNulty, Illinois		186 ft. 8 $\frac{1}{2}$ in.—Blair, Boston U.	
23.4—Walker, Southern Methodist; Corley, Illinois; Shankle, Duke; Goldberg, Tufts		186:0 $\frac{3}{8}$ —Felton, Navy Olympics	
	400-M. Hurdles		182:8—Bane, Navy Olympics
50.7 sec.—Moore, New York A.C.		182:5—Engel, New York U.	
51.7—Devinyne, Kansas		180:4 $\frac{1}{8}$ —Chadbourne, Yale	
52.4—Rauch, Princeton		Decathlon	
52.5—Yoder, Arkansas		7,887 points—Mathias, Stanford	
52.6—Johnson, Pepperdine		7,053—Campbell, Plainsfield, N.J.	
52.8—Halderman, Los Angeles A.C.		6,804—Simmons, Los Angeles A.C.	
		6,713—Richards, Illinois A.C.	
		6,628—Albans, Los Angeles A.C.	

record of 57 ft. 4 $\frac{3}{8}$ in. in defeating Jim Fuchs, who had held the old mark. Henry Laskau of the 92nd Street Young Men's Hebrew association of New York city broke a 32-year-old U.S. and meet standard when he took the 3,000-m. walk in 12 min. 52.6 sec. Curtis Stone of the New York Athletic club was the only double winner as he annexed the 5,000- and 10,000-m. runs. The former Penn State ace won the 10,000 in 30 min. 33.4 sec. to better the mark set by Wilt in 1949. Bob Mathias of Tulare, Calif., retained the national A.A.U. decathlon title, and Stella Walsh of the Dreyer Athletic club kept the women's pentathlon crown.

Catherine Hardy of the Fort Valley State college, Fort Valley, Ga., annexed the 50-, 100- and 200-m. titles in the women's national A.A.U. outdoor championships. The team title went to the Police Athletic league of New York, which also won the women's laurels indoors as Mae Faggs led the scoring with a double in the 100- and 220-yd. sprints.

Southern California retained team honours in both the Pacific Coast conference and the National Collegiate Athletic association meets, and Manhattan college added the Intercollegiate A.A.A.A. outdoor championship to the one it had won indoors. Other major outdoor team title winners included Illinois, which



EMIL ZATOPEK (left) of Czechoslovakia, leading in the last lap of the men's 5,000 m. Olympic run at Helsinki, Fin., July 24, 1952. Zatopek set an Olympic record by finishing in 14 min. 6 sec.

repeated in the Western conference; West Point, Heptagonal league; Maryland, Southern conference; Kansas, Big Seven; Alabama, Southeastern conference; Texas A. and M., Southwest; Manhattan, Metropolitan (N.Y.) Intercollegiate; Washington State, Pacific, Northern; Rhode Island State, Yankee conference; and Tufts, New England.

A number of U.S. squads toured other countries before and after the Olympics. Dillard, one of the touring stars, was awarded the John Thornton trophy by the British Amateur Athletic association for winning the 120-yd. hurdles at London in August, his time of 13.9 sec. being the fastest of the year in Britain for that event. John Disley, English steeplechase ace, gained the C. N. Jackson trophy as Britain's athlete of the year. Bill Nankeville, Eng., ran a sparkling 3 min. 49 sec. for 1,500 m., easily beating Peter Robinson of England and Gehrman at London in May. (See also OLYMPIC GAMES.) (T. V. H.)

Trade Agreements: see INTERNATIONAL TRADE; TARIFFS.

Trade Commission, Federal: see FEDERAL TRADE COMMISSION.

Trade Unions: see LABOUR UNIONS.

Traffic Accidents: see ACCIDENT PREVENTION; DISASTERS.

Trans-Jordan: see JORDAN.

Transportation: see AVIATION, CIVIL; ELECTRIC TRANSPORTATION; MOTOR TRANSPORTATION; RAILROADS.

Trap-shooting: see SHOOTING.

Travel: see TOURIST TRAVEL.

Treasury, U.S. Department of: see GOVERNMENT DEPARTMENTS AND BUREAUS, U.S.

Trieste, The Free Territory of.

Trieste is a small state at the northern end of the Adriatic sea, between Italy and Yugoslavia, demilitarized and neutral, whose integrity and independence were assured from Sept. 15, 1947, by the Security council of the

United Nations. Total area: 293 sq.mi. Total pop. (mid-1951 est.): 372,000. Military governors under provisional regime: zone A, British-U.S. (area, 96 sq.mi.; pop., 312,000), Maj. Gen. Sir John Winterton; zone B, Yugoslav (area, 197 sq.mi.; pop., c. 60,000), Col. M. Stamatovitch. Mayor of the city of Trieste: Gianni Bartoli.

History.—The history of the free territory during 1952 was particularly stormy. Toward the end of February Marshal Tito approached the question from a new angle, proposing a Yugoslav-Italian condominium by which there should be alternate Yugoslav and Italian governors of the whole territory, each holding office for three years; a Yugoslav governor would have an Italian, and an Italian governor a Yugoslav deputy. Italy rejected this proposal out of hand.

On March 20 large-scale demonstrations were organized which were primarily intended to press for the return of the whole of the free territory to Italy and to arouse sympathy for the Italians subjected to the Yugoslavs in zone B. The result, however, was that U.S.-British-Italian talks on modifications only in zone A were opened in London on April 3. In a speech to both chambers in Belgrade on March 31 Marshal Tito protested against a discussion of the Trieste question without the participation of Yugoslavia.

On May 9, nevertheless, a U.S.-British-Italian memorandum was signed which provided for the handing over of a number of administrative functions in zone A to Italians. In reply the Yugoslav military governor introduced further Yugoslav legislation into zone B.

Meanwhile elections, postponed from 1951, had been held in zone A on May 25. While 94% of the electorate voted, the percentage voting for reincorporation in Italy fell from 63% in 1949 to 62%. The proportion of Christian Democrat voters diminished from 39% to 32.5%; the administration, however, remained in mainly Christian Democrat hands. (E. Wt.)

Finance.—Budget (1951-52 est.): revenue 12,730,000,000 lire, expenditure 15,680,000,000 lire. Monetary unit: lira with an exchange rate of 1,750 lire to the pound and 62½ lire to the U.S. dollar.

Foreign Trade.—(Excluding Italy; 1951) Imports 29,776,000,000 lire; exports 9,116,000,000 lire. Main sources of imports (1951): Yugoslavia and Yugoslav zone 7.2%; Germany 5.7%; Austria 3.3%; U.S. 2.7%. Main destinations of exports: U.S. 32.8%; Yugoslavia and Yugoslav zone 39.1%; Austria 6.7%; U.K. 2.7%.

Trinidad and Tobago. This British colony consists of two islands off South America north of the Orinoco delta. Area: 1,980 sq.mi. Pop.: (1946 census) 557,970 (27,161 in Tobago); (1951 est.) 643,000 (31,000 in Tobago). Language: English, Hindu, French, Spanish. Religion: Christian 70%; Hindu 23%; Moslem 6%. Chief towns (pop. 1950): Port of Spain (cap., 105,700); San Fernando (32,870). Governor in 1952, Major General Sir Hubert Rance.

History.—Extremes of wet and dry weather caused the 1952 sugar crop to fall some 25,000 tons below the estimated 165,000 tons. The year's cocoa crop, at an estimated 12,000,000 lb., was 8,000,000 lb. less than the previous year. The United Kingdom government made a Development and Welfare grant of 500,000 British Caribbean dollars toward the cost of a land settlement scheme. A department of co-operative development was established. In May, four of the bases leased to the U.S.A. were provisionally handed back to the colony, 22,000 ac. thereby becoming available for cultivation. New installations at the oil field at Point-a-Pierre, completed in August at a cost of \$24,000,000, included the colony's first catalytic cracking plant. A large cotton mill and a knitwear factory were opened during the year.

Legislation was passed to vest executive powers of local government in the colony's county councils.

The cost of living continued to rise, and a permanent com-

mittee was set up to study the question. Prices calculated at 100 in January, had risen to 106.6 in August.

A colony-wide attack on tuberculosis by means of B.C.G. vaccination was undertaken with the help of the U.N. International Children's Emergency fund. During the two-year campaign 400,000 persons were to be examined and about 250,000 vaccinated.

Education.—Pupils enrolled (1951): elementary 120,847; secondary 5,882. Government expenditure, B.W.I. \$5,344,000.

Finance and Trade.—Monetary unit: British Caribbean dollar, valued at U.S. \$.58½. The following data are in British Caribbean dollars. Budget (1952 est.): revenue \$56,115,000; expenditure \$60,384,500. Foreign trade (1951): imports \$218,639,400; exports incl. re-exports \$214,746,700. Production (1951): petroleum 20,843,000 bbl.; asphalt 154,705 tons; rum 2,277,000 proof gal.; cocoa (delivery for export) 7,705 tons. Sugar crop (1952) 140,724 tons. (P. H.-My.)

Tripolitania: see LIBYA.

Trolley Coaches: see ELECTRIC TRANSPORTATION.

Tropical Diseases. **Malaria.**—The extensive use of residual insecticide sprays such as DDT had demonstrated the biologic and economic feasibility of nation-wide programs to eradicate malaria. In Ceylon, for example, where such a program was started in 1946, the death rates which ranged from 854 to 880 per 100,000 during the period from 1940–46 were reduced to 215 per 100,000 in 1950.

The adaptation of the parasites of falciparum (aestivo-autumnal or malignant tropical) malaria to man apparently is less complete than is that of vivax (simple tertian) malaria. In the former infection the stages of the parasite in the tissues, developing immediately after inoculation by an infected anopheline mosquito, either disappear or become nonfunctional after producing the first brood of forms in the circulating blood. These forms are produced only once in the course of any given infection. Definitive cure, therefore, may be obtained by appropriate treatment of the acute clinical attack. With vivax malaria, on the other hand, the tissue stages persist and give rise to successive broods of the blood forms at intervals which account for the periodic relapses of the disease.

Important advances were made in treatment, especially of vivax malaria. In this infection definitive cure is dependent upon elimination of the tissue forms which are responsible for the successive broods of blood forms producing the relapses. Chemical compounds belonging to the 8-aminoquinoline group were found to be effective against the tissue forms. One of these, primaquine, was shown to be sufficiently active and with low enough toxicity to warrant extensive clinical use. Neither this preparation nor the related compounds, however, are active against the blood forms of the parasite. Chloroquine (Aralen) is the drug of choice against the latter and is, therefore, the preferred drug for the treatment of acute vivax malaria. Definitive cure of vivax malaria was achieved by the combined use of chloroquine and primaquine. The former drug continued to be the most effective agent for suppressive treatment.

Yellow Fever.—The recent extension of jungle yellow fever into Central America called attention to the potential danger of "yellow jack" in the western hemisphere. In 1948 and 1949 fatal cases of the disease were identified in Panamá. The following year the first case on the Atlantic side of the isthmus was reported, and in 1951 a case was found at Almirante, well up the Atlantic coast. Yellow fever also appeared in epidemic form in two localities on the Atlantic side of Costa Rica. Mouse protection tests using the blood from wild monkeys showed that 12% of the animals examined in the state of Chiapas, Mex., were immune to the infection, and consequently that the virus of jungle yellow fever is present in the forest areas of that region.

The occurrence of an epidemic of jungle yellow fever in 1951 among new settlers in the state of Goiás, Braz., with about

2,000 cases and several hundred deaths emphasized further the importance of this disease as a public health problem. It constituted a permanent potential source of the virus for the infection of towns and cities harbouring the vector mosquito *Aedes aegypti*. It had become abundantly apparent that protection against the classical urban yellow fever epidemics of the past century depended upon constant and continuing efforts directed to the vaccination of exposed populations and the eradication of the *Aedes aegypti* mosquito in all towns and cities situated in close proximity to forests in which the infection is known to exist.

Schistosomiasis.—The demonstration of an endemic focus of schistosomiasis in Santo Domingo constituted further evidence of the increasing public health problem which this disease presents.

The dinitrophenol compounds are the most effective molluscicides for the eradication of these intermediate hosts. Although they are toxic to fish and other aquatic life, they do not appear to be harmful to domestic animals in the concentrations required for control operations. Such operations, however, must be conducted over a considerable period of time. It was shown that even after a series of applications of the chemical a few snails remain and in the absence of continued treatment these can soon repopulate the area.

Filariasis.—Additional evidence had been accumulated to indicate that the severe complications of filariasis such as elephantiasis depend upon constantly repeated infections over a prolonged period of time. The severity of the resulting disease appears to be related to the total number of adult filarial worms in the patient's body, and the number of microfilariae in the circulating blood is not necessarily an index of the intensity of such infection.

Further studies conducted in the Society Islands demonstrated the value of hetrazan both for treatment and control of spread of the infection. The drug significantly reduced the prevalence of microfilaria-positive blood films, and greatly reduced the numbers of microfilariae in the blood of patients who remained positive after treatment. However, hetrazan did not appear to reduce the frequency or severity of clinical filariasis.

The eradication of filariasis was shown to depend upon effective co-ordination of treatment of infected individuals, sanitation and the use of insecticides to eliminate the mosquitoes responsible for the spread of the disease.

Onchocerciasis.—In onchocerciasis, the blinding filarial disease of Africa and the coffee-growing regions of Guatemala and Mexico, hetrazan did not prove to be as effective as had been hoped. Although the drug caused the microfilariae to disappear for a time, this effect was temporary and it did not appear to affect the adult worms. When typical nodules in the skin were removed surgically three to six months after treatment, little if any damage to the adult worms was demonstrable.

A new drug, suramin, appeared to have greater promise. Injection of this preparation into the blood stream of infected individuals was shown to be followed by death of the adult filarial worms.

Leprosy.—The introduction of the sulphones for the treatment of leprosy had brought about a profound change in the prognosis of the disease. Prior to this new treatment the patient suffering from the malignant lepromatous type of the disease had to be isolated. Now he may continue his work while undergoing therapy.

Two preparations received particularly favourable comment: DDS (diaminodiphenyl sulphone) and Diasone (sulfoxone sodium). Analysis of the results obtained in the treatment of 1,430 cases with the latter drug showed improvement in 74.8%. While all stages of leprosy were benefited, progress was more

favourable when therapy was started early.

The sulphones are likewise considered important in the control of the disease, since they cause rapid healing of ulcers of the skin and mucous membranes and prevent to a large extent shedding of bacilli from the body. (See also CHEMOTHERAPY; WORLD HEALTH ORGANIZATION.)

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(T. T. M.)

Trucial Sheikhs: see ARABIA.

Truck Crops: see VEGETABLES.

Trucks: see AUTOMOBILE INDUSTRY; MOTOR TRANSPORTATION.

Truman, Harry S. (1884–), 33rd president of the United States, was born at Lamar, Mo., on May 8. (For his early career, see *Encyclopædia Britannica*.) He was elected to the U.S. senate in 1934, and re-elected in 1940. Elected vice-president in 1944, he became president on the death of Franklin D. Roosevelt on April 12, 1945. He was elected president on Nov. 2, 1948.

Truman surprised Democratic party leaders on March 29, 1952, when he said at a Jackson-Jefferson dinner at Washington that he would not seek re-election. At the Chicago convention in July he threw his support to Gov. Adlai E. Stevenson of Illinois, and after the latter received the nomination, Truman campaigned for him vigorously, travelling an estimated 18,000 mi. and making more than 200 speeches.

Foreign affairs continued to be a major problem for the president in 1952. Despite protracted armistice negotiations, the Korean war dragged on and the toll of United States casualties continued to mount. In his state-of-the-union message to congress, Truman declared that a world war still threatened, and about \$50,000,000,000 of his \$85,000,000,000 budget was allocated to national defense. In his October campaign speeches, however, he said that the balance was swinging in favour of the "free world" and that the probability of actual conflict had become more remote.

Truman's Fair Deal legislative program suffered its usual fate on Capitol Hill, no major proposal of his being enacted. Amid sharp controversy, congress overrode his veto of the McCarran-Walter act, which tightened immigration laws and continued the

existing basis of national origin quotas. The administration's alleged softness toward Communists and fellow-travellers was cited as evidence of need for this legislation and for stricter security tests. Truman also vetoed a measure vesting ownership of tidelands in the states, and this assertion of federal authority, which was upheld in the senate, became an issue in the presidential campaign.

Congressional exposure of corruption and political favouritism in several executive departments, notably the Justice department, Internal Revenue bureau and the Reconstruction Finance corporation, forced a cabinet shake-up. Although Truman had approved the appointment of Newbold Morris of New York as an outside investigator and clean-up man, Morris was summarily dismissed by Attorney General J. Howard McGrath in a disagreement over a questionnaire concerning the income of justice department officials. Truman immediately requested McGrath's resignation, and replaced him with Judge James P. McGranery of Philadelphia, Pa.

Labour troubles beset the White House when, in March, the Wage Stabilization board recommended a wage increase and union shop for striking C.I.O. steel workers. Charles E. Wilson, director of the Office of Defense Mobilization, criticized the recommendation as an inflationary threat and, when Truman upheld the board, he resigned. He was succeeded by Henry H. Fowler, former head of the National Production authority. As the strike continued, Truman ordered federal seizure of the steel plants under what he called the "inherent powers" of the presidency. In a sharp judicial rebuke, Judge David Pine of the U.S. district court at Washington held this action unconstitutional, and he was upheld by the U.S. supreme court in a 6 to 3 decision. Several impeachment resolutions were introduced in the house during this controversy.

A similar predicament arose to embarrass the Democrats during the fall campaign. After John L. Lewis, United Mine Workers president, had won a \$1.90-a-day increase for his men from the coal operators, the Wage Stabilization board reduced it to \$1.50. When the miners walked out in protest, Truman invited Lewis to the White House, and arranged for resumption of work pending a final settlement.

Truman's plans for his future career were indefinite, although he frequently expressed a desire to write, lecture and teach on behalf of world peace. He warned that he would always take an active interest in politics, for, as he once said, "I am a politician and proud of it!" (See also ELECTIONS, U.S.; POLITICAL PARTIES, U.S.; UNITED STATES.) (R. Tu.)

Trust Territories. These include former German colonies and islands which became mandates after World War I and trust territories after World War II; South-West Africa, which remained mandated; and the former

Trust and Mandated Territories

Territory	Area (in sq.mi.)	Population	Administering Authority
South-West Africa*	317,725	(1951 cen.) 430,354	Union of South Africa
Togoland (Br. Adm.)	13,041	(1951 est.) 404,000	United Kingdom
Togoland (Fr. Adm.)	20,463	(1951 est.) 1,015,000	France
Cameroun (Br. Adm.)	34,081	(1951 est.) 1,000,000	United Kingdom
Cameroun (Fr. Adm.)	170,230	(1951 est.) 3,100,000	France
Tanganika	362,688	(1951 est.) 7,827,000	United Kingdom
Ruanda-Urundi	20,916	(1951 est.) 3,905,000	Belgium
New Guinea, Territory of:			
Northeast New Guinea	93,000	(1951 est.) 1,103,000	Australia
Bismarck archipelago			
Certain of the Solomon Islands (Bougainville, etc.)			
Western Samoa	1,133	(1951 cen.) 82,493	New Zealand
Nauru	8	(1951 est.) 3,000	Australia
Pacific Islands†			
Mariana or Ladrone Islands (except Guam)	687	(1952 est.) 57,205	United States
Caroline Islands with Yap Island and Palau Island			
Marshall Islands			
Italian Somaliland	198,000	(1951 est.) 1,247,000	Italy

*League of Nations mandate. †Former Japanese mandates.

Italian Somaliland which became a trust territory with Italy administering on April 1, 1950. Total area: 1,231,972 sq.mi.; total population c. 20,174,000.

History.—In 1952 the United Nations Trusteeship council had to hold three separate sessions, in order to carry out its duty of supervising, by means of comprehensive and continuous study, the political, educational and social development of 11 trust territories, presenting extraordinary differences in stages of civilization, climate and economic resources. The reports of visiting missions, the annual reports of the administrations, the actual presence of experts from all the trust territories to answer questions and give full information, the growing number of petitions all combined to make the trusteeship council a body possessing immense experience, and able to speak with unique authority on the whole range of questions involving the future of these vast and in many cases backward areas.

A particularly urgent case seemed to be Somaliland. There conditions were unusual. Italy, the administrative power, was not yet a member of U.N. and was being assisted by a U.N. advisory council; within a fixed period of eight years the country was to achieve independence. Careful consideration was given to the annual and visiting mission's reports and a large number of recommendations were made emphasizing the urgency for taking further steps toward the integration of the Somalis, of whom a majority were still nomadic, into the territory's social and economic life.

The wide range of far-reaching problems with which the trusteeship council was faced and their bearing on the trusteeship system as a whole, can be appreciated by the following examples. In the Pacific Islands the most urgent task was to create a sense of unity in 96 scattered islands, with a great variety of indigenous peoples and languages. A secondary task was to plan for the economic future of an area where resources were dwindling. The same planning for the future was necessary in the case of the smallest trust territory, Nauru, whose phosphates, the sole source of wealth, would be exhausted in 70 years. In Western Samoa real progress had been made toward self-government and the problem was becoming one of more education both at home and abroad. In New Guinea, the most backward of the trust territories, the urgent need was to bring the whole area under administrative control. In Tanganyika where a small population was spread over a vast area and where conditions of soil and climate showed extraordinary extremes, it was an immense task to promote the territorial consciousness, necessary for the attainment of real independence. A remarkable point in the administration's annual report was the adoption of measures aiming at the improvement of conditions for women and the removal of the load of taboos. In Ruanda-Urundi, where the year's record of the administration (Belgian) won special commendation from the trusteeship council, the duality of the territory and the survival of some of the old hostility between the two parts still remained problems to be solved.

Two larger questions, already considered at earlier sessions of the trusteeship council, came up for review. They involved the pooling of certain administrative services in Ruanda-Urundi and those in Belgian Congo, and of similar services in Tanganyika and those in Kenya and Uganda. The council approved the benefits derived from this interstate co-operation which in their view involved no political fusion whatever. In two instances the council singled out for commendation the raising of funds by the administration of a territory for special purposes: these were the native welfare fund for economic and social development in Ruanda-Urundi and the trust fund for meeting the changes in the economic situation of Nauru in the near future.

The trusteeship council also took occasion to tighten up its

own machinery. In one case more effective methods for dealing with petitions were worked out. A special committee was set up to examine petitions both before and during the council's sessions, in two stages: a preliminary stage dealing with the facts and further information if required, a second for more final examination and recommendation of action by the trusteeship council as a whole. In another, a special committee was set up to improve the functioning of the periodic visiting missions, one of the most important innovations of the trusteeship system. (See also FRENCH WEST AFRICA; SOMALILAND, ITALIAN; UNITED NATIONS.) (M. Fe.)

Trust Territory of the Pacific Islands: see MARSHALL, CAROLINE AND MARIANA ISLANDS.

Tuberculosis. *Diagnosis.*—Never before was so much tuberculin testing in humans reported as during 1952. Among 41,815 tested in Manila, Phil., from 43% to 61% of first grade school children and 100% at the age of 18 reacted. In Israel, testing of 365,298 from birth to 30 years of age revealed approximately 156,400 reactions. In Ecuador, among 646,702 children and young adolescents, 11% at the age of 5 and 48% at the age of 15 reacted. In Tunisia, among 601,502 persons from birth to 24 years tested, 21% at age 5 and 51% at age 15 reacted.

The Medical Research Council of Great Britain reported testing of 94,000 children and young adults. In the rural areas of England and Wales the percentage of tuberculin reactors ranged from 20 at the age of 5, to 56 at the age of 20. In the urban areas of southern England the percentage increased to 9 and 59 for the same ages, and in the other urban areas, mainly northern, it rose from 13% at 5 to 74% at 20.



TEMPORARY CLINIC for vaccination against tuberculosis in a village in India, with signs assuring parents that inoculation was harmless. The continuing campaign to control tuberculosis in India included testing, inoculation and mass radiography in 1952

In Syria, among 175,926 children and young adults, more than 60,000 reacted. In Austria, 21% of 669,848 children and adolescents reacted. Among 671 persons of 25 years of age or younger tested in the Willow Bunch area of Saskatchewan, only 5% reacted.

Incidence and Mortality.—In most parts of the world the number of persons reported to have tuberculosis had undergone only slight change in recent years. K. Torning (Denmark) attributed this in Copenhagen to the intensity of case finding so that a much larger percentage of existing cases were known and were accessible to treatment than was the case 30 years before.

Y. Chasis stated that in Israel 4,000 persons suffered from tuberculosis. A new centre was opened near Jerusalem, including a 225-bed hospital. Israel had 108 beds per 100,000 population and planned to increase the total to 130. H. del Castillo said that among the 20,000,000 people of the Philippines, 300,000 had active tuberculosis. At Istanbul university, Turk., examination of 10,000 students revealed that 21 out of every 1,000 needed treatment, whereas among 94,000 students in 16 universities in France, only 7 out of every 1,000 required treatment.

The 1951 tuberculosis mortality rate was 20.1 per 100,000 in the United States. This was a drop of 9% in a year and was the lowest rate of any major nation in the world. In eight states the rate was less than 10 per 100,000. The lowest was Iowa with 6.3. The highest rate on the mainland was 64.5 in Arizona. In Puerto Rico it was 117 per 100,000.

Treatment.—Denmark had seven beds per annual death from tuberculosis. Norway had approximately six and some states in the United States had nine beds per death. The United States Veterans administration had 15,077 beds in operation for tuberculous patients.

Patients leaving hospitals against medical advice presented a serious problem. E. C. Beacham reported that from the tuberculosis division, Baltimore City hospital, Md., in 1947, 66% of the discharges were irregular, but in 1950 only 12% were irregular. G. J. Drolet said that in 24 institutions caring for the tuberculous in New York city, 25% of the patients left without medical consent.

Drugs were extensively employed in the treatment of tuberculosis. Impressive results were reported from the treatment of tuberculous animals with isonicotinic acid hydrazide. Large numbers of tuberculous people throughout the world were also given this drug, and beneficial effects from the standpoint of control of symptoms were reported. The exact action of the drug was not yet known.

Tuberculosis is so capricious that long periods of observation are necessary before final conclusions can be drawn concerning any form of treatment. One gram of streptomycin every three days, and 12 g. of *p*-aminosalicylic acid daily was regarded as the best drug treatment. In some cases these drugs had been employed for a year or more and it seemed possible that they might ultimately destroy tubercle bacilli.

R. Debre (France) reported on 262 cases of tuberculous meningitis seen between 1947 and 1949, of whom 127 were alive in Feb. 1951. The highest mortality (75%) occurred among those less than 1 year old, and the lowest (37.5%) among those of 6 to 20 years of age. Although none of the cases had been followed long enough to be certain, he believed this disease could be cured by streptomycin.

By 1952 no drug had replaced any of the standard methods of treating tuberculosis. Cortisone and ACTH appeared to have no place in the treatment of tuberculosis, and were thought possibly to be hazardous when administered for coexisting conditions in persons with active tuberculosis.

In some places lung collapse procedures, such as artificial pneumothorax and extrapleural thoracoplasty, gave way to sur-

gical removal of the diseased part. Other workers continued to use collapse methods and surgical resection if later indicated. R. H. Overholt *et al.* (Brookline, Mass.) reported on 426 persons who had undergone pulmonary resection between 1934 and 1950. During the streptomycin era (since 1947) improvement had been so great that the statistics of previous years were only of historic interest. They concluded that pulmonary resection was a useful tool but was only one of many. Frank Dolley *et al.* (Los Angeles, Calif.) reported that of 84 resections between 1947 and 1950, 54 gave satisfactory results, 21 were unsatisfactory and 9 died. B. J. Ryan *et al.* (Sunmount, N.Y.) stated that in 30 consecutive wedge or subsegmental resections the immediate results were excellent, but they emphasized that at least five years of observation were necessary before conclusions could be drawn.

K. Torning (Copenhagen, Den.) said it was too early to determine the true value of pulmonary resections. He emphasized that it was impossible to compare results from resections made under the protection of modern drug treatment with the results of artificial pneumothorax and extrapleural thoracoplasty in the period before drug treatment was introduced. He said that artificial pneumothorax remained the dominating type of collapse treatment, and pointed out that in the past, when properly used even without drug treatment, it resulted in a lasting effect in about 80% of patients.

Prevention.—Infection with the bovine type of tubercle bacillus is as serious as with the human type; therefore preventive measures must include control of the disease in animals. J. Meyer *et al.* presented evidence that in five Swiss cantons the bovine type of tubercle bacillus was responsible for one-third of all the cases of tuberculosis in man. They cited other cantons where the disease had been almost entirely eradicated from cattle and where practically no person was found to have the bovine type of tuberculosis. It was believed that the high incidence of reactors among children in rural areas of England was caused by the bovine type of tubercle bacillus.

Numerous reports were made on the administration of BCG (Bacillus-Calmette-Guérin). The World Health organization demonstrated that a team of one physician and six technicians could cover a population of more than 100,000 persons a year. In India about 300 doctors and vaccinators were engaged in BCG vaccination activities. The International Tuberculosis campaign made its final report on work done from July 1948 through June 1951. The tuberculin test was administered to 36,694,983 persons in 23 countries, of whom 16,650,624 received BCG. The United States Indian bureau announced that in 50 Indian service hospitals all babies were to receive BCG during the first week of life. Moreover, plans were under way to administer BCG among Indian children who had entered school since 1949.

M. I. Levine called attention to numerous deficiencies in the existing knowledge of BCG. E. Groth-Petersen believed that the declining morbidity among children from 7 to 14 years in Denmark was largely the result of wholesale BCG vaccinations in schools. This opinion was countered by reports of greater decreases among children of the same age in places where BCG had not been employed. (See also CHEMOTHERAPY; WORLD HEALTH ORGANIZATION.) (J. A. My.)

Tungsten: see MINERAL AND METAL PRODUCTION AND PRICES.

Tunisia. A French protectorate in North Africa, Tunisia is situated between Algeria (west) and Tripolitania (east). Area: *c.* 48,332 sq.mi. Pop. (1946 census): 3,230,952, largely (87.6%) Moslem and Arabic speaking but including 239,249 Europeans (143,977 French citizens [many Italian-born] and 84,935 Italians) and 71,543 Jews; (1951 est.)



FRENCH TROOPS inspecting a train wreck in Tunisia early in 1952. The incident followed various acts of sabotage to railroads and other lines of communication in the area, believed by French officials to be the work of Moslem terrorists

3,500,000. Chief towns (1946 census): Tunis (cap., 364,593, incl. 119,222 Europeans); Sfax (54,637); Bizerta (39,327); Sousse (36,566). Ruler, Bey Mohammed el-Amin. Prime ministers in 1952: Mohammed Shenik and (from March 28) Salah ed-Din ben Mohammed Bakkush. French resident general, Jean-Marie-François de Hauteclouque.

History.—The agitation that had begun in Dec. 1951 continued in Jan. 1952. The Shenik ministry made a complaint against France to the United Nations. On Jan. 13 Louis Périllier was succeeded by Jean de Hauteclouque as resident general. The leader of the Neo-Destour party, Habib Bourguiba, was put under surveillance. Rioting broke out, in the course of which several Frenchmen, including the district commander at Sousse, were killed. Countermeasures were taken in February, with particular severity in the Cape Bon region.

In March the bey agreed to dismiss the Shenik ministry, which was succeeded by Salah ed-Din Bakkush's government. Tranquillity was restored in April. The Tunisian complaint was ruled out of order by the U.N. Security council. The French government proposed reforms as follows: Tunisian sovereignty was to be recognized with a gradual advance toward internal self-government; Tunisian assistant-directorships were to be set up beside the French directorships; public offices were to be reserved in principle for Tunisians; the legislative power was to lie with the bey, assisted by two councils (one, legislative, entirely Tunisian, the other, financial, half Tunisian and half French); elections were to be held for municipal councils and caidate assemblies.

This plan met with sharp criticism in the national assembly: the right wing thought it went too far, the left not far enough. The bey refused to approve the reforms and convened 40 notables to examine them. In August he rejected them. Tentative discussions went on while the Arab states and certain Asiatic governments lodged a fresh complaint with the United Nations. The French population of Tunisia objected to the idea of their being excluded from public affairs on the grounds that they paid more than half the taxes and that the country depended on France for financial investments and as a market for its primary

products (oil, wine and phosphates). The Destour party on the other hand was against any idea of joint sovereignty.

The rehabilitation of the wine-growing industry made progress. The budget, however, showed a deficit of more than 7,000,000,000 fr. (See also UNITED NATIONS.)

Education.—Pupils 200,000 (incl. 38,000 French). Lycées and colleges 15. Institute of Higher Studies at Tunis.

Finance and Banking.—Note-circulation 21,000,000,000 fr. Monetary unit: Tunisian franc=metropolitan franc. U.S. \$1=350 fr.

Foreign Trade.—(1951) Imports 59,495,000,000 fr. (including 45,063,000,000 fr. from France); exports 35,212,000,000 fr. (including 15,907,000,000 fr. to France), mainly phosphates (5,745,000,000 fr.), alfalfa grass (5,278,000,000 fr.), olive oil (3,674,000,000 fr.), cereals (2,900,000,000 fr.), iron ore (1,929,000,000 fr.), wine (1,540,000,000 fr.).

Transport and Communications.—(1950) Railways 1,350 mi.; roads 8,694 mi.; motor vehicles 21,500. Ships entered (all ports): 2,928. Aircraft landed: 5,325. (Hu. De.)

Tunnels. Demands for increased electric power, more water for agricultural and human consumption and better transportation routes continued to maintain tunneling activity at a high level throughout the world in 1952.

North America.—The biggest 1952 tunneling news in North America was the initiation in August of the third tube of New York's Lincoln vehicular tunnel under the Hudson river, but two Canadian hydroelectric tunnels and a New York water-supply tunnel continued to rate as the continent's major projects.

One Canadian tunnel project, at Niagara Falls, Ont., was 5 mi. long, consisting of a pair of 45-ft. finished-diameter bores. Work on the second bore began in 1952, the first having been started a year earlier. They would conduct power water that was made available by a 1950 U.S.-Canadian treaty that divided available remaining Niagara river water between the two countries. The other Canadian project was the 10-mi. Kemano tunnel, under way in British Columbia. Having a diameter of 25 ft., it would conduct water to an aluminum company's power plant. Also for hydropower in the continent's northern parts was Ek-lutna tunnel, near Anchorage, Alsk. Five miles long and 9 ft. in diameter, it was one-fourth complete in 1952.

Irrigation continued to be the major objective for tunneling in western United States. The longest tunnels were 5-mi. Tecolote, near Santa Barbara, Calif., and 5.5-mi. Pole hill, part of the Colorado-Big Thompson project in north-central Colorado. The former, which also would provide domestic water, was three-fourths complete. The latter was complete at midyear. Three

other Colorado-Big Thompson tunnels, totalling 5 mi. in length, were completed during the year and another, 1.25 mi. long, was almost complete. These tunnels had diameters of 8 to 10.5 ft. Somewhat larger was the 14-ft. diameter, 1.75-mi. Frenchman hill tunnel in Washington's Columbia basin project, which was three-fourths complete. Duchesne tunnel in Utah, 5.9 mi. long, was completed during the year. Another tunnel completed in western U.S. was a 2-mi. bore for draining and rehabilitating metal mines in the Leadville, Colo., region.

Domestic water supply was the objective of tunneling operations in the Catskill mountains 100 mi. N.W. of New York city. There, driving neared completion in the 25-mi. East Delaware tunnel, and lining was finished in the 6-mi. Neversink tunnel. Each would bring Delaware river watershed water to Rondout reservoir, in the Hudson river watershed, from which it would go to the city via the already completed Delaware aqueduct.

Vehicular tunnels, in addition to the third Lincoln tube, were under construction at three widely separate locations in the U.S. At Norfolk, Va., a 2,100-ft. sunken-tube tunnel under the Elizabeth river was opened to traffic in May, becoming the tenth subaqueous tunnel in the U.S. A similar tunnel at Baytown, Tex., was in place, but work continued on approaches. Twin-tube Broadway tunnel, in San Francisco, Calif., was substantially complete. In Havana, Cuba, a short vehicular tunnel under a navigable channel was built by an unusual method. Half of it was built in an open cofferdam extending from one shore; then the cofferdam was removed to allow rerouting of river traffic over the completed tunnel portion, and another cofferdam was built out from the other shore, to contain construction of the second half. One railroad tunnel, 0.6 mi. long for the Baltimore and Ohio railroad in West Virginia, was opened to traffic.

South America.—Venezuela and Peru had active tunnel projects in 1952. Two tunnels for a new highway between Caracas and its port city of La Guaira were driven as twin two-lane structures. One, 5,900 ft. long, was holed through; the other, 1,560 ft. long, was complete. In Peru, work was 80% complete on 11 tunnels of the Rio Quiros irrigation system. The longest tunnel would be 3.1 mi.; the total length of the tunnels would be 5.4 mi.

Europe.—Extensive tunneling was included in 23 different schemes of the North of Scotland Hydro-Electric board. In all there were to be 47 mi. of main tunnels and 43 mi. of subsidiary tunnels. The longest of these was the 6-mi. Errochty, which was completed in March 1952. The Invergarry and Quoich tunnels, both 2.8 mi. long, were one-fourth and three-fourths completed, respectively, during the year, and the 2.1-mi. Lawers tunnel was one-fourth completed. The principal tunneling works in England were found in improvements to the Manchester corporation waterworks. There, the 5.3-mi. Haslingden and 6-mi. Walmersley tunnels were completed during 1952. The Marl hill tunnel, 2.7 mi., was two-thirds complete.

Viella tunnel, begun in 1926 and the final link in a Spanish Pyrenees highway between Port Bou on the Mediterranean and Fuenterrabia on the Atlantic, was fully excavated and ready for paving and waterproofing work. Its length was 3.1 mi. Another vehicular tunnel, 3,600-ft. Croix Rousse, in Lyons, Fr., was opened in 1952.

The remainder of European tunnels were for hydropower. In Switzerland, of 45 mi. of tunnels in the Maggia valley project, 80% were driven and 45% were completed. This project included extensive rock excavations for underground power plants. In France, driving was two-thirds complete on the 7.25-mi. Isère-Arc tunnel, which also would feed an underground plant. This tunnel would have a 24 ft. high horseshoe section. The largest of a scheme of 15 hydropower tunnels in south-central Norway was the 15-mi. Vinstra tunnel, completed during the

year. Sweden completed the Tasan project, which included 7 mi. of tunnel.

Africa.—At least one hydropower project in Africa involved tunneling. It was the Wadi Agrioun project, in Algeria, for which a 5.2-mi. conduit was completed in 1952. In French Morocco, the 10-mi. Abda Doukkala tunnel was completed and ready to deliver irrigation water diverted from the Oum er Rbia river.

Australasia.—In New Zealand, driving began on the 5.5-mi. Rimutaka tunnel, which would shorten the rail distance between Wellington and Wairarapa. Two rail tunnels were under construction in Australia—both in New South Wales; and three tunnels in the Kiewa hydroelectric project were completed during 1952.

(R. H. Ds.)

Turbojets and Turboprops: see AVIATION, CIVIL; JET PROPULSION.

Turkey. A Republic in the southeastern Balkans and Asia Minor, Turkey is bounded west by the Aegean sea, northwest by Greece and Bulgaria, north by the Black sea, northeast by the U.S.S.R., east by Iran and south by Iraq, Syria and the Mediterranean. Area: 296,185 sq.mi. (including 9,256 sq.mi. in Europe). Pop.: (1950 census) 20,934,670, including 1,626,229 in European Turkey. Language (1935): Turkish 86.8%, Kurdish 9.3%, Arabic 0.9%, Greek 0.7%, Armenian 0.4%. Religion (1945): Moslem 98%; Christian 1.4%; Jewish 0.4%. Chief towns (1950 census): Ankara (cap., 286,781); Istanbul (1,018,468); Smyrna (Izmir) (362,340); Adana (117,799); Bursa (100,007); Eskisehir (88,459). President of the republic, Celal Bayar; prime minister in 1952, Adnan Menderes.

History.—Home politics were uneventful during 1952, because of the weakness of the opposition. In foreign relations, the year saw Turkey admitted as a full member of the North Atlantic Treaty organization (NATO), the first result of which was its attendance at the Lisbon conference. This led to the formation of the southeastern Europe command, the headquarters of which was fixed near Smyrna (Izmir). Adm. Robert Carney (U.S.), commander in chief of the southeastern Europe command, and Maj. Gen. David Schlatter, commander of the NATO air forces in southern Europe, attended the Turkish army manoeuvres in September. There was a series of visits of high-ranking U.S. and British officers to Ankara. Gen. Dwight D. Eisenhower went in March; Field Marshal Viscount Montgomery of Alamein went in May and again in September; Gen. Matthew Ridgway included Turkey in his round of visits upon accepting the supreme command of the NATO forces.

With the United States, relations remained particularly intimate because of the help, military, financial and economic, that the U.S. had given Turkey. Relations with Great Britain remained as friendly as ever. King Paul of the Hellenes and Queen Frederika paid an official visit to Ankara in June and received an enthusiastic welcome. On Aug. 5 visas between Turkey and Greece were abolished. Yugoslavia concluded a commercial agreement with Turkey, taking 100,000 tons of wheat in exchange for a variety of products.

With the Soviet Union and Bulgaria the war of nerves continued. Both these countries sent notes protesting that Turkey's association with NATO revealed aggressive intentions and was aimed against the U.S.S.R. and its allies. Meanwhile Bulgaria continued to create incidents on the frontier.

Traditional friendship was maintained with France, and relations with Italy became cordial. Friendship with Germany was restored. A German ambassador arrived, and there was a marked revival of Turco-German trade.

Turkey's attitude was always friendly toward the other Moslem countries, although it declined to take part in the World

Moslem conference held at Karachi in February. Treaties of friendship and commerce were concluded with Pakistan and India.

The government continued its policy of denationalization and encouragement of private enterprise and foreign investment. By 1952 there was foreign capital in seven major undertakings in Turkey. A notable enterprise was the Seyhan barrage, a £T30,000,000 scheme, in which U.S. and private native capital was invested.

Great progress was being made in agriculture, largely because of the vast sums contributed under the European Recovery program. The Bank of Agriculture granted no less than £T914,000,000 in loans to farmers. More than 450,000 ac. of land were earmarked for reclamation, and large areas were distributed to landless peasants.

The harvest was excellent and large quantities of wheat were available for export. The dispatch of chrome to the United States expanded, and that of carpets and wool doubled. The coal and iron and steel industries were expanding rapidly.

Between 1947 and 1952 the national income rose by 54% and was estimated in 1952 at £T11,000,000,000.

(See also INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT; MIDDLE EAST; NORTH ATLANTIC TREATY ORGANIZATION.) (MA. B.)

Education.—Schools (1950-51): primary 17,318, teachers 35,770, pupils 1,675,415; secondary 442, teachers 4,546, pupils 78,449; *lycées* 92, teachers 1,944, pupils 23,573; farming and handicraft 222, teachers 3,085, pupils 31,205; professional 88, teachers 1,257, pupils 21,684. Institutions of higher education (1950-51): 23 (including universities of Istanbul and Ankara with 1,431 teachers and 21,366 students), teaching staff 2,101, students 27,585. Illiteracy (1946): male 56.3%; female 83.2%.

Finance and Banking.—Budget: (1951 actual) revenue £T1,344,000,000, expenditure £T1,579,000,000; (1952-53 est.) revenue £T1,551,000,000, expenditure £T1,750,000,000. Currency circulation (Aug. 1952) £T1,310,000,000. Bank deposits (Dec. 1951) £T1,437,000,000. Gold and foreign exchange (Aug. 1952) U.S. \$180,000,000. Monetary unit: Turkish pound or lira with an exchange rate of £T7.84 to the pound sterling and £T2.80 to the U.S. dollar.

Foreign Trade.—(1951) Imports £T1,125,000,000; exports £T879,400,000. Main sources of imports (1951): Germany 24%; U.K. 17%; U.S. 12%; France 6%. Main destinations of exports: Germany 27%; U.S. 21%; U.K. 8%; Italy 4%. Main imports: machines and vehicles 31%; iron and steel and manufactures 10%; cotton yarn and fabrics 11%; petroleum 8%. Main exports: cotton 25%; tobacco 21%; fruit and nuts 13%; nonferrous metals and manufactures 10%.

Transport and Communications.—Roads (1949): 13,530 mi., including 7,900 mi. all-weather roads. Licensed motor vehicles (Dec. 1950): cars 10,071, commercial vehicles 16,386. Railways (1949): 4,882 mi.; passenger-miles (1950) 1,350,000,000; freight ton-miles (1950) 1,573,000,000; freight carried (1950) 7,332,000 tons. Shipping (merchant vessels of 100 gross tons and over, July 1951): 230; total tonnage 423,971. Air transport (Turkish state airways, 1947): flights 6,712; miles flown 1,188,109; passengers flown 78,844. Telephones (1951): 65,150. Radio receiving sets (1950): 320,853.

Agriculture.—Main crops (metric tons, 1951, except as noted): wheat (1952) 6,400,000; barley (1952) 2,900,000; oats (1952) 380,000; maize (1952) 900,000; rye (1952) 650,000; potatoes 676,000; sugar (raw value) 207,000; tobacco 82,000; cotton (raw) 155,000; raisins 55,000; olives 236,000; olive oil 43,000; linseed 25,000; cottonseed 308,000; sunflower seed (1952) 110,000; sesame seed (1952) 30,000; soybeans 2,000; dry beans 79,000; hemp fibre 10,600; oranges and tangerines 82,000. Wine production (1952) 150,000 hl. Livestock (1951): cattle and buffaloes 11,268,000; sheep 26,121,000; horses 1,173,000; camels 108,000; mules (1950) 109,000; asses (1950) 1,633,000; goats 16,500,000; turkeys (1950) 1,200,000; chickens 19,858,000. Wool (clean basis, 1952) 30,000 metric tons. Meat (metric tons, 1951): 99,000 (including beef and veal, 40,000).

Industry.—Fuel and power (metric tons, 1951): coal 4,728,000; lignite 994,000; crude oil 19,000; electricity 114,000,000 kw.hr. Raw materials (metric tons, 1951): iron ore (metal content) 219,000; pig iron 154,000; steel ingots and castings 135,000; copper (smelter) 17,500; chrome (1950) 400,000; manganese ore (1950) 23,200; antimony ore (metal content, 1950) 454,000; salt 300,000; sulphur (1949) 3,100; boracite (1950) 7,100. Lumber (sawn wood, 1949 est.): softwood 308,000 cu.m.; hardwood 154,000 cu.m. Manufactured goods (metric tons, 1951): cement 400,000; cotton yarn 29,000; wool yarn 6,000; paper 24,000.

BIBLIOGRAPHY.—Malcolm Burr, *Tourist's Guide to Istanbul*, 2nd ed. (1952); Ernest Mamboury, *Istanbul Touristique* (1952); Eleanor Bisbee, *The New Turks* (1952).

Turkeys: see LIVESTOCK.

TVA: see TENNESSEE VALLEY AUTHORITY.

Twentieth Century Fund: see SOCIETIES AND ASSOCIATIONS, U.S.

Uganda: see BRITISH EAST AFRICA.

Ulcer: see STOMACH AND INTESTINES, DISEASES OF THE.

Unemployment: see CENSUS DATA, U.S.; EMPLOYMENT.

Unemployment Insurance: see SOCIAL SECURITY.

U.N.E.S.C.O. (United Nations Educational, Scientific and Cultural Organization): see EDUCATION; UNITED NATIONS.

Union of American Republics: see ORGANIZATION OF AMERICAN STATES.

Union of South Africa: see SOUTH AFRICA, THE UNION OF.

Union of Soviet Socialist Republics.

The federation of soviet socialist republics is a state covering parts of eastern Europe and of northern and central Asia. Area: 8,598,678 sq.mi., including 1,969,110 sq.mi. (23%) in Europe. Pop.: (1939 census) 170,467,572; (1950 est.) 201,300,000, including about 138,000,000 (68.6%) in Europe. In 1946 the Russians constituted about 51.3% of the population, Ukrainians 17.4% and Byelorussians 3.5%. None of the other nationalities, all non-Slavonic and most of them non-European, reached 3% of the total, the most important being the Turkish-speaking Uzbeks (2.85%). Religion: Russians, Ukrainians, Byelorussians and Moldavians are Greek Orthodox; Lithuanians are Roman Catholic; Latvians, Estonians and Karelo-Finns mainly Lutheran; Georgians have their own autocephalous Orthodox Church; Armenians are Christian; the indigenous inhabitants of Azerbaijan, the five central Asian republics and many autonomous territories (Tatar, Bashkir, Dagestan, etc.) are Moslem, and their number was estimated in 1939 at 24,000,000; Buryats and Kalmyks are Lamaist Buddhist. Chief towns (pop., 1939 census): Moscow (cap., 4,137,016); Leningrad (3,191,304); Kiev (846,293); Kharkov (833,432); Baku (809,347); Gorki (644,116); Odessa (604,223); Tashkent (585,005); Tiflis (519,175); Rostov-on-Don (510,253); Dnepropetrovsk (500,662). Eight towns had a population of more than 200,000 and 43 had more than 100,000.

Chairman of the presidium of the supreme soviet, Nikolai Mikhailovich Shvernik; chairman of the council of ministers, Joseph Vissarionovich Stalin (q.v.).

History.—Any faint hopes that might have been aroused by the tone of Jacob A. Malik's proposals for an armistice in Korea, in June 1951, that the Soviet Union was prepared to come to friendlier terms with the west, were dispelled in 1952 as it was realized that the "cold war" was to be continued—in

Union of Soviet Socialist Republics

Republic	Capital	Area (sq.mi.)	Population (1940 est.)
Russian S.F.S.R.	Moscow	6,533,584	108,800,000*
Ukraine	Kiiv (Kiev)	222,625	40,525,000†
Byelorussia	Minsk	80,154	9,000,000
Uzbekistan	Tashkent	157,336	6,282,400
Kazakhstan	Alma-Ata	1,063,242	6,146,000
Georgia	Tbilisi (Tiflis)	29,421	3,542,300
Azerbaijan	Baku	33,089	3,209,700
Lithuania	Vilnius (Wilno)	25,174	3,000,000†
Moldavia	Chisinau (Kishinev)	13,050	2,700,000§
Latvia	Riga	24,903	1,950,000
Kirghizia	Frunze	76,023	1,459,300
Tadzhikistan	Stalinabad (Dyushambe)	55,058	1,485,100
Armenia	Erivan	11,506	1,281,600
Turkmenistan	Ashkhabad	187,181	1,252,000
Estonia	Tallinn (Reval)	17,413||	1,117,300
Karelo-Finnish S.S.R.	Petrozavodsk	68,919	606,300§
		8,598,678	192,357,000

*According to the 1939 census the population of the Russian S.F.S.R. was 109,278,614. Its reduction was explained by the fact that the Karelian A.S.S.R. (469,145 inhabitants in 1939) formed with the areas ceded by Finland in 1940 a Karelo-Finnish S.S.R.

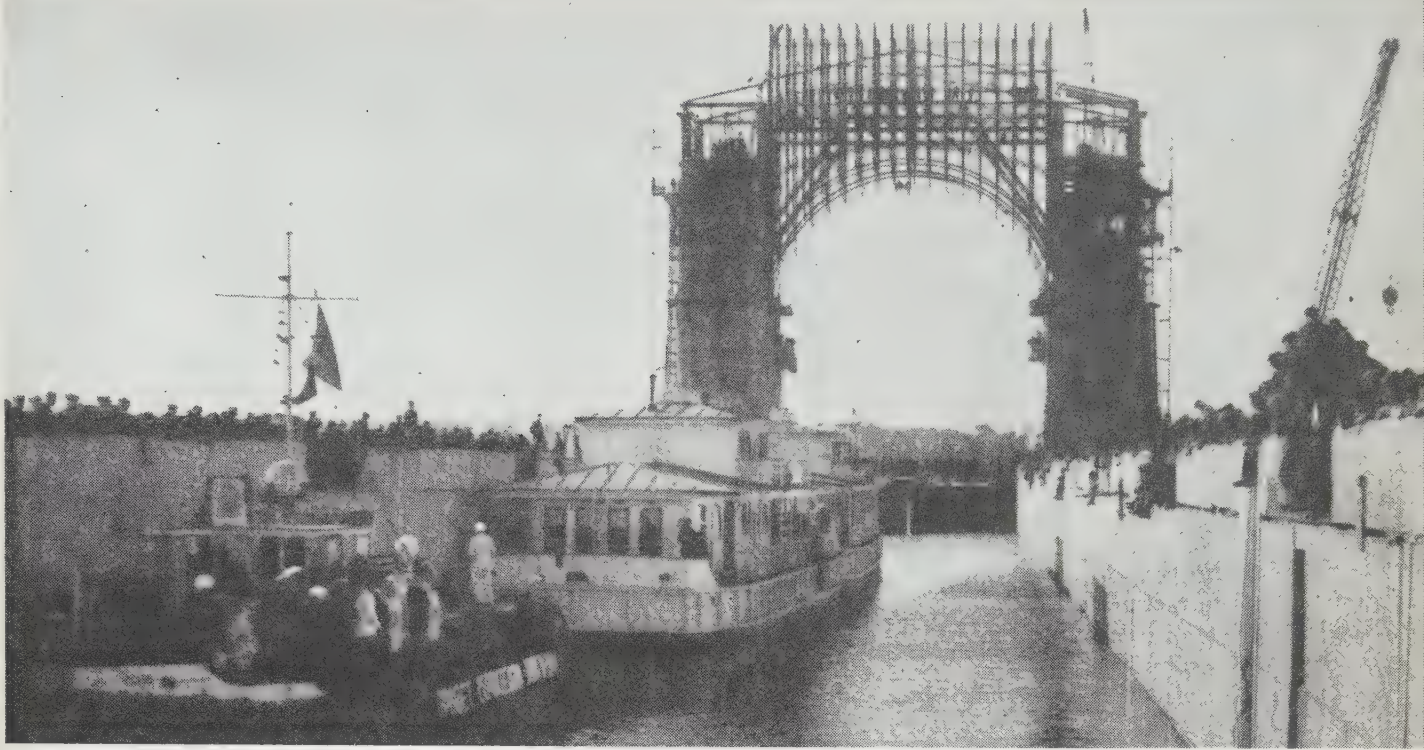
†Excluding the population of Subcarpathian Ruthenia (725,000), which was incorporated into the Ukrainian S.S.R. in 1945.

‡Excluding the population of the Klaipeda (Memel) territory which was incorporated with the Lithuanian S.S.R. in 1945.

§1941 official Soviet estimate.

||Estonian sources before 1940 gave the area of Estonia as 18,358 sq.mi.

Source: Areas and populations are taken from the *Bolshaya Sovetskaya Entsiklopedia: Soyuz Sovetskikh Sotsialisticheskikh Respublik* (Moscow, 1948). While all the areas are postwar, that is, including territorial aggrandizements in the west and east, population figures are in general those of the 1939 census, except for republics which were either increased by the 1939-45 annexations or formed after 1940. The order, as in the original, is according to the number of population.



FIRST SHIPS passing a lock of the Volga-Don shipping canal linking the Volga and Don rivers. Opened to passenger traffic in 1952, the canal was part of a trans-soviet waterway connecting the Black sea with the landlocked Caspian sea for the first time, and linking both with the White and Baltic seas in the north

some respects intensified—and the “iron curtain” maintained. In Europe a Communist German army was set up and the western occupying forces in Berlin were harassed and hampered; western proposals for peace treaties with Germany and Austria were rejected, as were Swedish protests at the shooting down of Swedish aircraft over the Baltic sea and French protests at interference with French aircraft flying to Berlin; Soviet diplomats in Stockholm and London were found to be implicated in cases of espionage. In spite of Stalin’s answer to a question from U.S. newspaper editors in April that “the peaceful coexistence of capitalism and communism is fully possible, given noninterference in the affairs of other states,” the Soviet Union continued to encourage the antiwestern movements in the middle east and north Africa, to supply arms to the Koreans and the Chinese in North Korea, and to give aid to the Communist terrorists in Malaya. A vehement campaign against the alleged waging of germ warfare by U.N. forces in Korea was carried to the United Nations and—by the Soviet Union’s sympathizers—into the lecture halls and pulpits of the west. At home antiwestern propaganda was maintained.

The Soviet public was encouraged by a slow but appreciable increase in the supply of consumer goods and by price cuts; by the progress of the great hydroelectric and irrigation schemes (of which the opening of the Volga-Don canal was an earnest); and by the announcement of a new five-year plan. The Communist party was reorganized at its 19th congress in Moscow in October.

Foreign Policy.—At the Lenin memorial meeting in Moscow on Jan. 21, in the main speech which had come to be regarded as setting the Soviet Union’s propaganda theme for the year, P. N. Pospelov, director of the Marx-Engels-Lenin institute, elaborated in Stalin’s presence on “the crisis of the entire colonial system of imperialism” and “the awakening of the peoples of Asia as evidence of the triumph of creative Marxism.” No force, he said, could now stop this accelerated development of

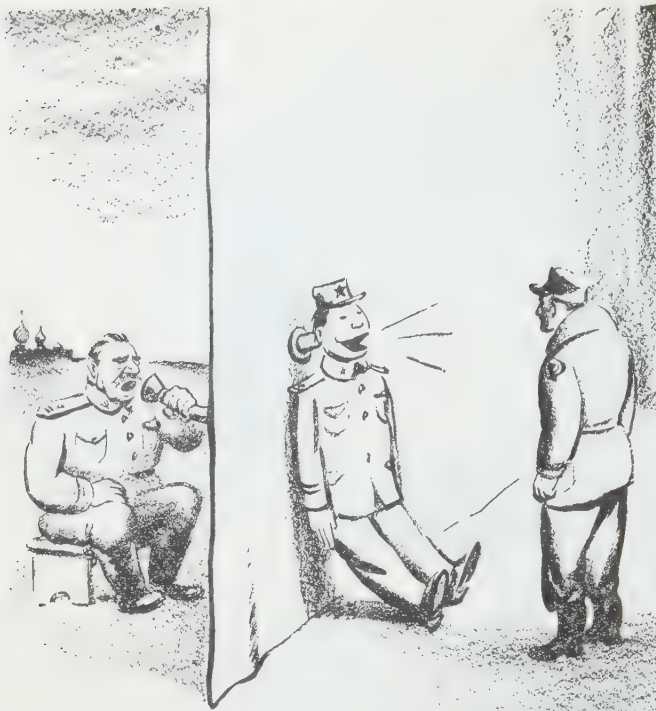
history. The speech echoed Stalin’s unexpected and unprecedented New Year message to the Japanese people which referred to “those who had fallen under the misfortune of foreign occupation,” and it was echoed in its turn by a spate of sympathy in Soviet newspaper comment for all antiwestern nationalist movements, from Morocco to Malaya.

It was not surprising, therefore, to find that the Chinese delegation to Moscow in September should have been headed by Chou En-lai, the prime minister, and that the discussions should have lasted for a month. The closeness of the two great Communist powers, the apparent cordiality and the detail into which the discussions must have gone were more significant even than those decisions that were published: the return of the main Manchurian strategic railway to Chinese administration, and the Soviet retention of the naval base at Port Arthur. Solidarity with China and a claim to the moral leadership of the eastern world against the west were more firmly stated by the Soviet Union in the course of 1952 than ever before.

In Europe the Soviet Union continued its evasions of the problems of Germany and Austria. The western powers’ note on Austria in March, proposing a “short treaty” draft, went unanswered for five months in spite of reminders: as expected, it proved unacceptable. The exchange of notes on Germany (*q.v.*) was equally inconclusive.

Meanwhile, G. V. Kozlov, one of the Soviet Union’s leading political theorists, writing in the official review, *Problem of Economics*, elaborated on “the mounting antagonisms between the capitalist countries, above all between the United States and Great Britain.” The view was widely canvassed in London and New York, and in messages from U.S. correspondents in Moscow, that the appointment in June of Andrei A. Gromyko, deputy foreign minister, to succeed the far less eminent Gheorgiy N. Zarubin as Soviet ambassador in London betokened a friendlier approach to Great Britain and a wish to explore every opportunity of detaching its foreign policy from that of the United States.

The whole trend of Soviet propaganda was to modify the violence previously shown toward all western countries indiscrimi-



"THE VOICE AT PANMUNJOM," a 1952 cartoon by Fitzpatrick of the *St. Louis Post-Dispatch*

nately and to represent the United States as alone responsible for the existing tension. Thus the charges of germ warfare in Korea were pinned firmly on to U.S. units, and it was equally typical that in the Security council the Soviet Union should have vetoed the resolution for an inquiry by the International Red Cross into the allegations.

Venezuela broke off diplomatic relations with the Soviet Union on June 13, alleging that the Soviet embassy in Caracas had become "a permanent centre of clandestine propaganda" designed to foment internal disorder. This left Argentina and Uruguay as the only South American states in diplomatic relationship with the Soviet Union.

The Party and the Government.—Stalin, as secretary-general of the central committee of the Communist party of the Soviet Union, signed the announcement in the Soviet press on Aug. 20 that the 19th congress of the party would be held in Moscow on Oct. 5. The selection of G. M. Malenkov as secretary of the central committee to present the central committee's report was widely held in the west to indicate that he had been chosen as Stalin's successor (Stalin was 74 in December) in preference to V. M. Molotov or L. P. Beria.

Although, according to the party rules, party congresses were supposed to be held not less than once every three years, such a congress had not been held since 1939 and, before that, 1934. The chief items in the agenda were the reorganization of the party and the details of the fifth five-year plan, which would be held to cover the years 1951–55 and provided for a 70% increase in industrial production. The main change in the party structure was the abolition of the Politburo, the party's supreme policy-making body, and of the Orgburo, the committee dealing with the internal organization of the party, and their supersession by a presidium, which would absorb their functions.

While it would appear that such changes might be merely a matter of tidying up internal organization, it was noteworthy that the main address on the changes in the party's rules, delivered by Khrushchev, another secretary of the central committee, laid special emphasis on the "shortcomings and unhealthy symp-

toms that appear in the life and work of party organizations." The insistence in the new party rules on the "correct selection of cadres" and on the necessity for a period of probationary membership was significant in the light of Khrushchev's statement that "in many party, state and economic organizations selection is made on the basis of friendly relations, personal attachments and kinship." His charge that "there have been fairly widespread manifestations of political carelessness and slackness, and cases of disclosure of party and State secrets" seemed to foreshadow an intensification of the security police work, both within the party and among the ordinary citizens.

The Economic Position.—As in previous years, a state loan of 30,000,000,000 roubles was launched in May and oversubscribed in a week. The bonds were redeemable at par over a period of 20 years, but lottery prizes on the bonds, drawn each year, were equivalent to a rate of interest of 4%.

The new five-year plan, adopted by the party congress in October, was deemed to have been under way since the expiration of the fourth five-year plan at the end of 1950. It aimed at a 70% increase in total production by 1960, covering such figures as 76% more cast iron, 62% more steel, 64% more rolled metal, 43% more coal and 85% more oil. Hydroelectric capacity was to be trebled and powerhouse capacity doubled; the output of heavy forge and press machinery was to be doubled.

The success of the previous plan, and development during the previous year, notably in the construction of hydroelectric plants, suggested that these targets were not beyond reach. The fourth five-year plan was stated to have been fulfilled ahead of time—in four years and three months—with an increase in production of 75% above the 1940 level. It was notable, however, that the timber industry came in for the usual criticism as "lagging behind the nation's needs" and that not only had the output of building materials to be doubled but it had to be of better quality. Brick and slate production had, in fact, to be rather more than doubled, and the production of polished glass to be increased four times.

Very general increases were called for over the whole of agriculture, 40% to 70% for wheat and other grains, cotton, flax, beet sugar, potatoes and tobacco, and twice as much for hay and four times more for root crops. Closely related to these figures was the intention to produce 215,000 tractors and 25,000 combine harvesters, compared with a prewar farm machinery fleet of only 31,000.

The new plan called for an acceleration of the gradual increase in consumer goods and in amenities generally. More goods in the shops, of better quality, and at prices that would give people an increase of 35% in their purchasing power was the way the draft plan put it. Among the specified targets were 32% more cotton goods, 34% more shoes, 70% more lump sugar, three times as much canned dairy products, 80% more restaurants and 25% more theatres.

The plan ordered "several times more" refrigerators, washing machines, vacuum cleaners and sewing machines—all goods that had been appearing in small quantities in the stores of the big cities, at any rate, during 1952.

Meanwhile, the fifth consecutive annual reduction in retail prices, in April, ranging between 10% and 20% over most commodities, and notably food, resulted by the end of June in an increase of 11% in retail sales by state co-operatives and in the collective farm markets.

The report on the fulfilment of the short-term plan for the second quarter of 1952 showed that the gross production plan was fulfilled by 102% but that the ministries concerned with the building of heavy machinery, transport machinery and farm machinery had fallen short, as had the timber, fish, meat and dairy industries. (See also ATOMIC ENERGY; COMMUNISM;

RUSSIAN LITERATURE.)

(C. Ry.)

Education.—Schools (1951): 220,000 primary, secondary and lower technical, 37,000,000 pupils, 1,600,000 teachers; 31 universities and 849 institutions of higher education, 840,000 students and 407,000 taking correspondence courses. In the Russian S.F.S.R. there were 119,000 primary and secondary schools with a total enrolment of 18,000,000 pupils and a teaching staff of 760,000.

Finance.—Budget estimates (000 roubles):

	1950	1951	1952
Revenue	433,167,416	458,716,644	509,911,608
Expenditure	427,937,525	451,502,680	476,920,588

The external value of the rouble, high and nominal: £1 = 11.20 roubles; U.S. \$1 = 4.00 roubles.

Foreign Trade.—(Million U.S. dollars, f.o.b.; percentage of the world trade in brackets):

	1938	1949	1950
Imports	338 (1.5)	943 (1.5)	1,049 (1.8)
Exports	365 (1.6)	1,024 (1.8)	1,141 (1.9)

Main sources of imports (1938; 1950 in parentheses): European people's democracies (Bulgaria, Czechoslovakia, Hungary, Poland and Rumania) 4.1% (60.6%); Germany, Democratic and Federal 14.2% (14.5%); United Kingdom 16.3% (3%); United States 21.9% (0.09%). Main destinations of exports (1938; 1950 in parentheses): European people's democracies 7% (71.3%); Germany 14.7% (8.3%); United Kingdom 33.1% (7.5%); United States 7.5% (3.5%).

Transport and Communications.—Railways (1950 est.): 112,530 km.; the railways accounted for 83% of all goods traffic. Shipping (1950): 437 ships totalling 1,824,000 deadweight tons.

Agriculture.—Main crops (million metric tons):

	1913	1938	1940	1950	1952	1955 Plan
Grain	80.1	90.0	119.0	124.7	131.0	186.7
Sugar beets	10.9	16.7	21.8	24.3		40.0
Potatoes	23.3	65.6	84.2	...		147.8
Cotton	0.7	2.7	2.7	3.8		6.3

Livestock (million head, including those on collective farms, state farms and privately owned):

	1913	1938	1940	1950	1951	1955 Plan
Cattle	60.6	63.2	71.0	57.2	58.8	68.6
Pigs	20.9	30.6	36.1	24.1	26.7	36.2
Sheep and goats	121.2	102.5	108.5	99.0	107.5	160.4
Horses	35.8	17.5	20.6	13.7	14.5	16.4

Industry.—Heavy industry production (million metric tons, electricity in 000,000,000 kw.hr.):

	1913	1937	1940	1950	1951	1955 (Plan)
Coal and lignite	29.1	127.0	166.0	260.0	288.0	371.8
Crude petroleum	9.2	28.5	31.0	37.8	42.1	69.9
Electric power	1.9	36.4	48.2	90.3	104.0	162.5
Pig iron	4.2	14.5	14.9	19.4	21.9	34.1
Crude steel	4.2	17.7	18.3	27.3	31.6	44.2
Copper (000 tons) . . . . .	...	97.5	161.0	255.0	...	455.0

(K. Sm.)

The Beacon Press, Unitarian publishing house, added 62 book titles in 1952. About 300,000 Unitarian pamphlets were distributed and the new newssheet *The Signal* achieved a circulation of 65,000.

The Unitarian Service committee, in co-operation with the U.S. state department, undertook a program to rebuild the educational system of Korea, and a team of educational leaders was dispatched there. By 1952 technical projects of the Unitarian Service committee had been carried on in 13 countries and 56 universities, involving 160 professional volunteers.

The Triennial Congress of the International Association for Liberal Christianity and Religious Freedom, founded in 1900 by the American Unitarian association, was held in Oxford, Eng., in Aug. 1952. Forty U.S. delegates attended, and 14 countries were represented. The problem of authority and freedom was discussed in the fields of theology, comparative religions, science, society and education. For the first time, a layman, Percival Brundage of New York, was elected president. (See also CHURCH MEMBERSHIP.)

(J. H. L.)

United Church of Canada. The United Church of Canada, which in 1925 united the Presbyterian Church in Canada, the Methodist Church (Canada) and the Congregational Churches in Canada, reported for 1951 a membership of 834,118 with 2,002,553 persons under pastoral oversight, a Sunday school enrolment of 550,922 and 6,405 preaching places. The church owned property worth \$170,542,932. The missionary and maintenance givings of the church in 1951 totalled \$3,191,294, an advance over the previous year of \$181,315.

Among the important events in the life of the United Church during 1952 were: the setting of a new objective of 1,000 new recruits for the ministry of the church at home and the overseas work abroad, or 200 each year for the five years beginning in 1952; the continuance of negotiations on reunion with representatives of the Church of England in Canada, with slow progress; the raising of the minimum salary scale for married ministers to \$2,700 with an additional amount of not less than \$400 for travel grant and free use of furnished parsonage; the raising of \$770,000 for church extension in new housing, industrial and mining areas across Canada, with at least \$2,500,000 as the goal to be reached over the next five years.

The Rt. Rev. A. A. Scott, principal of Indore college, India, was elected moderator in September to hold office until 1954.

(G. A. St.)

United Kingdom: see GREAT BRITAIN & NORTHERN IRELAND, UNITED KINGDOM OF.

Unitarian Church. Unitarian membership in the United States continued its growth during 1952. Forty new fellowships (churches with less than 50 members) were established in various communities, making a total of 95 fellowships. The Church of the Larger Fellowship for isolated Unitarians numbered 1,103 members. The Unitarian Laymen's league adopted a five-year plan to increase the number of members in existing churches. The first Unitarian society in South America was organized in Guayaquil, Ecuador.

At the annual meetings of Unitarian organizations in Boston, Mass., in May, the annual award for distinguished service was given to G. Brock Chisholm, director general of the World Health organization. Resolutions were passed against the McCarran-Walter Immigration act; against universal military training; and against the appointment of an ambassador to the Vatican. Other resolutions were in favour of peaceful relations between east and west, the United Nations Genocide convention and the elimination of racial discrimination in churches and church conferences.

United Nations. During 1952, relations between the Soviet bloc and the "free world" continued hostile and nonco-operative. As a result the United Nations was able to achieve little in dealing with problems that required agreement between them. The United Nations nevertheless was able to make some progress in those areas of primary or exclusive concern to the "free world" and particularly in promoting the economic, social and political development of countries outside the sphere of Communist control.

Membership and Representation.—There was no change in the membership of the United Nations during 1952. The following states were members: Afghanistan, Argentina, Australia, Belgium, Bolivia, Brazil, Burma, the Belorussian Soviet Socialist Republic, Canada, Chile, China, Colombia, Costa Rica, Cuba, Czechoslovakia, Denmark, the Dominican Republic, Ecuador, Egypt, El Salvador, Ethiopia, France, Greece, Guatemala, Haiti, Honduras, Iceland, India, Indonesia, Iran, Iraq, Israel, Lebanon,

Liberia, Luxembourg, Mexico, the Netherlands, New Zealand, Nicaragua, Norway, Pakistan, Panamá, Paraguay, Peru, the Republic of the Philippines, Poland, Saudi Arabia, Sweden, Syria, Thailand, Turkey, the Ukrainian Soviet Socialist Republic, the Union of South Africa, the Union of Soviet Socialist Republics, the United Kingdom, the United States of America, Uruguay, Venezuela, Yemen and Yugoslavia.

The question of the admission of new members into the United Nations continued to be a leading subject of controversy. The inability of the permanent members of the Security council to reach an agreement on this question resulted in the continued failure of the organization to admit new members.

Nevertheless, at the sixth session of the general assembly a spirited attempt was made on the part of a group of South American members to break the deadlock. On their initiative a resolution was passed designed to facilitate action by the Security council by interpreting the criteria for membership more precisely and less subjectively. In addition the permanent members of the Security council were asked to make an effort to come to an agreement on the matter.

However, when in February the Security council resumed consideration of the admission of Italy to the United Nations, especially in view of Italy's designation as administering authority for Somaliland, this step was blocked by a Soviet veto. Conversely, in September the Soviet Union's proposal, that all 14 applicants previously examined by the council should be admitted en bloc, was voted down. Finally, in the same month, the applications of Libya, Japan, Vietnam, Cambodia and Laos were vetoed by the U.S.S.R. and the application of the Democratic Republic of Vietnam was turned down by a majority vote. Libya's application was rejected notwithstanding the fact that Libya became an independent state under United Nations auspices.

On Oct. 25 the general assembly rejected, for the third successive year, the claim of the Central People's (Communist) Government of China to represent the Chinese state in the U.N. and approved the credentials of the Nationalist delegation for the duration of the assembly's seventh session.

Organization and Meetings.—The sixth session of the general assembly convened at the Palais de Chaillot in Paris, Fr., on Nov. 6, 1951, under the presidency of Luis Padilla Nervo of Mexico, and was concluded on Feb. 5, 1952.

The seventh session of the general assembly convened in the new hall at permanent headquarters in New York city on Oct. 14, 1952. Lester B. Pearson of Canada was elected president.

Following the customary general debate, the assembly adopted an agenda of 73 items and allocated them to its 6 main committees and the *ad hoc* Political committee for consideration. Among the more important substantive items included on the agenda were the following: the Korean question, the Tunisian and Moroccan questions, the report of the Disarmament commission, the report of the Collective Measures committee, admission of new members, treatment of people of Indian origin in the Union of South Africa, racial segregation practices of the government of the Union of South Africa, the Austrian question, the Palestine situation, the reports of the Security, Economic and Social, and Trusteeship councils, economic development of and technical assistance to underdeveloped countries, the draft Convention on Freedom of Information, the draft Convention on Political Rights of Women, the refugee problem in its various aspects, problems of nonself-governing territories and trusteeship, co-ordination of specialized agencies, the secretary-general's proposals for the reorganization of the secretariat and the 1953 budget.

The Security council continued to suffer during 1952 from the loss of prestige and effectiveness resulting from the continuing

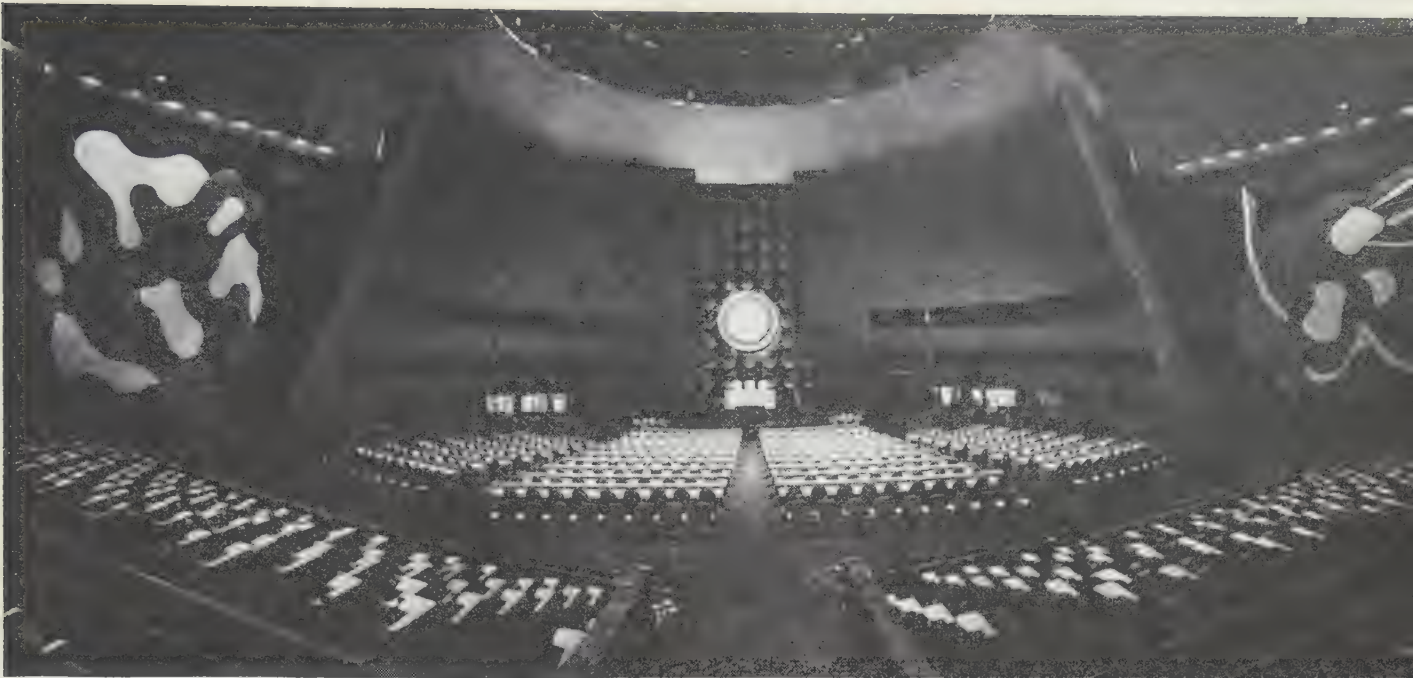
deadlock among its permanent members. The principal questions before the council during the period under review were the India-Pakistan question, aspects of the Korean "police action," and disarmament, in addition to membership applications. The membership of the council during the year included the five permanent members—China (represented by the Nationalist government), France, the U.S.S.R., the U.S., and the U.K.—and six nonpermanent members—Brazil, Chile, Greece, the Netherlands, Pakistan and Turkey. During its seventh session, the general assembly elected Colombia, Denmark and Lebanon to replace Brazil, the Netherlands and Turkey for two-year terms ending Dec. 31, 1954.

The Economic and Social council decided to hold only one regular session during 1952, thus departing from its previous practice of two regular sessions a year. In addition the council held a special one-day session on March 24, as requested by the sixth session of the general assembly, for the purpose of transmitting the assembly's instructions regarding the two draft covenants on human rights to the Commission on Human Rights. During 1952 the council's membership was as follows: with terms ending Dec. 31, 1952—Canada, Czechoslovakia, Mexico, Iran, Pakistan and the U.S.; with terms ending Dec. 31, 1953—the Philippines, Poland, Sweden, the U.S.S.R., the U.K. and Uruguay; and with terms ending Dec. 31, 1954—Argentina, Belgium, China, Cuba, Egypt and France. During its seventh session the general assembly elected the following states to membership on the council for a three-year term ending Dec. 31, 1955—Australia, India, Turkey, the U.S., Venezuela and Yugoslavia.

The Trusteeship council held two sessions during the year, the 10th from Feb. 27 to April 1 and the 11th from June 3 to July 24, both sessions meeting at U.N. headquarters. Alan Burns of the U.K. served as president during the 10th while Awni Khalidi of Iraq presided over the 11th. The membership of the council during 1952 was as follows: members administering trust territories—Australia, Belgium, France, New Zealand, the U.K. and the U.S.; members by virtue of their permanent seats on the Security council—China and the U.S.S.R.; and members elected by the general assembly—the Dominican Republic, El Salvador, Iraq and Thailand. At the seventh session of the general assembly El Salvador was re-elected and Syria was elected to replace Iraq for a three-year term.

Administration and Finance.—On Nov. 10, 1952, Secretary-General Trygve Lie announced his resignation to take effect as soon as a successor was chosen. When Lie's first term expired in 1950, the Security council was unable to recommend another person for the position, as the charter requires, because of the inability of the permanent members of the Security council to agree. Lie's term was renewed for a three-year period which was due to expire early in 1954.

Suggestions for a basic reorganization of the secretariat were presented to the seventh session of the general assembly by the secretary-general. The proposals had as their underlying objectives greater co-ordination of activities in related fields as well as relieving the secretary-general of many administrative functions that he might devote greater attention to policy formulation. With this in mind, the secretary-general proposed that the departments of the secretariat be reorganized into three major groupings, each headed by a deputy secretary-general, as follows: (1) Political and public affairs (to include departments of Security council affairs, trusteeship and information from nonself-governing territories, and public information); (2) economic and social affairs (to include departments of economic affairs, social affairs and the Technical Assistance administration); and (3) administrative and conference services (to include departments of administrative and



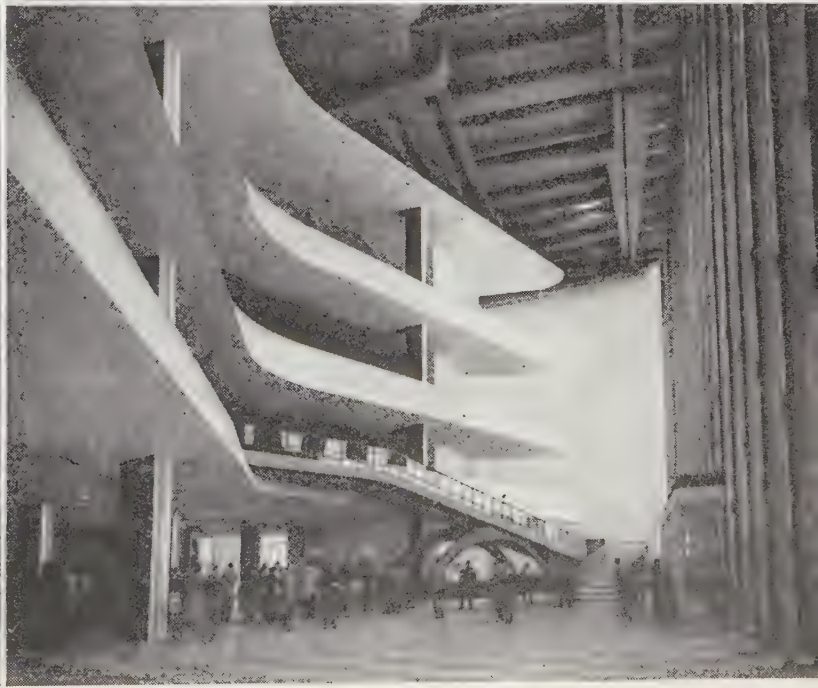
VIEWS of the General Assembly building at U.N. headquarters in New York city, completed before the opening of the seventh general assembly session on Oct. 14, 1952

Above: THE AUDITORIUM, designed with slanting walls and decorated with abstract murals by the French painter Fernand Leger

Right: CLOSE-UP of the panel behind the auditorium rostrum. The circular shields surrounding the U.N. emblem were to carry the coats of arms of U.N. member nations

Below, left: MANHATTAN SKYLINE with the buildings of the U.N. headquarters in the foreground. They are, left to right: the Secretariat building, the Conference building and the General Assembly building

Below, right: THE MAIN LOBBY, and balconies leading to the public galleries of the assembly hall. The walls of the lobby, at right, were of glass panels set between marble piers



financial services, and conference and general services and the library). The legal department would be attached to the secretary-general's office. The three deputy secretary-generals would, with the secretary-general himself, constitute a small policy-formulating team. Each deputy secretary-general would be responsible for over-all co-ordination of programs within his field while maximum responsibility for day-to-day administration would be delegated to the principal directors of divisions.

The secretary-general's budget estimates for 1953 provided for a total expenditure of \$47,765,200 or a decrease of \$331,850 from 1952 estimates. U.N. income was estimated at \$6,112,500 leaving \$41,652,700 to be raised by contributions of members. The Advisory Committee on Administrative and Budgetary Questions recommended a reduction of \$990,900 in the secretary-general's estimate.

The Committee on Contributions recommended the further revision of the scale of assessments. It recommended that the U.S. contribution to the U.N. be reduced from 38.92% to 35.12%. However this reduction did not meet the demand of the U.S. congress which had, in July, stipulated that henceforth the U.S. contribution to any international organization was not to exceed 33.33%.

Political Problems.—Korea.—During 1952 fighting in Korea continued on a limited and sporadic basis along a line in the general region but for the most part north of the 38th parallel. Truce negotiations at Panmunjom became completely deadlocked on the prisoner-of-war issue with no immediate prospect of agreement. The United Nations Commission for the Unification and Rehabilitation of Korea was primarily concerned with observing and reporting on political developments in the Republic of Korea. The relief and reconstruction of Korea continued for the greater part of the period to be the exclusive responsibility of the United Nations command with the United Nations Korean Reconstruction agency (U.N.K.R.A.) acting in an advisory and consultative capacity under an arrangement originally entered into under which U.N.K.R.A. was to assume responsibility within six months after the cessation of hostilities. The prolonged deadlock in armistice negotiations and the consequent continuation of hostilities led to a revision of this arrangement by which U.N.K.R.A. took over a portion of the responsibility for reconstruction. On Oct. 2, J. Donald Kingsley, agent-general for U.N.K.R.A., announced that the agency was prepared to begin large-scale operations in Korea by spending up to \$70,000,000 on relief and reconstruction during the year ending June 30, 1953. (For an account of the progress of the war and of the truce negotiations in Korea during 1952, see *KOREAN WAR*.)

When the general assembly met on Oct. 14, the Korean question was included on its agenda and referred to the Political committee. In the course of committee discussion, Secretary of State Dean Acheson, for the Unified Command, and Andrei Y. Vishinsky, for the Communists, gave long and detailed statements of the two opposing positions with no indication of an area for compromise. Acheson introduced a draft resolution, supported by the United States and 20 other members, calling for approval of the principle of voluntary repatriation of prisoners and the communication of the general assembly's position by its president to the authorities of Communist China and North Korea, while Vishinsky introduced a draft resolution which, without mentioning the prisoner issue, provided for the establishment of a commission, composed in part of "neutrals," to achieve a cease-fire and a political settlement in accordance with the wishes of the Koreans. Several delegations, including the Asian-Arab, concentrated their efforts on finding a formula acceptable to both sides.

Palestine.—The general assembly in January adopted a reso-

lution by which the U.N. Conciliation Commission for Palestine was directed to continue its efforts. These efforts eventually resulted, in September, in the Israeli government's agreeing to release blocked bank accounts belonging to Palestinian Arab refugees. While this step was regarded as a hopeful beginning, the major issues of the Palestinian problem, namely, war damages, the repatriation of refugees, the status of Jerusalem and the terms of a peace treaty, remained unresolved when the seventh session of the general assembly met in October.

With respect to the special problems created by the existence of more than 800,000 Arab refugees in the near east, the director and advisory commission of the United Nations Relief and Works Agency for Palestine Refugees in the Near East placed before the sixth session of the general assembly a three-year relief and reintegration program. To be concluded by July 1, 1954, the program contemplated the expenditure of \$50,000,000 for relief and \$200,000,000 for reintegration, these funds to be raised by voluntary contributions of member states.

In January the general assembly adopted the director's program virtually intact.

Kashmir.—Although the United Nations representative for India and Pakistan was able to report substantial progress to the Security council in reconciling the differences which prevented a settlement of the Kashmir question, the two nations continued to hold opposing positions on fundamental issues.

Essentially the U.N. representative's task was to carry out resolutions adopted in 1948 and 1949 by the former United Nations Commission for India and Pakistan providing for the creation of suitable conditions for the holding of a plebiscite in Kashmir under United Nations supervision. During the period under review, the U.N. representative's attention was primarily directed toward finding an agreement on the conditions for the demilitarization of the area, the character and quantity of the forces to be left by the two nations in the area, the period of demilitarization and the time at which the plebiscite administrator would assume his functions. The U.N. representative submitted reports to the Security council in January, April and September on the progress of negotiations but was unable to resolve differences on the key question of the number and character of forces to be maintained by the two countries in the area during the period of the proposed plebiscite. (See also *INDIA*.)

Unification of Germany.—The United Nations Commission to Investigate Conditions for Free Elections in Germany, a body created by the general assembly at its sixth session, was unable to fulfill its task because of the nonco-operation of the authorities of the Soviet Union and the (East) German Democratic Republic. The commission, meeting largely in Geneva, submitted reports in April and July on its efforts to carry out its instructions. Although it received every assurance of co-operation from the Allied high commission in Western Germany and the authorities of the (West) Federal Republic of Germany and the western sectors of Berlin, the Soviet and East German authorities did not reply to the commission's communications. As a result, the commission adjourned sine die in July.

Anglo-Iranian Oil Question.—The International Court of Justice commenced public hearings on this question in June. It decided in July that it lacked jurisdiction to rule on the dispute. By a vote of nine to five it ruled that the 1933 concession was a contract not having the character of a treaty and that only treaties subsequent to the 1932 declaration could give the court jurisdiction. The court also declared that its interim order of protection of 1951 had lapsed. (See also *INTERNATIONAL LAW*; *IRAN*.)

Tunisia and Morocco.—Having failed in Nov. and Dec. 1951,

in their efforts to place the Moroccan question on the agenda of the sixth session of the general assembly, the Arab-Asian bloc turned, in March 1952, to the Security council in an effort to bring the Tunisian problem before that organ. As in the case of Morocco, affairs in Tunis had reached a crisis stage in which widespread anti-French, nationalistic disturbances were being met by vigorous police action on the part of the French authorities. Again, as in the Moroccan case, negotiations on administrative and political reforms were ostensibly being conducted in Tunis by French and Tunisian representatives.

The Security council discussed the question in April and though the subject at hand was the procedural one of whether the council should put the question on its agenda, heated debate ranged over the substance of the dispute. The French delegate insisted that the situation was an internal one and maintained that the negotiations then in progress would be hampered by council consideration. The Pakistan representative doubted the integrity of the negotiations and pointed to the council's unbroken record of admitting every item for discussion. On April 14 the council, by a vote of three to five with four abstentions, decided not to include the question on its agenda.

The Arab-Asian bloc then requested the secretary-general to call a special session of the general assembly to consider the matter. However, in July the secretary-general announced that the request had failed to receive the necessary majority of member states.

In September the Arab-Asian bloc again submitted the Tunisia-Moroccan questions for inclusion on the agenda of the seventh general assembly, and the assembly's General committee recommended favourable action. The general assembly followed the recommendation.

Regulation of Armaments.—The sixth session of the general assembly in January established a 12-power Disarmament commission to replace the Atomic Energy and Conventional Armaments commissions. Operating as a subsidiary organ of the Security council, the new body was given the task of drawing up a draft treaty or treaties for the regulation and reduction of armaments and the international control and prohibition of atomic energy and weapons as well as other weapons of mass destruction. Although the Soviet bloc disagreed with the resolution establishing the Disarmament commission, the U.S.S.R. nevertheless consented to participate in its work.

The commission considered work programs submitted by the U.S., Soviet and French delegates. Over Soviet opposition the commission adopted, in March, the French program which included (1) the problem of disclosure and verification of all armed forces and armaments, including atomic; (2) regulation and control of armed forces and armaments, especially atomic weapons and weapons of mass destruction; and (3) the procedure and timetable necessary to effect these objectives. The commission also decided to create two subordinate committees to consider the first and second of the above items.

It soon became evident, however, that the new commission was facing the same problems that its predecessors had failed to solve. In the matter of disclosure of information on armed forces and weapons, the western concept of progressive disclosure ran counter to Soviet insistence upon full and simultaneous disclosure of both atomic and nonatomic weapons. With respect to reduction of armaments, the Soviet government advocated a flat one-third cut while the western powers maintained that a "balanced" reduction was required. Finally and most important, both sides were almost as far apart as ever on the questions of prohibition and control, especially with regard to atomic weapons. The Soviet Union adhered to the view that prohibition must precede control, and defined control as inspection and verification by an international authority in a manner

which did not interfere in the domestic affairs of states. The western powers insisted, on the other hand, that prohibition was only realistic after an effective system of controls had been installed and that such a system to be effective must include ownership and management by an international authority of atomic installations as well as an unhampered right of inspection.

In May the three western powers defined what they meant by balanced reduction of armed forces by submitting a proposal that the armed forces of China, the Soviet Union and the United States be limited to between 1,000,000 and 1,500,000, that France and Great Britain limit theirs to between 700,000 and 800,000 and that other powers limit theirs to not more than 1% of their population. The western powers felt that if the Soviet Union could accept this or a related basis for the reduction of armed forces, discussion could then proceed to the question of the reduction, control and prohibition of armaments. The Soviet delegate, however, turned down both the proposal and the method since the proposal did not distinguish between land, sea and air forces, while the method reversed the order held necessary by the Soviet Union.

In August the three western powers submitted a new proposal designed to meet Soviet criticism of their plan for a balanced reduction of armed forces. The proposal called for a big five conference to consider the distribution by principal categories of the armed forces considered necessary, the types and quantities of armaments necessary to support these forces, and the elimination of all armed forces and armaments, including atomic weapons and weapons of mass destruction, not expressly permitted. It was further proposed that regional conferences be subsequently held to reach similar agreements covering other states and that the results of these conferences be embodied in a draft treaty. However the Soviet delegate rejected this proposal because of the time lag between the limitation on armed forces and the prohibition of atomic weapons.

Bacteriological Warfare.—In addition to the wide divergence of viewpoints mentioned above, the progress of the Disarmament commission was further hampered by protracted and heated discussion caused by the Soviet accusation that the United States was employing bacteriological weapons in Korea. This charge was first raised at the commission's second meeting in March and in subsequent meetings was categorically denied by the U.S. supported by all the other delegations. The U.S. delegate proposed an investigation of the Soviet charges by the International Red Cross but this was rejected by the Soviet delegate. When the Soviet delegate returned to these charges in late March he was ruled out of order on the ground that the commission was not the proper body for making or discussing specific charges of that nature.

The Soviet Union then turned to the Security council where it raised much the same question in somewhat different form. In June the Soviet delegate proposed that the council appeal to all states which had not adhered to the Geneva protocol of 1925 on the prohibition of the use of chemical and bacterial weapons to do so at once. The U.S. was the principal nation which had not ratified the treaty. The U.S. delegate maintained that the treaty was an obsolete paper promise and ineffective as a deterrent to the use of those weapons and that the sincerity of the United States on this question was being demonstrated in the Disarmament commission where the U.S. delegate was supporting efforts to establish an effective system of international control over all weapons of mass destruction. This view was generally supported by other members of the council and the Soviet proposal was rejected in late June by a vote of one to none with ten abstentions. On the other hand, two U.S. proposals, one requesting the International Red Cross to investigate the charges, and a second condemning the fab-

rication of false charges, were vetoed by the Soviet delegate.

The Soviet Union then returned to the Disarmament commission and, in connection with the three-power proposal of August mentioned above, itself proposed that priority in consideration be given to the violation of the prohibition of bacterial warfare. The commission rejected the Soviet proposal in late August and adopted a proposal sponsored by Chile, France and Turkey which provided for specific reference to bacteriological weapons in the commission's working program.

Economic and Social Co-operation.—United Nations activities in this field were of a wide and varied nature. The character of the activities ranged from research and publication to field operations. The subject matter covered the whole range of topics suggested by the above title—economic stability and development, technical assistance, control of narcotics and other social evils, definition and protection of human rights, status of women, etc. In some instances the work was done directly by organs of the United Nations; in other instances in co-operation with one or more of the specialized agencies, as in the case of technical assistance.

Co-ordination of Activities.—One of the continuing problems with which the principal organs of the United Nations dealt during the year 1952 was that of the better co-ordination of the policies and activities of the United Nations and the specialized agencies in order to prevent overlapping and achieve concentration on tasks of primary importance. During its sixth session in February, the general assembly approved the system of priorities which had been adopted by the Economic and Social council as a co-ordinating device. During its 14th session the Economic and Social council approved a revised list of

major programs which were to enjoy priority, along with a number of contributory programs. The major programs were as follows: (1) increased food production and distribution; (2) increased production in fields other than food; (3) measures for promoting domestic full employment and economic stability within an expanding economy; (4) acceleration of welfare, social security and basic public health programs; (5) development of education and science; and (6) formulation and wider observance of human rights.

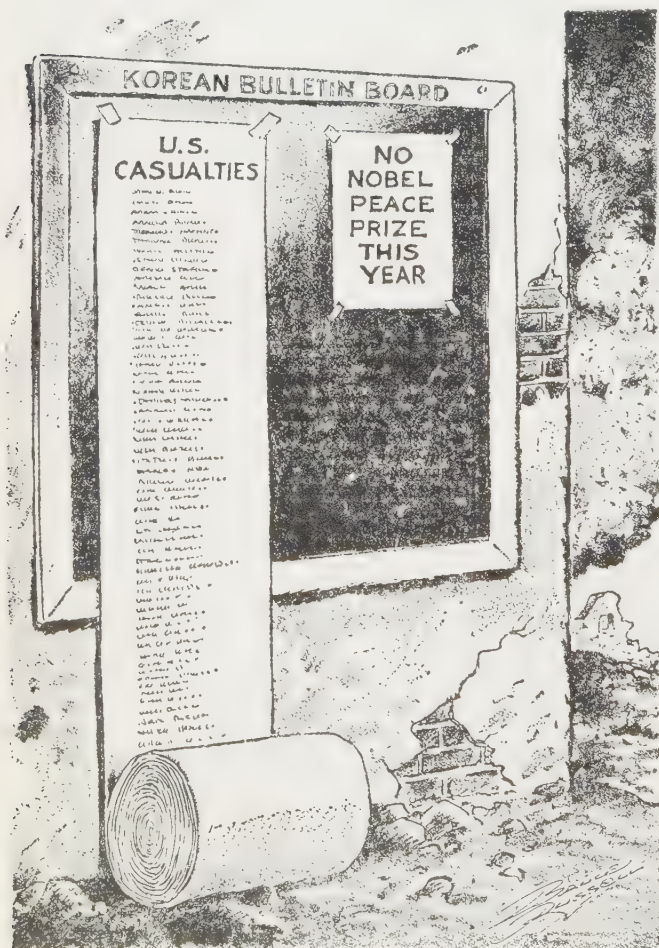
Economic and Social Surveys.—The secretariat published two important surveys which were the basis of much of the discussion of U.N. organs and which were of great value to governments and scholars. One was the *World Economic Report, 1950-51* which contained an analytical account of economic developments in the years 1950 and 1951. The other was the first survey of the world social situation ever to be prepared which attempted to present a balanced picture of living conditions throughout the world.

Technical Assistance.—An ever-increasing share of the time and efforts of the United Nations and the specialized agencies was devoted to technical assistance. A part of this work was financed from the regular U.N. budget and was administered by the Technical Assistance administration of the United Nations. An increasing portion of this work was being done under the expanded program of technical assistance, under a special account established in 1950, and under the direction of the Technical Assistance board and the Technical Assistance committee of the Economic and Social council. The council, during its 14th session, voted to raise the target for contributions to finance the expanded program from \$20,000,000 for 1952 to \$25,000,000 for 1953.

In order to reduce the need for foreign experts, increasing attention was given to the training of local personnel. During the first half of 1952, 769 fellowships were awarded for study abroad. Special emphasis was also placed upon training centres, demonstration projects and pilot plants in recognition of the desirability of training individuals locally.

Economic Development.—In the field of economic assistance to underdeveloped nations, the problem of meeting the needs and demands of underdeveloped countries for foreign capital to help finance their economic development continued to absorb much of the interest and activities of the Economic and Social council and other bodies. Inequalities in standards of living, in available capital and in production throughout the world remained as serious as ever. These problems were further aggravated by economic dislocations resulting from the rearmament programs of the western powers as well as the growing disinclination of the U.S.—the chief capital exporting nation—to make capital grants for other than strategic purposes.

The search for a solution developed largely along three lines. The first consisted of efforts to facilitate the flow of private capital to underdeveloped areas. Of chief interest in this connection was the proposal to create an International Finance corporation to make equity investments or loans to private enterprises in underdeveloped countries. It was believed that the example set by the corporation would help to dissipate the lack of confidence which was felt to be the chief deterrent to the resumption of large-scale private international investment. This proposal was considered by a group of experts appointed by the secretary-general, by the Economic Employment and Development commission and by the Economic and Social council which referred the problem to the International Bank for Reconstruction and Development. The bank reported favourably on the proposal to the Economic and Social council at its 14th session but that organ could not come to an agreement on what action should be taken and referred the matter



"THE LONG AND SHORT OF IT," a 1952 cartoon by Russell of the *Los Angeles Times*

back to the bank for further study. At the same session the council asked its Fiscal commission to study the question of tax incentives as a means of stimulating private foreign investment.

The second approach was embodied in a resolution adopted by the sixth session of the general assembly requesting the Economic and Social council to submit a detailed plan for establishing a special fund for grants-in-aid and low-interest, long-term loans to underdeveloped nations. The assembly resolution was partly the result of recommendations made in 1951 by a group of experts appointed by the secretary-general. It barely passed the assembly by a vote of 30 to 16 with 11 abstentions, most of the industrialized countries voting in the negative. The Economic and Social council considered the assembly's proposal at its 14th session and finally decided to refer the matter to a special committee of nine experts who were to submit detailed recommendations to the council's 15th session in March 1953.

Finally, efforts were undertaken in the Economic and Social council to liberalize the lending operations of the International Bank for Reconstruction and Development. Debate on this question at the council's 14th session was generally appreciative of the increased flexibility in the bank's operations, but criticism was expressed on the size of the interest rates charged by the bank.

Human Rights.—The general assembly in its sixth session instructed the Commission on Human Rights to submit two covenants, one embodying political and civil rights, and the other economic, social and cultural rights. It also requested the commission to prepare a recommendation concerning international respect for the self-determination of peoples. This task occupied much of the spring session of the commission. Its recommendation was strongly resisted by the western colonial powers. As the commission was unable to complete the drafting of the two covenants, it requested, and received permission from the Economic and Social council to finish its work in 1953.

The Commission on the Status of Women completed in March 1952 a draft convention on the Political Rights of Women which was approved for transmission to the general assembly.

Refugees.—The work of the high commissioner for refugees in meeting the needs of refugees left without assistance by the termination of the International Refugee organization (I.R.O.) was greatly handicapped during 1952 by lack of funds. Only about half of the \$3,000,000 requested by the high commissioner was thought likely to be available by the end of the year. (See also REFUGEES.)

Specialized Agencies.—An important part of the work in the field of international economic and social co-operation was performed by the specialized agencies, international organizations set up on the basis of their own constitutions for specialized purposes and brought into relation with the U.N. by agreements concluded by the appropriate organs of the U.N. and the particular specialized agency in question. During 1952 the following specialized agencies were in actual operation:

International Labour Organization (I.L.O.).—Headquarters in Geneva, Switz.; David A. Morse, director-general; 65 members. (See separate article.)

Food and Agricultural Organization (F.A.O.).—Headquarters in Rome, It.; Norris E. Dodd, director-general; 67 members. (See AGRICULTURE.)

International Monetary Fund.—Headquarters in Washington, D.C.; Ivar Rooth, managing director; 51 members. (See separate article.)

International Bank for Reconstruction and Development.—Headquarters in Washington, D.C.; Eugene R. Black, president; 51 members. (See separate article.)

International Civil Aviation Organization (I.C.A.O.).—Headquarters in Montreal, Que.; Edward Warner, president of the council; 57 members.

United Nations Educational, Scientific and Cultural Organization (U.N. E.S.C.O.).—Headquarters in Paris, Fr.; Jaime Torres Bodet, director-general; 65 members.

World Health Organization (W.H.O.).—Headquarters in Geneva, Switz.; Brock Chisholm, director-general; 78 members plus one associate member (Southern Rhodesia). (See separate article.)

International Telecommunications Union (I.T.U.).—Headquarters in Geneva, Switz.; Leon Mulatier, secretary-general; 89 members (including

colonial areas).

Universal Postal Union (U.P.U.).—Headquarters in Berne, Switz.; Fritz Hess, director of the international bureau; 92 members (including colonial areas).

World Meteorological Organization (W.M.O.).—Headquarters in Geneva, Switz.; G. Swoboda, chief of the secretariat; 77 members.

The constitutions of two additional specialized agencies had not yet entered into force because of the absence of the necessary ratifications. The convention establishing the Inter-Governmental Maritime Consultative organization (I.M.C.O.) had been ratified by 10 states. Ratification by 21 states, including the principal maritime powers, was required. The constitution of the International Trade organization (I.T.O.) had not been ratified by any signatory. The 52-member Interim commission continued to function, however.

Aid to Nonself-Governing Peoples.—The Committee on Information from Nonself-Governing Territories (formerly the Special Committee on Information Transmitted under Article 73 [e] of the Charter) devoted much of its 1952 session to examining and making recommendations on information submitted by the administering powers on social developments in the nonself-governing territories. Social problems and dislocations resulting from the impact of western knowledge, science and techniques upon village and tribal societies were examined. The committee also dealt with the question posed by the obligation of member nations having nonself-governing territories to supply information to the U.N. on economic, social and educational matters in these territories until they achieve "a full measure of self-government." This problem had been accentuated by the steady decline in the number of territories reporting, the administering power in each case claiming that self-government had been achieved. In January the sixth session of the general assembly submitted a list of factors to serve as guides to the administering powers in determining this question. In addition it created an *ad hoc* committee to study the question and report to the seventh session of the general assembly.

In accordance with an assembly request, the council at its tenth session established a standing committee on petitions to handle petitions dealing with specific complaints. In response to another assembly request, the council reviewed the methods and functioning of its visiting missions. In compliance with a third assembly resolution, the council's standing committee on administrative unions reviewed the problems posed by the need to balance the administrative convenience of the administering powers with the obligations of those powers to the trust territories incurred under the charter and trust agreements. Finally, the council deferred consideration of an assembly recommendation on indigenous participation in the council's work until its 11th session at which time it passed a resolution expressing the hope that the administering authorities would include in their delegations to the council inhabitants of their trust territories.

The 11th session of the Trusteeship council was devoted in large part to a detailed review of conditions and progress in seven African trust territories. Reports by the administering powers on Somaliland, Ruanda-Urundi, Tanganyika, the two Togolands and the two Cameroons were considered, and observations and recommendations were made to the general assembly. In addition, arrangements were completed for a visiting mission to the four West African trust territories. This mission, in addition to its regular duties, was instructed to make a special study of the Ewe unification problem, as requested by the general assembly. The Ewe problem, which had increased in importance, was the result of the desires of the Ewe people (about 800,000) for political and administrative unity, a desire which was hampered by their division into three administrative areas: the two trust territories of British and French Togoland and the British Gold Coast dependency. The mission

was instructed to report back on this subject to the 12th session of the council in November.

On Aug. 11 the emperor of Ethiopia ratified a new constitution for Eritrea and U.N. supervision over the former Italian colony came to an end. Under the arrangement, and pursuant to a general assembly resolution of Dec. 1950, Eritrea became an autonomous unit federated with Ethiopia and under the sovereignty of the emperor. (See also ATOMIC ENERGY; EDUCATION; LIBYA; PHILATELY; PRISONERS OF WAR; TRUST TERRITORIES; WORLD HEALTH ORGANIZATION.) (L. M. GH.)

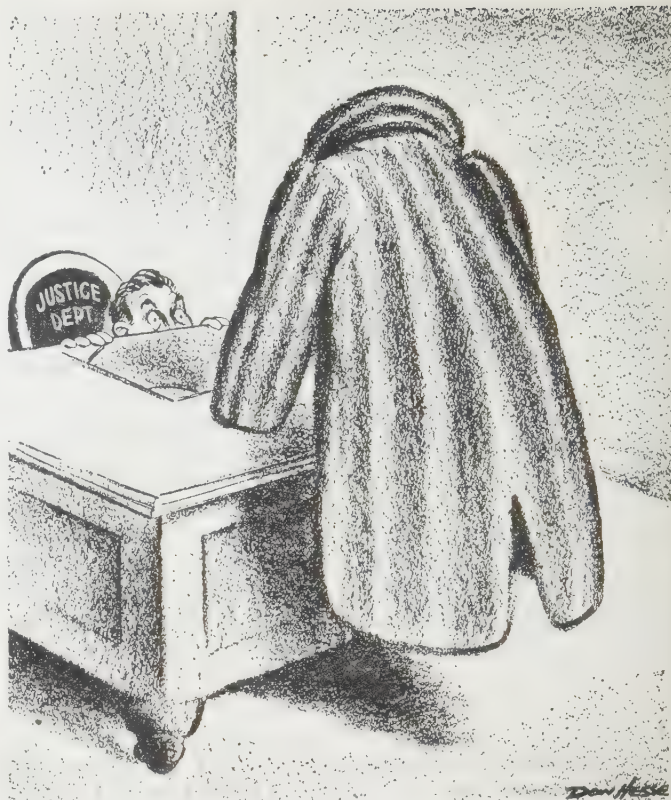
United States. Revised figures of the 1950 census, released by the census bureau in 1952, placed the total population of the United States (including armed forces overseas) at 154,233,000 as of April 1, 1950. On Sept. 1, 1952, the current estimate of the bureau was 157,505,000 (for full details see the article CENSUS DATA, U.S.). As was natural in a presidential election year, the increase in population led to speculation as to possible increase in total vote. Early in the year it was thought that the increase would be as high as 16%. As the event proved, the increase was the greatest since 1880. (See ELECTIONS, U.S.) The reports of the census bureau, in comment upon steady increases and expectation of continued increase, emphasized the fact that while this process had been going on, the land useful for agriculture could now be materially increased only through mechanization, scientific utilization and public works. A real pressure of population on the land had appeared, and slightly less farm acreage was reported in 1950 than in 1945.

Economic Developments.—As the year opened, prosperous conditions were noted throughout the business structure; yet inflation seemed a continued certainty, with costs remaining high and profits and purchasing power equally certain to decline because of the impending tax burden. In presenting plans for tax revision, Pres. Harry S. Truman in his report to the congress on Jan. 16 wrote: "As 1952 opens, we face a period during which the burden of the defense program will increase greatly—both in absolute terms and relative to the total size and strength of the economy. This increasing burden, while indispensable to our security, will place an additional strain upon our manpower, our physical plant, our natural resources and our standard of living. It will inescapably cause Government expenditures to rise greatly, and, even with the additional taxes I am recommending, it is estimated that there will be a large deficit this year and a larger one next year." The president, in a message to the congress on Jan. 21, presented his budget estimates calling for \$85,000,000,000 for the fiscal year 1952-53. Of this, 76% was for "major national security programs," of which 60% was for military services. A total of \$5,000,000,000 was asked for the atomic energy program. (See also BUDGET, NATIONAL.)

Opposition to the president's program was expressed not only by Republican leaders, but by representatives of the Democratic party from both south and north. Sen. Paul Douglas of Illinois saw "catastrophe" in the growing tendency to accept "easy money" views. Sen. Harry F. Byrd of Virginia in particular attacked the dangers of continued inflation, and offered an alternative budget of \$76,000,000,000 as a possible way to escape deficit spending without injuring the "essential Government functions or the program of military security."

It was reported on July 1 that in the fiscal year ending June 30, 1952, the United States treasury showed a deficit of \$4,000,000,000. By midyear, employment was reported at the record point of 62,500,000.

Foreign Policy.—On Jan. 7, 1952, the British prime minister, Winston Churchill, arrived in the United States for discussions



"HELLO!" a 1952 cartoon by Hesse of the St. Louis Globe-Democrat

of military bases in England and the continuing crisis in the middle east, and primarily to "re-establish the close and intimate relationship that he had with President Roosevelt in wartime and to seek a common policy and approach on the grave problems facing the Western Alliance." Churchill made a bow to the United Nations, but emphasized in his public addresses the North Atlantic Treaty organization. He addressed congress on Jan. 17. On Jan. 28 congress granted \$300,000,000 to Great Britain "to support its defense program and contribute to maintaining the strength and stability which are essential to that program." Despite Churchill's assurances that "We welcome your patience in the armistice negotiations (in Korea) and our two countries are agreed that if the truce we seek is reached only to be broken our response will be prompt, resolute and effective," on his return to Britain, in answer to Labour party criticism, he said it meant no change in British policy.

Secretary of State Dean Acheson supported a suggestion made by Gen. Dwight D. Eisenhower on Jan. 21 to the effect that the western European nations call a constitutional convention "to examine and actually cope with problems of greater political and economic unity." Meanwhile, the meeting at Lisbon, Port., of the North Atlantic Treaty Organization council went forward, and Acheson on Feb. 29, in a national radio broadcast, reported agreement on five basic matters in this ninth meeting of the foreign ministers of the western European powers: (1) the forces to be made available to General Eisenhower's NATO command during 1952; (2) the bases and facilities to be built and maintained for these forces; (3) the creation of a European army by six nations, including western Germany; (4) the means by which return of west Germany to a place of equality and responsibility in the European community could be achieved; and (5) the reorganization and strengthening of the NATO structure. On May 27 in Paris, the representatives of 15 European nations signed agreements creating and guaranteeing a single unified European defense force and aiming as well to bind western Germany to the Atlantic defense system. (See also EUROPEAN

UNION; NORTH ATLANTIC TREATY ORGANIZATION.) This was hailed by Secretary Acheson as a great step toward peace in Europe, and when on June 11 he defended before the senate foreign relations committee the agreement on German rearmament, he found no opposition to the proposed alliances. It was notable that Republican as well as Democratic leaders were favourable to European unification policy.

That the policies of the administration in Europe and elsewhere were not to go unchallenged was signaled on Jan. 27 when Herbert Hoover addressed a nation-wide audience by radio and television. His position was that inasmuch as European nations were lagging in contribution to their own defense, the United States should withdraw most of its ground forces from Europe and build on the western hemisphere as the "bastion of liberty." Widespread approval was given this address. That the foreign policy of the administration was to be the subject of debate in the presidential campaign was also evident, and the issues were joined as a result of an address of Sen. Robert A. Taft of Ohio on June 1. He said that the policy of President Truman and Secretary Acheson from 1944 to 1952 had been "the most disastrous in the entire history of American foreign policy" and that so-called "bi-partisan foreign policy was a fraud."

Senator Taft declared he was not an isolationist, that he would not withdraw from Europe or from Korea, nor would he withdraw from the United Nations, but "do our best to amend the Charter so that action is based on international law and the adjudication of an impartial tribunal, and the veto power eliminated." He reiterated the position, so often stated by former President Hoover, that control of the sea and priority in the air, not the possession of overwhelming land forces, should be the basic military policy of the United States.

The year was marked by the participation of military men in political debate, including not only Generals Dwight D. Eisenhower and Douglas MacArthur, but also Albert C. Wedemeyer, formerly commander of United States forces in China, and Omar N. Bradley, chairman of the joint chiefs of staff. Gen. Bradley on March 20 attacked the "Gibraltar" theory of defense of Taft and Hoover as overemphasizing the strength of air and naval power.

In the midst of the presidential campaign, a conference on Pacific problems was held in Honolulu, T.H., attended by representatives of New Zealand and Australia, and led by Secretary Acheson. Britain was not asked to send representatives, nor

were France, the Netherlands or the Philippines. On Sept. 11 Acheson gave a full-length defense of the foreign policy of the administration in which he denounced the idea that it was merely "containment" of communism.

The insistence by the Soviet Union, on Oct. 3, that United States Ambassador George F. Kennan be recalled, led to a formal defense of Kennan by the state department, but he returned to the United States.

Treaty of Peace with Japan.—On April 15 President Truman signed the treaty of peace with Japan, in which 49 nations, not including the Soviet Union, had concurred, and by which Japan recovered full sovereignty on April 28. A separate treaty of peace between Japan and nationalist China was signed on that day, which marked the formal end of World War II in the Pacific area.

Korean War.—Throughout the year the people of the United States continued to view with deep misgiving the participation of the United States in the war in Korea. The widespread acceptance in 1950 and even in 1951 of duty within the United Nations gave way to an uncertain sense of obligation in that the United States appeared unable to bring about a successful termination of the war and yet was unwilling to withdraw its forces. British and U.S. policies on the extent of the war seemed nearer together than in 1951. Those opposing the prevailing U.S. policy included Senator Taft, who on Feb. 12 advocated arming Chinese nationalist forces on Formosa for invasion of the mainland of China.

The long-drawn-out so-called "truce negotiations," begun on July 8, 1951, continued at Panmunjom. By April 1 these "talks" had been going on for nine months, and were deadlocked over the matter of forced repatriation of prisoners, the United Nations representatives insisting that there should be no forced repatriation. On May 15 Gen. Mark W. Clark succeeded Gen. Matthew B. Ridgway as commander in the far east. General Ridgway reported in Washington "significant build up of the Soviet Union's Far Eastern military strength." General Clark let it be known that he would advise bombing China if the Communist Chinese air force attacked in strength in Korea. But the stalemate continued until in late October it was evident that a "new war" had come in Korea, for the North Korean-Chinese forces were using artillery as never before. In the closing days of his campaign for the presidency, General Eisenhower declared that he would "go to Korea" himself in the hope of finding a solution to the problems of the Korean war. By November hope was dim in the United States for a negotiated peace. (See also KOREAN WAR.)

The stalemate in Korea had profound effect upon public opinion in the United States. The administration maintained its position on war, united effort and continued negotiation. Opponents said mistakes had been made (1) in a land war in Korea; (2) in failing to follow General MacArthur's leadership; (3) in not naming the U.S.S.R. the "aggressor"; and (4) in working with Great Britain in the far east.

The result of this argument within the nation was a weakening of general foreign policy and a weakening of belief in the United Nations. Thus, belief in air power was strengthened, as was faith in General Eisenhower and interest in an aggressive foreign policy.

Meanwhile, the universal military training legislation before congress was thought inadequate in an atomic age. Although its advocates felt that "its enactment may shape the destiny of this nation and possibly the peace of the world for the rest of this century," the matter was nevertheless shelved on March 4. However, to enable release of 1,080,000 men and yet keep an army of 3,700,000 in readiness, the draft continued and plans were made to take 610,000 men for training between July 1,



UNIDENTIFIED PHENOMENA photographed by a U.S. coast guardsman at the Salem air station, Mass., on July 16, 1952. Coast guard spokesmen offered no opinion as to the cause or source of the "objects," but released the picture because of widespread public interest in "flying saucers"

1952, and July 1, 1953. (See also SELECTIVE SERVICE, U.S.)

Communism in the United States.—The discussion of Communism in the United States continued throughout the year and was emphasized by three developments: (1) the activity of Sen Joseph McCarthy of Wisconsin; (2) 14 Communists on trial in Los Angeles, Calif., found guilty; and (3) the position taken by loyalty boards. A group of 38 Republican senators signed a petition of nonconfidence in Philip C. Jessup as delegate of the United States in the United Nations assembly meeting in Paris. President Truman stood against the use of state department files by congressional investigating committees. Owen Lattimore spent 11 days before the senate internal security committee late in February and in early March. On July 2 the senate investigating committee reported on the conclusion of an 18-month inquiry into the Institute of Pacific Relations, declaring Lattimore "a conscious articulate instrument of Soviet conspiracy" and recommending perjury charges. In early December the justice department moved to indict Lattimore. Meanwhile, Gen. Walter Bedell Smith, head of the central intelligence agency, stated his belief that Communists were undoubtedly within this highly secret agency, as well as in other security organizations of the federal government. On Dec. 2 a federal grand jury reported that it had found a "definite, planned pattern" by which high officials of the United States government had surrounded themselves with disloyal persons who were later shifted to key posts in the United Nations organization. (See also COMMUNISM.)

Corruption.—Late in January the house judiciary committee, without a dissenting vote, ordered a full-scale investigation of the department of justice. On Feb. 1, the president appointed Newbold Morris of New York special assistant to Atty. Gen. James Howard McGrath to investigate the charges. In accepting, Morris said he would conduct a nonpartisan investigation (not prosecution) "to clean up the spoils system in government." Morris developed his plan despite heavy criticism of his powers and of his record. He proceeded to issue a questionnaire; McGrath denied his power, the president upheld Morris and McGrath dismissed Morris.

Then Truman, with whom the attorney general had long been associated in politics, accepted the resignation of McGrath and appointed a federal judge, James P. McGranery, as attorney general. The matter of investigation was dropped.

Labour.—The first six months of the year were marked by a struggle in the steel industry. On Dec. 31, 1951, it had been announced that the members of the United Steel Workers of America, an organization of the Congress of Industrial Organizations, were prepared to strike on the issue of an increase in wages, and early in April this strike was threatened. On April 8 President Truman seized the steel industry to prevent the nation-wide walkout. Management sought injunctions against seizure. In late April Judge David A. Pine of the federal district court ruled that the president's seizure was unconstitutional and ordered return of the plants to private management. The steel workers began the threatened walkout, but the United

States court of appeals granted a stay of the order restoring the steel plants to the companies and at President Truman's request the strike was called off, pending the decision of the supreme court in this case.

On June 2 the supreme court ruled that the president's seizure of the steel industry was unconstitutional. A 54-day strike of the steel workers followed the return of the plants to private management. The president appealed to the congress for a law permitting seizure in a national emergency. The senate rejected this appeal and urged use of the Taft-Hartley law. The president rejected this proposal. So dangerous to the national defense was the stoppage of work that the president threatened to seize certain mills under the Selective Service act. Finally, just before the close of the Democratic national convention, the president summoned the leaders of labour and management to the White House, and an agreement was signed in his presence by Philip Murray of the United Steel Workers and Benjamin Fairless, president of the United States Steel corporation. It was a total victory for no one. The strike at its various stages had been marked by three significant developments: (1) serious interference with defense production; (2) positions of far-reaching import taken by both the president and the supreme court; (3) limitation of the power of the Wage Stabilization board.

In May the three-year-old railroad labour dispute had been brought to an end when three operating unions, Brotherhood of Locomotive Engineers, Order of Railway Conductors and Brotherhood of Locomotive Firemen and Enginemen, accepted the terms worked out by the representative of the president. The settlement, which provided substantial wage increases, was accepted reluctantly by the unions. They had protested against government seizure and labour injunctions. The railways, which had been under nominal operation by the army since their seizure in Aug. 1950, were returned to private management. (See also LABOUR UNIONS; RAILROADS; STRIKES; WAGE STABILIZATION BOARD.)

Immigration.—The McCarran-Walter Immigration and Nationality bill was passed by the senate on June 11 after passing the house by a vote of 203 to 53. On June 25 President Truman vetoed the bill as discriminatory and crippling to United States foreign policy. The bill, 300 pages in length, was the result of 3 years of study by congressional committees in an attempt to codify the immigration laws that had accumulated during 30 years. Despite "improvements" noted by the president, he claimed that the bill would not only continue an "outdated national origins quota system," but would actually place the rights of some citizens in jeopardy. The house of representatives, nevertheless, on June 26 voted 278 to 113 to pass the bill over the president's veto, and the following day the senate overrode the president's veto by a 57 to 26 vote. The new law provided for the annual admission of 154,658 persons, 308 more than could

CABINET APPOINTMENTS made by President-elect Eisenhower. Left to right: John Foster Dulles, secretary of state; George M. Humphrey, secretary of the treasury; Herbert Brownell, Jr., attorney general; Arthur E. Summerfield, postmaster general; Douglas McKay, secretary of the interior

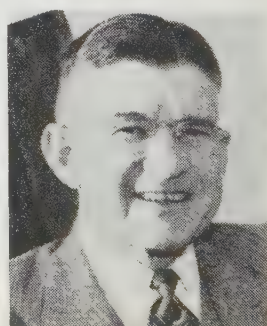
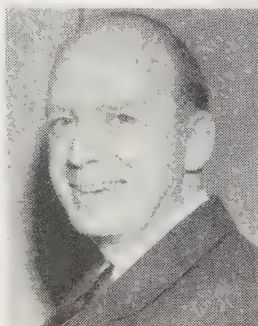


Table I.—Major Legislation Passed by U.S. Congress in 1952

Act	House Vote	Senate Vote	Date of Enactment
Treaty of Peace with Japan		66-10 Yeas: D. 38, R. 28 Nays: D. 1, R. 9 (March 20)	Instrument of ratification signed April 15
Railroad Unemployment Insurance act amendment (Increased unemployment and sickness benefits to maximum of \$7.50 and minimum of \$3 per day)	Passed by voice vote (May 5)	Passed by voice vote (April 24)	Signed May 15
Armed forces pay increase (Provided for a cost-of-living pay increase of 4% and a 14% increase in food and rental allowances for all members of the armed forces)	333-0 Yeas: D. 161, R. 171, Ind. 1 Present: R. 1 (May 15)	Passed by voice vote (May 15)	Signed May 19
Mutual Security Act of 1952 (Authorized omnibus appropriation of \$6,447,730,750 for U.S. economic, military and technical aid to foreign nations in period July 1, 1952-June 30, 1953)	230-115 Yeas: D. 157, R. 73 Nays: D. 26, R. 89 Present: R. 1 (June 5)	59-11 Yeas: D. 41, R. 18 Nays: D. 1, R. 10 (June 9)	Signed June 20
Immigration and Nationality act (Revised laws relating to immigration, naturalization and nationality)	203-53 Ayes: 203 Noes: 53 (June 10)	Passed by voice vote (June 11)	Vetoed June 25 Veto overridden House 278-113 Yeas: D. 107, R. 170, Ind. 1 Nays: D. 90, R. 23 Senate 57-26 Yeas: D. 25, R. 32 Nays: D. 18, R. 8 Enactment date June 27
Marine corps—strength, status (Fixed strength of marine corps at not less than three combat divisions and three air wings and stipulated that commandant is to have coequal status on the joint chiefs of staff in considering any matter directly concerning the marine corps)	Passed by voice vote (June 19)	Passed by voice vote (June 19)	Signed June 28
Defense Production Act Amendments of 1952 (Authorized continuation of wage and price controls to April 30, 1953, rent control to Sept. 30, 1952, and priorities and allocations to June 30, 1953; created new Wage Stabilization board without dispute authority; requested President Truman to use the Taft-Hartley act in the steel labour dispute)	194-142 Yeas: D. 127, R. 66, Ind. 1 Nays: D. 38, R. 104 (June 28)	Passed by voice vote (June 28)	Signed June 30
Puerto Rican constitution (Approved upon certain conditions the constitution of Puerto Rico adopted March 3, 1952)	Passed by voice vote (June 30)	Passed by voice vote (July 1)	Signed July 3
Emergency Powers Continuation act (Extended 48 presidential emergency war powers for duration of national emergency proclaimed Dec. 16, 1950, and six months thereafter, but not beyond April 1, 1953)	Passed by voice vote (July 2)	Passed by voice vote (July 3)	Signed July 5
Department of defense appropriation act, 1953 (Appropriated \$46,610,938,912 for U.S. armed forces in period July 1, 1952-June 30, 1953)	Passed by voice vote (July 5)	Passed by voice vote (July 5)	Signed July 10
Resale price maintenance (Amended Federal Trade Commission act to authorize contracts and agreements establishing minimum or stipulated resale prices on brand-name items which are extended by state law to persons not parties thereto)	196-10 Ayes: 196 Noes: 10 (May 8)	64-16 Yeas: D. 35, R. 29 Nays: D. 10, R. 6 (July 2)	Signed July 14
Veterans' Readjustment Assistance Act of 1952 (Authorized educational and training allowances for persons who served in the armed forces on and after June 27, 1950)	322-1 Yeas: D. 172, R. 149, Ind. 1 Nays: D. 0, R. 1 (July 4)	Passed by voice vote (July 4)	Signed July 16
Social Security act amendments of 1952 (Increased monthly benefits by 12½% or \$5, whichever is larger, where benefits are based on pre-1951 earnings and by \$5 in most cases where based on post-1950 earnings)	Passed by voice vote (July 5)	Passed by voice vote (July 5)	Signed July 18
Farm parity formula extension (Extended through the 1954 crop year the current method of computing parity prices for basic farm commodities)	Passed by voice vote (July 5)	Passed by voice vote (July 5)	Signed July 17
Peace contract with the German Federal Republic (Freed German Federal Republic from all Allied controls except those relating to defense and defined relations with the U.S., the U.K. and France)		77-5 Yeas: D. 45, R. 32 Nays: D. 0, R. 5 (July 1)	Instrument of ratification signed Aug. 2

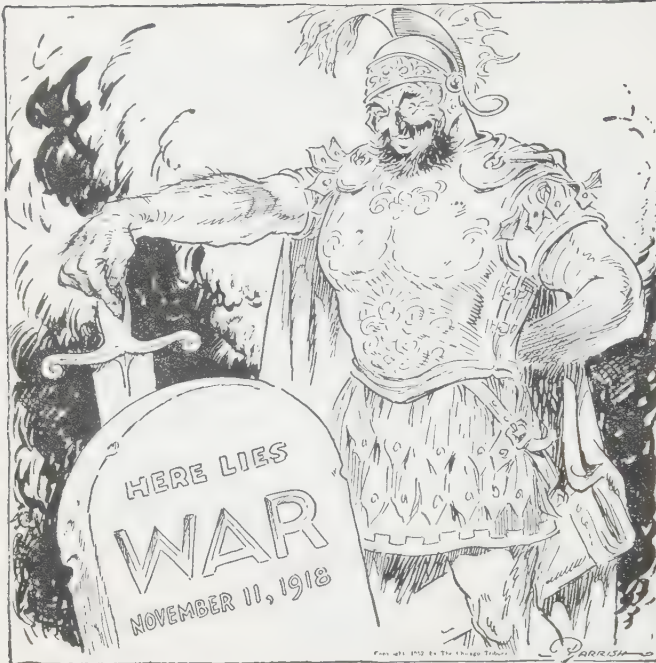
previously be admitted. Racial barriers to immigration were literally removed by a small quota (2,000) admissible from Asiatic countries, and the ban to naturalization of people of Asiatic birth, now resident in the United States, was wiped out. Foreigners married to women citizens of the United States might henceforth enter the country without reference to quotas, as might the foreign brides of servicemen, and certain foreign

members of families established in the country might be exempt from literacy tests for entry. But provisions for the admission, exclusion and deportation of aliens dangerous to the national security were strengthened by the law, and a system of selective immigration instituted whereby top priority would be given those having superior education or skills needed in the country. (See also IMMIGRATION AND EMIGRATION.)

Transition of Power.—The election of Dwight D. Eisenhower to the presidency on Nov. 4 reflected one of the "tidal sweeps" of United States political history. Abrupt changes had been provided in the election of Abraham Lincoln in 1860, of Warren

CABINET APPOINTMENTS made by President-elect Eisenhower. Left to right: Ezra T. Benson, secretary of agriculture; Sinclair Weeks, secretary of commerce; Martin P. Durkin, secretary of labour; Charles E. Wilson, secretary of defense; Oveta Culp Hobby, federal security administrator. Mrs. Hobby, while not holding an office of cabinet rank, was to attend cabinet meetings





"READING HIS EPITAPH AGAIN," a 1952 cartoon by Parrish of the *Chicago Tribune*

G. Harding in 1920 and of Franklin D. Roosevelt in 1932; yet each of these upheavals had been a party triumph, and the leader had been less important than the movement of the masses in the direction he seemed to point. In 1952 the leader was of primary importance, and this fact was the most significant aspect of the election.

Pressure of problems and need of immediate action were reflected in the swift moves made by the outgoing and the incoming administration to achieve a transition of power at an earlier date than ever before in the history of the United States, that is, on Jan. 20, 1953. However, it was repeatedly pointed out that the representatives of President-elect Eisenhower were in Washington during the "interregnum" as "observers" only. In addition to pressing problems in foreign relations, finance, foreign trade and taxes, two major questions presented themselves throughout the campaign and became increasingly critical as the year ended: (1) How would Eisenhower, as president and Republican party leader, deal with the basic divisions on foreign policy within the Republican membership of the senate and house? (2) How would Eisenhower deal with the schisms within the United Nations on matters involving European aid, the Korean war and the continued soviet policy of obstruction of the majority of the members of the United Nations?

Another question of vital importance was this: what would become of the Democratic party? It was a question in any political discussion, despite the fact that the Democrats had polled 45% of the popular vote for president and had heavy minority representation in both senate and house. The question arose because it appeared that party organization had disintegrated in the course of the campaign. The southern Democrats still held important committee assignments in congress. Although Adlai Stevenson became titular leader of his party, as admitted by President Truman, only among "liberals" and "independents" was Stevenson generally accepted as the leader for the next four years. President Truman and his administrative colleagues would relinquish power on Jan. 20, 1953. Inasmuch as their program in both domestic and foreign affairs was to be replaced, they were the new government's "loyal opposition" in the public eye. It seemed unlikely that Truman would disappear as a party leader. Moreover, it seemed probable that Stevenson as leader

would support many policies of the new administration. There was some expression of belief that as Eisenhower's program would develop, a realignment of power would appear within both the Democratic and Republican parties.

The meeting of President Truman and President-elect Eisenhower on Nov. 18 was unprecedented except for the meetings of Hoover and Roosevelt in Nov. 1932 and Jan. 1933, when effort had been made to achieve co-operation on both foreign and domestic policies. This earlier effort had not been productive, and it was well said of the Truman-Eisenhower meeting that Truman had the power but not the leadership, and Eisenhower had the leadership and not the power. The constitutional provision for postponement of transfer of power until Jan. 20 was responsible for this situation. Despite the impasse, representatives designated by Eisenhower (Henry Cabot Lodge, Jr., and Joseph M. Dodge) were brought into conference with representatives of the president. This had been the president's suggestion. It was pointed out that this "was the first time in American history that specific arrangements for an orderly and informed transfer of power" had been made. Meanwhile, by conferring with both Thomas E. Dewey and Robert A. Taft and numerous other party leaders of many shades of opinion and of varying record in politics, Eisenhower maintained his position, taken in the campaign, of holding together the factions of the Republican party. (See also ELECTIONS, U.S.; POLITICAL PARTIES, U.S.)

On Nov. 20 it was announced that President-elect Eisenhower had invited John Foster Dulles (as secretary of state), Charles E. Wilson of General Motors (as secretary of defense) and Douglas McKay, governor of Oregon (as secretary of the interior) to become members of his cabinet. The next day came the news of invitations to George Humphrey of Cleveland, O., to be secretary of the treasury, Herbert Brownell, Jr., to be attorney general and Harold E. Stassen to be Mutual Security director. By Dec. 2 the proposed cabinet was completed with the addition of Ezra Taft Benson as secretary of agriculture, Martin P. Durkin as secretary of labour, Arthur E. Summerfield as postmaster general and Sinclair Weeks as secretary of commerce, and the president-elect had announced as well the names of a number of men and women designated for important administrative positions at home and abroad. (See also articles on the various states.) (E. E. R.)

Foreign Credits of the U.S. Government.—Utilization of foreign credits extended by the U.S. government exceeded \$659,000,000 in the fiscal year ended June 30, 1952, an increase of more than one-half over the preceding year's total. Principal collections on foreign credits did not increase as markedly in the same period. Nevertheless, principal collections of \$334,000,000 still aggregated more than half of total utilizations. Net credit utilization in the fiscal year 1952 was almost double that in the prior 12-mo. period, raising the total indebtedness of foreign countries to the U.S. government by \$325,000,000. The amount outstanding as a result of U.S. government foreign-lending programs since the creation of the Export-Import bank (in 1934) stood at \$10,442,000,000 on June 30, 1952. During the fiscal year 1952 the U.S. government collected \$183,000,000 in interest and commissions on these outstanding credits.

Utilization of \$172,000,000 from the special wheat credit to India comprised more than one-half of net credit utilizations for the fiscal year 1952. Western European nations and dependencies drew \$229,000,000 in loans from the Mutual Security program; these utilizations were offset by large repayments during the year against early post-World War II credits to France, the Netherlands and the United Kingdom.

Credit aid constituted more than one-eighth of the total gross foreign aid by the U.S. government (grants and credits com-

Table II.—Foreign Credits of the
U.S. Government—by Agency and by Country, June 30, 1952

	Total	Outstanding	Unutilized commitments
Total	\$11,508,639,253*	\$10,441,811,867	\$1,066,827,386*
By agency:			
Commerce department:			
Maritime administration (Merchant ships) .	144,136,472	144,136,472	
Defense department:			
Army department (Surplus property) . .	20,000,000	20,000,000	
Defense Materials Procurement agency:			
For own account . .	7,837,174	1,614,311	6,222,863
For Mutual Security agency	128,288,008	52,319,018	75,968,990
Export-Import bank:			
For own account (including agent-bank loans)	3,306,779,026	2,395,866,936	910,912,090
For Mutual Security agency:			
European program	1,306,092,000	1,284,551,013	21,540,987
Indian loan . . .	190,000,000	171,828,112	18,171,888
Spanish loan . . .	52,688,011	23,662,106	29,025,905
General Services administration (Surplus property) . .	13,726,645	13,726,645	
Reconstruction Finance Corporation (Loans) .	60,129,474	60,129,474	
State department:			
Institute of Inter-American Affairs	8,186	8,186	
United Nations headquarters loan . .	64,000,000	60,568,825	3,431,175
Treasury department:			
British loan	3,705,663,750	3,705,663,750	
Lend-lease current credits	48,624,638	47,481,337	1,143,301
Lend-lease silver . .	291,215,173	291,215,173	
Credit-agreement offsets to grants . . .	1,212,271,240	1,212,271,240	
Surplus property . .	929,179,456	928,769,269	410,187
Philippine funding . .	28,000,000	28,000,000	
By country:			
American republics . .	895,595,979	509,865,016	385,730,963
Argentina	130,122,871	95,962,769	34,160,102
Bolivia	37,373,455	31,392,747	5,980,708
Brazil	224,120,997	105,326,002	118,794,995
Chile	95,005,126	83,205,126	11,800,000
Colombia	57,186,526	34,190,270	22,996,256
Costa Rica	6,302,738	6,302,738	
Cuba	12,000,000	3,288,000	8,712,000
Ecuador	25,116,722	15,976,711	9,140,011
El Salvador	654,611	654,611	
Haiti	18,050,001	4,050,001	14,000,000
Mexico	194,403,146	67,181,719	127,221,427
Nicaragua	1,026,500	844,184	182,316
Panama	4,000,000	4,000,000	
Paraguay	2,107,608	2,107,608	
Peru	24,797,354	4,573,600	20,223,754
Uruguay	15,510,008	13,844,171	1,665,837
Venezuela	14,067,668	7,417,438	6,650,230
Unspecified	33,750,648	29,547,321	4,203,327
Afghanistan	21,000,000	13,800,000	7,200,000
Austria	21,129,765	15,129,765	6,000,000
Belgium-Luxembourg and possessions	181,964,806	171,820,769	10,144,037
Belgium	177,264,806	167,270,337	9,994,469
Luxembourg	3,000,000	3,000,000	
Belgian Congo . . .	1,700,000	1,550,432	149,568
Commonwealth of Nations	5,226,019,636	5,154,946,114	71,073,522
United Kingdom . .	4,748,642,825	4,748,642,825	
Australia	14,197,462	14,197,462	
British East Africa . .	1,752,000	212,000	1,540,000
British Guiana . . .	133,000	128,082	4,918
Canada	15,998,684	11,575,821	4,422,863
India	361,503,467	343,331,579	18,171,888
Jamaica	21,908,509	19,373,262	2,535,247
New Zealand	3,622,762	3,622,762	
Northern Rhodesia . .	8,400,000		8,400,000
Southern Rhodesia . .	14,498,400	281,627	14,216,773
Union of South Africa	35,362,527	13,580,694	21,781,833
Burma	3,718,537	3,718,537	
China-Taiwan (Formosa) .	158,477,371	158,477,371	
Czechoslovakia	4,949,868	4,949,868	
Denmark	52,753,489	51,345,931	1,407,558
Egypt	7,250,000	7,250,000	
Ethiopia	5,017,264	5,017,264	
Finland	115,085,587	115,085,587	
France and possessions .	2,286,084,187	2,024,185,805	261,898,382
France	2,256,495,451	2,011,495,451	245,000,000
French Equatorial Africa	9,320,916	3,393,408	5,927,508
French Morocco . . .	16,387,926	8,142,766	8,245,160
New Caledonia	3,879,894	1,154,180	2,725,714
Germany	149,241,042	136,198,664	13,042,378
Greece	102,706,341	93,651,762	9,054,579
Hungary	13,741,736	13,741,736	
Iceland	5,388,483	5,388,483	
Indonesia	177,889,319	95,889,319	82,000,000
Iran	49,448,681	24,038,494	25,410,187
Ireland	128,200,000	128,200,000	
Israel	133,541,659	109,301,117	24,240,542
Italy	348,525,142	342,804,642	5,720,500
Japan	47,849,734	41,314,555	6,535,179
Korea	23,450,020	20,950,020	2,500,000
Lebanon	415,258	415,258	
Liberia	31,196,875	23,703,574	7,493,301
Netherlands	358,027,345	358,027,345	
Norway	122,915,550	100,737,826	22,177,724
Philippines	106,022,747	86,022,747	20,000,000
Poland	77,672,077	77,672,077	

Portugal and possession	39,095,526	32,220,734	6,874,792
Portugal	39,064,021	32,189,229	6,874,792
Angola	31,505	31,505	
Saudi Arabia	36,158,130	25,925,646	10,232,484
Spain	64,688,011	23,662,106	41,025,905
Sweden	21,513,253	21,513,253	
Thailand	4,347,947	4,347,947	
Turkey	107,351,325	104,308,408	3,042,917
U.S.S.R.	222,533,528	222,533,528	
Yugoslavia	55,260,635	53,081,574	2,179,061
International organization: United Nations .	64,000,000	60,568,825	3,431,175
Unspecified areas (Europe)—special cotton credits)	38,412,400		38,412,400

*Does not include amounts authorized by legislation but not committed by the agency:

Total	\$1,209,032,962		
Export-Import bank:			
For own account . .	1,199,220,973		
For Mutual Security agency (Spanish loan) . .	9,811,989		

Source: Clearing Office for Foreign Transactions, Office of Business Economics, Department of Commerce.

binéd) of \$5,006,000,000 in the fiscal year. The rise from the preceding 12-mo. period reflected, in addition to utilization of the Indian loan: (1) disbursements under the Mutual Security agency authorization for Spain and (2) utilization of Mutual Security agency loans under the congressional mandate requiring 10% of the economic aid programmed in fiscal year 1952 to be on a loan basis. (E. S. K.)

Education.—See the articles EDUCATION; UNIVERSITIES AND COLLEGES.

Defense.—For information about the armed forces of the United States in 1952, see ARMIES OF THE WORLD; AVIATION, MILITARY; COAST GUARD, U.S.; MARINE CORPS, U.S.; NATIONAL GUARD; NAVIES OF THE WORLD; SELECTIVE SERVICE, U.S.

Foreign Trade.—See the articles BUSINESS REVIEW; EXPORT-IMPORT BANK OF WASHINGTON; INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT; INTERNATIONAL MONETARY FUND; INTERNATIONAL TRADE; TARIFFS.

Communications.—For statistics, see the articles AVIATION, CIVIL; CANALS AND INLAND WATERWAYS; ELECTRIC TRANSPORTATION; MOTOR TRANSPORTATION; POST OFFICE; RADIO; RAILROADS; ROADS AND HIGHWAYS; SHIPBUILDING; SHIPPING, MERCHANT MARINE; TELEGRAPHY; TELEPHONE; TELEVISION.

Agriculture.—Statistical material pertaining to this subject may be found under AGRICULTURE; also in separate articles on the principal crops and agricultural products.

Mineral Production.—See separate articles on the principal minerals; also MINERAL AND METAL PRODUCTION AND PRICES. (X.)

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United States Government Departments and Bureaus: see GOVERNMENT DEPARTMENTS AND BUREAUS, U.S. Also see under specific name, e.g. COAST GUARD, U.S., etc.

United States Investments Abroad: see FOREIGN INVESTMENTS.

United States Junior Chamber of Commerce: see SOCIETIES AND ASSOCIATIONS, U.S.

United States Mint: see COINAGE.

Universities and Colleges. The following nine pages carry a selected list of accredited schools of college and junior college grade in the U.S. and Canada, with certain information for the academic year 1951-52.

The symbol * denotes 1950-51 data; † denotes data previous to 1950-51. (See also EDUCATION.)

Institution and Location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Volumes	Institution and Location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Volumes
Acadia University, Wolfville, N.S., Can.	1838	Watson Kirkcormell	486	508	59	\$1,248,644	90,000	Anderson College and Theological Seminary, Anderson, Ind.	1917	John A. Morrison	631	736	46	\$36,065	22,000
Adams State Col., Alamosa, Colo.	1921	F. J. Plachy	375	488	36	—	29,900	Andrew College (Jr.), Cuthbert, Ga.	1854	Albert W. Ray	53	69	10	192,291	7,566
Adelphi College, Garden City, N. Y.	1896	Paul D. Eddy	1,804	2,404	127	849,901	59,737	Annapolis Valley Jr. Col., Lancaster, Calif.	1929	Walter Angus	112	130	18	—	10,000
Agnes Scott College, Decatur, Ga.	1889	Wallace P. Alston	449	458	58	2,838,467	81,000	Antioch College, Yellow Springs, Ohio	1852	Douglas McGregor	1,014	—	74	2,738,000	77,777
Akron, University of, Akron, Ohio	1870	Warren P. Albion	1,831	3,753	207	1,373,353	85,694	Appalachian State Tch. Col., Boone, N.C.	1903	B. B. Dougherty	1,088	1,197	78	49,800	22,000
Alabama, University of, University, Ala.	1831	John M. Caldwell	6,150	6,250	700	7,000,000	350,000	Aquinas College, Grand Rapids, Mich.	1923	Arthur F. Bukowski	333	451	35	1,415,000	48,000
Alabama, University of, Normal, Ala.	1875	Joseph F. Drake	963	963	67	—	20,650	Arizona, University of, Tucson, Ariz.	1885	Richard A. Harvill	4,800	5,108	350	230,000	39,410
Alabama A. and M. College, Normal, Ala.	1895	F. E. Lund	542	548	453	872,000	165,000	Arizona State Col., Flagstaff, Ariz.	1899	Lacey A. Eastburn	3,807	4,443	169	—	125,631
Alabama Polytechnic Inst., Auburn, Ala.	1872	Ralph B. Droughton	990	1,047	70	—	44,977	Arkansas, University of, Fayetteville, Ark.	1871	Grady Cummage	3,756	4,404	400	132,000	304,650
Alabama State Tch. Col., Florence, Ala.	1873	Ethebert B. Norlan	901	1,190	60	—	33,000	Arkansas A. and M. Col., College Heights, Ark.	1885	J. T. Caldwell	700	1,100	45	—	20,000
Alabama State Tch. Col., Livingston, Ala.	1883	W. W. Hill	550	868	36	—	14,472	Arkansas Agricultural, Mechanical and Normal College, Pine Bluff, Ark.	1909	Horace E. Thompson	1,008	1,083	75	—	22,048
Alabama State Tch. Col., Montgomery, Ala.	1874	H. Council Trenholm	668	918	46	—	34,768	Arkansas Polytech. Col., Russellville, Ark.	1873	Lawrence A. Davis	681	1,172	51	—	26,215
Alabama State Tch. Col., Troy, Ala.	1887	C. B. Smith	220	277	54	12,600	29,000	Arkansas State Col., Searcy, Ark.	1909	J. W. Hull	869	1,917	80	—	30,100
Alaska, University of, College, Alaska	1917	Terris Moore	528	827	43	—	16,629	Arkansas State Tch. Col., Conway, Ark.	1907	Carl R. Reng	1,033	1,265	75	—	28,500
Albany State College, Albany, Ga.	1906	Aaron Stewart	3,215	3,249	395	910,405	136,600	Arlington State Col., Arlington, Tex.	1917	Nolen M. Irbey	1,109	1,318	86	—	49,549
Alberta, Univ. of, Edmonton, Alta., Can.	1925	Sister M. Coralita	220	228	30	11,204	28,000	Armstrong College (Jr.), Savannah, Ga.	1930	E. H. Hereford	237	653	19	46,050	10,000
Albertus Magnus Col., New Haven, Conn.	1835	W. W. Whitehouse	1,005	1,010	75	4,831,650	75,978	Armstrong College, Wilmore, Ky.	1895	Foreman M. Howes	836	844	48	1,500,000	46,167
Albion College, Albion, Mich.	1856	Harry V. Masters	546	571	44	209,871	35,000	Ashland College, Ashland, Ohio	1878	Z. T. Johnson	335	464	35	462,909	26,300
Albright College, Reading, Pa.	1856	J. R. Otis	556	686	54	2,440,000	72,375	Assumption College, Worcester, Mass.	1904	Glen H. Clayton	154	190	20	—	40,000
Alcorn A. and M. College, Alcorn, Miss.	1871	M. Ellis Drake	866	1,051	82	—	121,000	Atlanta Div., Univ. of Ga., Atlanta, Ga.	1914	Armand H. Desautels	3,331	4,163	182	6,631,404	40,000
Allegheny College, Meadville, Pa.	1815	Louis T. Benzzel	995	1,024	77	—	16,000	Atlanta University, Atlanta, Ga.	1867	George M. Sparks	383	383	68	—	175,000
Allen University, Columbia, S.C.	1816	Samuel R. Higgins	593	593	35	5,000,000	21,000	Atlantic Union College, S. Lancaster, Mass.	1882	Rufus E. Clement	246	335	39	—	31,153
Alliance Col., Cambridge Springs, Pa.	1912	Arthur P. Coleman	157	157	20	—	55,323	Augustana College, S. Lancaster, Mass.	1925	Lewis N. Holm	1,274	1,626	59	—	14,000
Alma College, Alma, Mich.	1886	John Stanley Harker	440	446	32	619,565	26,618	Augustana College, Rock Island, Ill.	1860	Eric W. Hardy	929	1,191	71	1,614,049	80,000
Alma College, Milwaukee, Wis.	1936	Sister M. Augustine	259	945	45	—	14,066	Austiana College, Sioux Falls, S.D.	1860	Conrad Bergendoff	560	624	44	479,493	32,137
Amarillo College (Jr.), Amarillo, Tex.	1929	A. M. Meyer	803	1,339	42	200,000	30,000	Austrian College, Aurora, Ill.	1893	L. M. Stovig	251	333	33	78,640	37,124
American Int. Col., Springfield, Mass.	1885	Spencer Miller, Jr.	698	4,681	237	911,566	141,677	Austin College, Sherman, Tex.	1849	T. P. Stephens	469	591	40	1,125,000	26,293
American University, Washington, D.C.	1893	Hurst R. Anderson	1,047	1,063	103	16,716,185	283,460	Austin Peay State College, Clarksville, Tenn.	1927	Halbert Horvill	470	802	55	—	26,293
Amherst College, Amherst, Mass.	1825	Charles W. Cole	—	—	—	—	—	Averett College (Jr.), Danville, Va.	1859	Curtis V. Bishop	193	282	25	88,000	8,000

Institution and Location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Library Volumes
B							
Bakersfield College (Jr.), Bakersfield, Calif.	1913	Ralph Prator	873	1,455	101	—	16,844
Baker University, Baldwin City, Kan.	1858	Nelson P. Horn	480	495	34	\$1,475,702	85,375
Baldwin-Wallace College, Berea, Ohio	1845	John R. Knights	1,223	1,555	103	2,508,000	56,000
Ball State Teachers College, Muncie, Ind.	1918	John L. Enright	2,430	2,925	183	—	121,724
Barat College, Lake Forest, Ill.	1863	Margaret Reilly	355	359	36	—	33,181
Barber-Scolio College, Concord, N.C.	1867	L. S. Cozart	173	176	17	850,000	13,504
Barclay College, Annandale-on-Hudson, N.Y.	1869	James H. Case, Jr.	2,047	2,633	39	140,103	60,000
Barnard College, New York, N.Y.	1864	Millicent C. McIntosh	1,607	2,047	125	7,000,000	72,345
Barr College, Lewiston, Me.	1864	Mather Mary Gerald	215	293	23	—	17,615
Bay City Junior College, Bay City, Mich.	1922	Charles F. Phillips	834	837	57	2,023,642	90,000
Beaumont College, Jacksonville, Fla.	1845	Eric J. Bradner	322	369	32	5,213,080	13,263
Beaver College, Jenkintown, Pa.	1853	Guy T. Gillespie	160	164	24	677,333	28,000
Belhaven College, Jackson, Miss.	1878	Raymon M. Kistler	205	373	38	—	50,000
Belmont College (Jr.), Belmont, N.C.	1878	Vincent G. Taylor	480	491	64	—	19,905
Belmont College, Belmont, Tenn.	1846	Warren F. Jones	87	116	20	3,007,000	160,000
Belmont College, Belmont, N.C.	1846	Carry Cronis	930	935	80	—	29,364
Bemidji State Univ., Bemidji, Minn.	1913	J. A. Becraft	535	611	35	333,907	28,624
Bennett College, Greensboro, N.C.	1873	David D. Jones	438	439	32	1,050,933	21,167
Bennett Junior College, Millbrook, N.Y.	1891	Corney Carroll	205	205	40	200,000	14,000
Bennett College, Greensboro, N.C.	1873	F. H. Burkhardt	317	323	50	128,000	32,000
Berea College, Berea, Ohio	1855	Francis S. Hutchins	1,082	1,089	91	15,234,300	119,000
Bessie Tift College, Forsyth, Ga.	1849	C. T. Vazner	181	217	25	632,820	51,000
Bethany College, Bethany, W. Va.	1840	B. R. Weimer	479	501	42	31,931,180	28,000
Bethany College, Lindsborg, Kan.	1881	Emory Lindquist	247	292	29	608,130	30,000
Bethel College, North Newton, Kan.	1887	Ed. W. Richardson	298	320	35	12,000	8,000
Bethune-Cookman Col., Daytona Beach, Fla.	1872	Richard V. Moore	534	618	50	536,060	20,548
Birmingham-South. Col., Birmingham, Ala.	1856	George R. Stuart	690	697	56	1,200,000	60,000
Bishop College, Marshall, Tex.	1881	Alfonso K. Curry, Jr.	588	886	55	22,464	21,500
Bishop University, Lenoxville, Que., Can.	1843	A. R. Jeff	233	235	21	2,000,000	30,000
Blackburn College, Carlinville, Ill.	1837	Robert E. Ludlum	353	355	28	1,855,035	20,000
Black Hills Teachers College, Spearfish, S.D.	1893	Russell E. Jones	325	325	28	—	28,000
Blinn College (Jr.), Brenham, Tex.	1883	Thomas M. Spencer	317	1,170	39	118,652	7,010
Bluefield College (Jr.), Bluefield, W. Va.	1893	Charles L. Harman	186	212	19	—	6,818
Blue Mountain Col., Blue Mountain, Miss.	1873	H. L. Dickason	350	350	35	518,000	18,750
Boise Junior College, Boise, Ida.	1932	Lawrence C. Lowrey	242	232	28	—	19,640
Boston, Teachers College of the City of, Boston, Mass.	1862	Eugene B. Chaffee	401	579	45	—	14,000
Boston College, Chestnut Hill, Mass.	1863	William F. Looney	656	1,204	42	—	31,300
Boston University, Boston, Mass.	1863	J. R. N. Maxwell	4,076	5,987	367	1,305,000	37,845
Bowdoin College, Brunswick, Me.	1794	Harold C. Case	926	2,564	106	6,022,264	375,000
Bowling Green St. Univ., Bowling Green, O.	1910	J. S. Coles	807	810	75	1,623,693	224,000
Bradford Junior College, Bradford, Mass.	1897	Ralph W. McDonald	334	342	29	500,000	20,110
Bradley University, Peoria, Ill.	1897	Dorothy M. Bell	299	299	24	2,618,773	85,000
Branch Agri. Coll. (Jr.), Cedar City, Utah	1899	David B. Owen	270	388	44	—	15,000
Brescia College, Brandon, Man., Can.	1878	Daryl C. Evans	179	191	16	1,000,000	6,000
Brescia College, Owensville, Ky.	1874	Joseph Cradup	209	220	30	631,169	24,000
Brevard College, Brevard, N.C.	1934	Mother A. Merrin	139	140	17	120,000	11,000
Brier Cliff College, Sioux City, Ia.	1930	George B. Ellhardt	327	327	24	505,664	13,677
Bridgwater College, Bridgwater, Va.	1922	Shirley Jean Marie	222	222	24	—	25,000
Bridgwater College, Bridgwater, Va.	1922	James H. Halsey	1,326	2,855	173	22,443	42,000
British Columbia Univ. of Vancouver, B.C., Can.	1875	Ernest L. Wilkinson	4,984	5,203	250	288,000	170,450
Brooklyn, Polytechnic Inst. of, Brooklyn, N.Y.	1854	N. A. M. MacKenzie	5,555	5,992	400	1,524,600	275,000
Brooklyn College, Brooklyn, N.Y.	1930	H. S. Rogers	1,275	1,671	419	592,400	42,000
Bryn Mawr College, Bryn Mawr, Pa.	1764	Henry D. Gilson	836	2,267	981	31,107	208,231
Bucknell University, Lewisburg, Pa.	1846	Katharine E. Hildreth	1,891	2,738	119	14,922,816	735,000
Buller University, Indianapolis, Ind.	1850	Thomas R. McConnell	1,924	2,098	176	5,500,000	154,000
C							
California, University of, Berkeley, Los Angeles, Santa Barbara, San Francisco, Davis, Mount Hamilton, La Jolla and Riverside, Calif.	1868	Robert G. Sproul	34,883	34,883	4,807	57,761,408	2,897,592
California Inst. of Tech., Pasadena, Calif.	1891	Lee A. DuBridge	1,023	1,023	155	23,888,572	82,705
California State Polytechnic College, San Luis Obispo, Calif.	1901	Julian A. McPhee	2,213	2,213	142	—	21,000
Calvin College and Seminary, Grand Rapids, Mich.	1876	William Spoelhof	1,254	1,292	67	\$201,937	39,500
Campbell College (Jr.), Buie's Creek, N.C.	1887	Leslie H. Campbell	335	357	29	180,551	10,663
Campbellsville College, (Jr.), Campbellsville, Ky.	1906	Roger C. Carter	281	321	17	60,000	8,645
Canal Zone Jr. Col., Balboa Heights, C.Z.	1933	John C. Hackett	83	313	24	—	13,000
Canisius College, Buffalo, N.Y.	1870	Raymond W. Schouten	1,343	2,503	111	155,634	52,023
Capital University, Columbus, Ohio	1850	Harold L. Yochum	1,080	1,087	78	681,816	68,000
Carleton College, Northfield, Minn.	1866	Aaron E. Jones	229	595	44	—	6,000
Carnegie Institute of Tech., Pittsburgh, Pa.	1909	John C. Warner	2,887	4,353	375	4,564,326	154,229
Carroll College, Waukegan, Wis.	1840	R. V. Kavanagh	294	472	32	29,052,468	104,191
Carroll College, Portland, Ore.	1870	Robert D. Steele	858	936	44	650,000	21,000
Carson-Newman Col., Jefferson City, Tenn.	1851	Daniel Harley Fife	416	432	39	1,041,929	44,868
Cascade College, Corvallis, Ore.	1918	H. H. Leniz	434	462	34	766,061	41,816
Catsba College, Salisbury, N.C.	1880	Elmer Hutchison	1,146	1,890	176	6,406,446	47,300
Catholic Univ. of America, Wash., D.C.	1863	A. R. Keppel	556	591	46	376,133	35,584
Cedar Crest College, Allentown, Pa.	1887	Patrick J. McCormick	2,598	3,750	439	5,918,940	424,046
Centenary College of La., Shreveport, La.	1825	Dale Hendry Moore	354	358	37	196,870	30,000
Centenary College, Fayette, Mo.	1867	Joe J. Mickle	659	1,498	84	3,065,000	32,748
Central College, Pella, Ia.	1855	Edward W. Seay	423	423	32	28,842	14,000
Central College, Pella, Ia.	1855	Ralph Lee Woodward	579	596	40	1,101,180	51,270
Central Junior College, El Centro, Calif.	1925	G. T. Vander Lugt	328	342	35	640,815	27,050
Central Michigan College of Education, Mt. Pleasant, Mich.	1892	Wm. Bloom	117	160	20	—	4,000
Central Missouri St. Col., Warrensburg, Mo.	1870	Charles L. Anspach	1,576	3,172	143	81,990	81,990
Central State College, Edmond, Okla.	1890	G. W. Diemer	1,387	1,776	106	81,391	81,391
Central Wash. Col. of Educ., Ellensburg, Wash.	1891	W. Max Chambers	964	1,097	58	40,915	40,915
Central College, Danville, Ky.	1819	Robert E. McConnell	955	1,074	85	60,000	60,000
Chaparral College, Ontario, Calif.	1883	Walter A. Groves	377	385	36	2,543,679	61,316
Chapman College, Los Angeles, Calif.	1861	Daniel B. Milliken	661	727	54	43,000	43,000
Chapman College of Charleston, S.C.	1785	George N. Reeves	212	238	35	500,000	23,698
Chatham College, Charlotte, N.C.	1886	George D. Locke	167	185	18	745,000	34,488
Chatham Hill College, Philadelphia, Pa.	1871	David A. Glickmiller	815	1,386	86	1,070,526	50,000
Chicago, School of the Art Inst. of, Chicago, Ill.	1879	Sister Maria Kostka	417	535	51	103,000	37,400
Chicago City Junior College, Chicago, Ill.	1934	C. Hubert Rapp	940	946	66	312,000	58,000
Chicago Musical College, Chicago, Ill.	1857	Lawrence A. Kimpton	9,266	14,176	817	73,502,425	1,820,071
Chicago Teachers College, Chicago, Ill.	1889	James M. McCallister	792	1,147	55	15,000	15,000
Christian Brothers College, Memphis, Tenn.	1871	O. S. Williams	1,631	2,956	113	—	68,500
Christian College (Jr.), Columbia, Mo.	1851	Peter J. Masika, Jr.	2,350	4,603	140	44,886	44,886
Citadel The College of Charleston, S.C.	1842	Rudolph Gatz	316	688	106	323,000	6,100
Citrus Junior College, Azusa, Calif.	1915	Glenn Kendall	1,056	2,089	88	—	50,000
Civil College, New York, N.Y.	1847	Brother Richard	1,163	1,348	85	—	52,250
Claremont Graduate School, Claremont, Calif.	1925	J. C. Miller	91	91	27	1,500,000	9,800
Clark College, Atlanta, Ga.	1947	Raymond Walters	286	286	40	112,000	14,386
Clark College, Dubuque, Ia.	1843	C. P. Summerville	5,550	13,783	933	11,484,964	60,140
Clarkson College of Technology, Potsdam, N.Y.	1887	Martin E. Eisenbitt	1,463	1,463	108	52,445	52,445
Clarkson College, Worcester, Mass.	1889	Buell G. Gallagher	140	155	33	—	15,000
Clemson Agricultural Col., Clemson, S.C.	1889	J. J. Seabrook	9,304	31,562	1,577	534,632	336,959
Coe College, Cedar Rapids, Ia.	1851	E. W. Lyon	320	323	24	161,872	15,273
Colby College, Waterville, Me.	1826	James C. S. Benson	145	460	131	1,084,500	75,319
Colgate University, Hamilton, N.Y.	1863	George P. Brawley	297	300	30	1,050,000	195,000
Collegiate of the Seneca, Geneva, N.Y.	1822	P. F. Gaiser	678	686	47	1,007,093	8,400
Colorado A. & M. Col., Fort Collins, Colo.	1876	Sister Mary Anne Leone	448	861	42	—	7,000
Colorado State College, Fort Collins, Colo.	1876	William G. Van Nale	347	433	46	305,625	27,000
Colorado State College, Fort Collins, Colo.	1876	Howard B. Jefferson	1,109	1,116	75	1,573,029	25,000
Colorado State College, Fort Collins, Colo.	1876	Robert F. Poole	739	826	69	6,277,476	200,000
Colorado State College, Fort Collins, Colo.	1876	Donald C. Carr	2,725	2,788	268	333,208	123,000
Colorado State College, Fort Collins, Colo.	1876	Donald C. Carr	102	110	9	550	7,000
Colorado State College, Fort Collins, Colo.	1876	Donald C. Carr	584	645	60	2,198,043	58,174
Colorado State College, Fort Collins, Colo.	1876	Donald C. Carr	261	280	30	693,000	26,000
Colorado State College, Fort Collins, Colo.	1876	Donald C. Carr	1,039	1,050	79	4,500,000	20,000
Colorado State College, Fort Collins, Colo.	1876	Donald C. Carr	432	433	37	515,000	20,000
Colorado State College, Fort Collins, Colo.	1876	Donald C. Carr	1,293	1,317	98	5,853,447	186,006
Colorado State College, Fort Collins, Colo.	1876	Donald C. Carr	865	891	128	735,000	93,400
Colorado State College, Fort Collins, Colo.	1876	Donald C. Carr	269	273	64	—	—
Colorado State College, Fort Collins, Colo.	1876	Donald C. Carr	7,980	10,402	646	944,686	452,000
Colorado State College, Fort Collins, Colo.	1876	Donald C. Carr	3,289	3,502	228	614,920	145,000

Institution and Location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Volumes
Colorado College, Colorado Springs, Colo.	1874	William H. Gill	852	964	60	\$3,339,843	150,000
Colorado School of Mines, Golden, Colo.	1874	John W. Vanderwilt	851	851	92	129,216	75,000
Colorado State Col. of Educ., Greeley, Colo.	1890	William R. Ross	1,698	1,756	134	—	131,916
Colorado Woman's College (Jr.), Denver, Colo.	1888	Val H. Wilson	408	408	45	121,138	10,085
Columbia College, Columbia, S.C.	1854	R. Wright Spears	187	324	27	700,000	17,000
Columbia University, New York, N.Y.	1754	Grayson L. Kirk	13,849	27,278	2,516	87,186,620	25,000,898
Compton College, Compton, Calif.	1927	Stuart F. McComb	1,660	1,770	70	—	2,000
Concord College, Athens, W.Va.	1875	Virgil H. Stewart	631	644	49	—	20,000
Concordia College, Moorhead, Minn.	1891	J. L. Knutson	830	890	63	591,710	38,781
Concordia College Inst. (Jr.), Bronxville, N.Y.	1881	Albert E. Meyer	109	109	15	—	15,800
Concordia Teachers College, River Forest, Ill.	1864	Arthur W. Klink	556	557	43	—	33,100
Connecticut, Tch. Col. of New Britain, Conn.	1849	Herbert D. Waite	1,060	1,602	103	—	40,000
Connecticut, University of, Storrs, Conn.	1881	A. N. Jorgensen	7,357	9,074	742	161,000	146,000
Connecticut College, New London, Conn.	1911	Rosemary Park	842	849	104	2,500,000	137,919
Contra Costa Jr. Col., Martinez, Calif.	1889	Drummond J. McCum	2,000	2,800	111	—	6,000
Converse College, Spartanburg, S.C.	1849	Edw. M. Gwathmey	296	311	40	670,964	42,000
Cooper Union, New York, N.Y.	1859	Edwin S. Burdell	1,302	1,302	153	9,835,518	110,000
Copiah-Lincoln Jr. Col., Nesson, Miss.	1928	J. M. Ewing	289	289	40	—	11,000
Cornell College, Mount Vernon, Iowa	1853	Russell D. Cole	645	654	37	2,942,486	65,000
Cornell University, Ithaca, N.Y.	1865	Deane W. Malott	9,926	9,926	1,364	46,959,691	1,509,728
Cotley College (Jr.), Nevada, Mo.	1884	Blanche Hinman Dow	242	249	20	61,563	10,437
Creighton University, Omaha, Neb.	1878	Carl M. Reinert	2,130	2,401	442	897,614	154,395
Culver-Stockton College, Canton, Mo.	1853	Leslie E. Ziegler	303	310	31	452,694	36,793
Cumberland Col. (Jr.), Williamsburg, Ky.	1888	J. M. Boswell	276	288	20	660,800	10,000
D							
Dakota Wesleyan University, Mitchell, S.D.	1885	M. D. Smith	158	217	13	582,676	30,000
Dalhousie Univ., Halifax, N.S., Can.	1818	Alexander E. Kerr	1,399	1,422	229	4,509,998	122,942
Danbury State Tch. Col., Danbury, Conn.	1903	Ruth A. Radford	375	825	25	—	25,000
Dartmouth College, Hanover, N.H.	1770	John Sloan Dickey	2,755	2,798	319	28,568,045	664,443
Dartmouth College, Hanover, N.H.	1837	John R. Cunningham	828	828	38	6,222,850	60,000
Davis and Elkins Col., Elkins, W. Va.	1904	R. B. Purdon	550	579	40	248,000	50,000
Dayton, University of, Dayton, Ohio	1950	George J. Knepper	1,934	3,538	187	—	50,000
DePaul University, Chicago, Ill.	1875	Fred K. Esheimer	1,426	1,754	41	71,500	7,500
Delaware State College, Newark, Del.	1891	John A. Perkins	1,843	3,771	193	—	40,000
Del Mar College (Jr.), Corpus Christi, Tex.	1891	M. E. Thomason	115	168	19	—	10,000
Delta State Tch. Col., Cleveland, Miss.	1924	E. L. Harvin	684	2,675	150	—	30,000
Delta University, New Orleans, La.	1930	William M. Kethley	389	415	46	4,118,966	95,850
Dixie Junior College, St. George, Utah	1911	A. Blair Knapp	1,125	1,136	69	2,575,445	281,655
Doane College, Crete, Neb.	1872	David L. Crawford	275	278	29	—	100,000
Drake University, Des Moines, Ia.	1881	H. G. Harmon	2,528	4,856	198	8,070,280	110,969
Drexel University, Philadelphia, Pa.	1867	Fred G. Holloway	566	624	65	5,870,891	110,969
Drexel Institute of Tech., Philadelphia, Pa.	1891	James Greese	2,410	5,793	216	7,199,036	16,214
Drury College, Springfield, Mo.	1873	J. F. Findlay	594	1,125	75	1,504,000	60,000
Dubuque, University of, Dubuque, Ia.	1852	Rollo La Porte	505	551	45	1,225,000	36,950
Duquesne College, Omaha, Neb.	1881	Mother Mary Downey	233	241	22	—	22,000
Duke University, Durham, N.C.	1838	A. Hollis Edens	4,631	4,631	568	20,000,898	1,038,898
Duluth, Minn.	1895	John E. King	1,155	1,210	115	—	38,600
Dunbarton College of Holy Cross, Wash., D.C.	1935	Sister Mildred Dolores	170	202	35	—	26,500
Duquesne University, Pittsburgh, Pa.	1881	Vernon F. Gallagher	2,301	4,079	312	3,980,000	61,227
D'Youville College, Buffalo, N.Y.	1908	Sister Margaret of the Sacred Heart	423	456	42	—	30,000
E							
Earlham College, Richmond, Ind.	1847	Thomas E. Jones	605	653	65	1,662,201	75,000
East Carolina Col., Greenville, N.C.	1907	J. D. Todd	1,740	2,312	105	—	74,714
East Central Junior Col., Decatur, Miss.	1928	Chas. F. Spencer	437	441	38	—	37,721
East Central State College, Ada, Okla.	1909	Robert G. Buzzard	1,103	1,368	140	—	35,000
Eastern Illinois State Col., Charleston, Ill.	1895	W. F. O'Donnell	1,193	1,290	88	—	84,948
Eastern Kentucky St. Col., Richmond, Ky.	1906	A. G. Peterson	459	611	30	—	17,000
Eastern Montana College of Education, Billings, Mont.	1927	Edward S. Mann	417	479	30	—	22,000
Eastern Nazarene College, Quincy, Mass.	1918	Floyd D. Golden	596	795	61	31,135	24,830
Eastern New Mexico Univ., Portales, N.M.	1927						
F							
Fairleigh Dickinson Col. (Jr.), Rutherford, N.J.	1941	Peter Sammartino	1,073	2,583	132	600,000	23,564
Fairmont State College, Fairmont, W. Va.	1867	John W. Pence	640	874	62	—	36,558
Fayetteville State Tch. Col., Fayetteville, N.C.	1877	J. W. Seabrook	602	610	34	—	28,005
Fenn College, Cleveland, Ohio	1881	G. B. Earnest	962	4,462	205	—	30,000
Finn Junior College, New York, N.Y.	1900	Roland R. De Marco	125	125	41	—	9,500
Findlay College, Findlay, Ohio	1882	H. Clifford Fox	238	308	24	475,145	16,000
Fisk University, Nashville, Tenn.	1867	Charles S. Johnson	643	689	73	4,485,000	105,437
Fisk University, Nashville, Tenn.	1893	W. Fred Totten	681	814	37	—	14,000
Florida Macdonald College, Red Springs, N.C.	1926	Marshall S. Woodson	267	275	30	404,752	17,476
Florida, University of, Gainesville, Fla.	1853	J. Hillis Miller	9,003	9,003	697	331,779	445,246
Florida A. and M. Col., Tallahassee, Fla.	1887	George W. Gore, Jr.	1,994	2,073	153	—	28,607
Florida Normal and Industrial Memorial College, St. Augustine, Fla.	1892	R. W. Puryear	176	397	14	—	8,000
Florida Southern College, Lakeland, Fla.	1885	Dodd M. Spivey	1,400	1,700	85	1,600,000	40,000
Florida State Univ., Tallahassee, Fla.	1857	Luak S. Campbell	3,922	5,924	442	206,000	331,388
Fordham University, Saint Louis, Mo.	1923	Mother Mary M. Casey	519	577	54	—	37,300
Fordham University, New York, N.Y.	1841	Laurence J. McKinley	5,919	8,876	458	1,200,000	288,127
Fort Valley State College, Hays, Kan.	1902	M. C. Cunningham	905	985	90	—	19,000
Fort Valley State College, Fort Valley, Ga.	1895	C. V. Troup	626	961	55	—	14,281
Francis T. Nicholls Jr. Col. of LSU, Thibodaux, La.	1944	Troy H. Middleton	179	181	24	—	2,813
Franklin and Marshall Col., Lancaster, Pa.	1787	Theodore A. Distler	1,030	1,536	92	1,737,423	120,200
Franklin College of Indiana, Franklin, Ind.	1834	Harold W. Richardson	417	1,209	37	1,259,737	38,634
Fresno Jr. Col., Fresno, Calif.	1911	Thomas A. Bickley	620	1,209	50	—	4,300
Fresno State College, Fresno, Calif.	1911	Henry H. Hill	1,202	1,788	108	5,578,823	589,765
Fullerton Junior College, Fullerton, Calif.	1913	Hugh M. Tiner	1,004	1,020	113	1,000,000	40,000
Furman University, Greenville, S.C.	1826	Samuel S. Hill	324	580	42	599,595	21,634
Gannon College, Erie, Pa.	1944	Hunter Guthrie	1,075	4,830	797	6,000,000	210,268
Gardner Webb Col. (Jr.), Boiling Springs, N.C.	1905	Mary Sheerin	129	129	17	—	13,000
General Beadle St. Tch. Col., Madison, S.D.	1881	Cloyd H. Marvin	315	359	840	3,000,000	28,000
Geneva College, Beaver Falls, Pa.	1848	Harold C. Coffman	211	255	28	250,000	26,000
George Peabody Col. for Tch., Nashville, Tenn.	1785	Onier Clyde Adershold	4,337	4,737	610	2,343,967	269,029
George Peabody Col. for Tch., Nashville, Tenn.	1937	Blake R. Van Leer	3,560	4,117	332	748,908	116,000
Georgetown College, Los Angeles, Calif.	1829	Ren A. Thorne	161	164	31	—	5,000
Georgetown College, Georgetown, Ky.	1829	Sister Marie Anna	217	225	39	—	30,000
Georgetown University, Washington, D.C.	1789						
Georgetown Visitation Jr. College, Wash., D.C.	1919						
Georgia College, Athens, Ga.	1821						
Georgia Institute of Tech., Atlanta, Ga.	1885						
Georgia Military Col. (Jr.), Milledgeville, Ga.	1879						
Georgian Court College, Lakewood, N.J.	1908						
G							
Gannon College, Erie, Pa.	1944	Joseph J. Wehrle	518	749	57	2,500,000	29,287
Gardner Webb Col. (Jr.), Boiling Springs, N.C.	1905	Philip Levin Elliott	315	359	23	258,646	29,287
General Beadle St. Tch. Col., Madison, S.D.	1881	A. A. Lowry	143	143	21	—	25,500
Geneva College, Beaver Falls, Pa.	1848	Charles W. Lee	727	1,363	41	818,518	33,000
George Peabody Col. for Tch., Nashville, Tenn.	1785	Henry H. Hill	1,202	1,788	108	5,578,823	589,765
George Peabody Col. for Tch., Nashville, Tenn.	1937	Hugh M. Tiner	1,004	1,020	113	1,000,000	40,000
Georgetown College, Los Angeles, Calif.	1829	Samuel S. Hill	324	580	42	599,595	21,634
Georgetown College, Georgetown, Ky.	1829	Hunter Guthrie	1,075	4,830	797	6,000,000	210,268
Georgetown University, Washington, D.C.	1789						
Georgetown Visitation Jr. College, Wash., D.C.	1919						
Georgia College, Athens, Ga.	1821						
Georgia Institute of Tech., Atlanta, Ga.	1885						
Georgia Military Col. (Jr.), Milledgeville, Ga.	1879						
Georgian Court College, Lakewood, N.J.	1908						

Institution and Location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Volumes	Institution and Location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Volumes
Georgia Southwestern Col. (Jr.), Americus, Ga.	1926	Lloyd A. Moll	149	154	15	—	11,486	I Idaho, College of Caldwell, Ida.	1891	Paul M. Pitman	390	433	41	\$ 556,000	25,000
Georgia Tech. Col. for Women, Milledgeville, Ga.	1889	Guy H. Wells	551	687	59	—	53,855	Idaho, University of, Moscow, Ida.	1889	J. E. Buchanan	3,040	3,040	256	5,625,064	134,968
Georgia Teachers College, Collegeboro, Ga.	1908	Zach S. Henderson	494	613	54	—	43,423	Idaho State College, Pocatello, Ida.	1901	Carl W. McIntosh	1,452	1,488	130	32,545	32,545
Gettysburg College, Gettysburg, Pa.	1832	W. C. Langston	1,157	1,561	95	\$ 487,488	67,000	Idaho State College, Urbana, Ill.	1868	George D. Stoddard	18,036	22,044	3,652	3,178,930	2,476,954
Glendale College (Jr.), Glendale, Calif.	1927	Elmer T. Worley	882	1,521	72	—	17,000	Illinois College, Jacksonville, Ill.	1829	H. Gary Hudson	277	302	29	1,868,609	39,625
Glenville State College, Glenville, W. Va.	1872	Harry B. Hefflin	340	457	32	—	25,000	Illinois Institute of Technology, Chicago, Ill.	1892	John T. Reithalia	2,351	7,148	201	2,600,000	123,522
Gobleville State College, Ironwood, Mich.	1932	R. D. Chadwick	90	128	24	—	10,000	Illinois State Normal Univ., Normal, Ill.	1857	R. W. Fairchild	2,046	2,216	235	156,524	50,000
Golden Gate University, San Francisco, Calif.	1901	Nagel T. Miner	305	3,074	160	3,500,000	16,000	Illinois Wesleyan Univ., Bloomington, Ill.	1850	M. J. Holmes	730	774	63	1,457,770	29,000
Gonzaga University, Spokane, Wash.	1887	Francis E. Corkery	1,155	1,241	93	—	45,316	Immaculate Conception, Immaculate, Pa.	1920	V. L. Burns	306	306	48	12,867	12,867
Good Counsel College, White Plains, N.Y.	1923	W. L. Morgan	245	250	32	—	18,601	Inmaculate Conception, Wash. D.C.	1922	Sister Mary Genevieve	118	119	14	—	29,000
Gordon College, Goshen, Ind.	1852	Ernest E. Miller	475	475	17	280,000	4,420	Inmaculate Heart Col., Los Angeles, Calif.	1916	Sister M. Thecla	498	745	69	31,573	46,775
Goshen College, Goshen, Ind.	1884	Otto F. Kraushaar	537	680	50	2,092,421	39,300	Innate Word Col., San Antonio, Tex.	1881	Sister M. Columille	385	612	72	39,257	39,257
Goucher College, Baltimore, Md.	1865	Edmund J. Gleazer	605	621	74	66,679	90,302	Indiana State College, Indianapolis, Ind.	1902	Lynd Ech	358	361	29	118,054	20,642
Graceland College, Lamoni, Ia.	1895	R. W. E. Jones	543	556	31	—	21,000	Indiana State College, Terre Haute, Ind.	1870	Ralph N. Tiley	1,598	2,519	145	158,838	158,838
Graceland College of Louisiana, Grambling, La.	1902	Arthur Andrews	1,248	1,255	77	—	11,269	Indiana University, Bloomington, Ind.	1827	Herman B. Wells	11,752	17,578	1,961	3,719,980	850,000
Grand Rapids Jr. Col. Grand Rapids, Mich.	1914	Richard Kieseewetter	609	672	50	—	18,534	Indiana University of Iowa City, Ia.	1847	Virgil M. Hancher	7,362	7,362	957	1,446,262	745,981
Grand Rapids Jr. Col. Grand Rapids, Mich.	1914	Richard Kieseewetter	609	672	50	—	18,534	Iowa State College, Ames, Ia.	1858	Charles E. Friley	7,506	7,506	927	1,383,000	426,694
Grand Rapids Jr. Col. Grand Rapids, Mich.	1914	Richard Kieseewetter	609	672	50	—	18,534	Iowa State College, Cedar Falls, Ia.	1876	J. W. Mucker	2,346	2,346	304	153,335	153,335
Grand Rapids Jr. Col. Grand Rapids, Mich.	1914	Richard Kieseewetter	609	672	50	—	18,534	Iowa Wesleyan College, Mount Pleasant, Ia.	1842	Raymond Chadwick	301	398	29	520,659	31,000
Grand Rapids Jr. Col. Grand Rapids, Mich.	1914	Richard Kieseewetter	609	672	50	—	18,534	Iowa Wesleyan College, Mount Pleasant, Ia.	1842	Raymond Chadwick	301	398	29	520,659	31,000
Grand Rapids Jr. Col. Grand Rapids, Mich.	1914	Richard Kieseewetter	609	672	50	—	18,534	Iowa Wesleyan College, Mount Pleasant, Ia.	1842	Raymond Chadwick	301	398	29	520,659	31,000
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Institution and Location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Library Volumes	Institution and Location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Library Volumes
Montana State University, Missoula, Mont.	1893	Carl McFarland	2,346	2,390	221	\$ 899,847	349,362	New Mexico College of Agriculture and Mechanic Arts, State College, N.M.	1888	J. W. Branson	1,170	1,653	140	\$ 822,894	73,500
Monterey Peninsula College (Jr.), Monterey, Calif.	1947	Calvin C. Flint	535	737	27	—	7,000	New Mexico Highlands Univ., Las Vegas, N.M.	1893	T. C. Donnelly	517	689	67	—	40,232
Montgomery Jr. Col., Bethesda, Md.	1946	Hugh G. Price	271	444	26	—	5,000	New Mexico Institute of Mining and Technology, Socorro, N.M.	1889	E. J. Workman	142	156	26	—	15,621
Monticello College (Jr.), Godfrey, Ill.	1835	John R. Young	203	203	27	120,000	21,720	New Mexico Military Inst., Roswell, N.M.	1893	C. F. Ward	597	597	48	—	28,700
Montreal, University of, Montreal, Que., Can.	1876	Olivier Maurault	7,500	13,000	1,800	400,000	125,000	New Mexico Western Col., Silver City, N.M.	1893	J. C. Miller	719	822	70	—	30,000
Moorhead State Tch. Col., Moorhead, Minn.	1887	O. W. Snarr	506	550	59	—	32,000	New Rochelle, Col. of, New Rochelle, N.Y.	1904	Mother M. Dorothea	747	747	67	118,000	65,513
Moorhead State Tch. Sem., Bethlehem, Pa.	1807	Raymond S. Hauptert	318	319	29	952,000	46,298	New York State Col. for Tch., Albany, N.Y.	1844	Dunkerley	1,502	1,576	129	—	48,694
Morhead State Col., Morehead, Ky.	1923	Charles R. Spain	566	601	61	—	116,820	New York State Tch. Col., Brockport, N.Y.	1841	Evon R. Collins	1,002	1,019	92	—	31,215
Morhouse College, Atlanta, Ga.	1867	Benjamin E. Moys	473	473	44	2,000,000	50,000	New York State Tch. Col., Buffalo, N.Y.	1841	Donald M. Tower	2,033	4,145	151	—	39,736
Morgan State College, Baltimore, Md.	1867	Martin D. Jenkins	1,559	2,214	102	674,633	61,000	New York State Tch. Col., Cortland, N.Y.	1872	Harvey M. Rice	1,304	1,304	110	—	40,000
Morningside College, Sioux City, Ia.	1889	E. A. Roadman	657	644	60	475,333	10,089	New York State Tch. Col., Fredonia, N.Y.	1867	Donnal V. Smith	740	891	75	—	23,382
Morris Brown College, Atlanta, Ga.	1881	John H. Lewis	587	667	40	—	12,006	New York State Tch. Col., Geneseo, N.Y.	1867	Herbert G. Espy	638	848	80	—	30,344
Morris Brown College, Atlanta, Ga.	1881	John H. Lewis	587	667	40	—	12,006	New York State Tch. Col., Oswego, N.Y.	1886	Wm. J. Haggerty	840	846	89	—	23,063
Morton Junior College, Cicero, Ill.	1924	Wm. P. MacLean	373	525	19	82,928	17,000	New York State Tch. Col., Painesville, N.Y.	1886	Royal F. Neitzer	708	972	62	—	29,000
Mt. Allison Univ., Sackville, N.B., Can.	1840	W. T. R. Fleming	608	914	57	1,400,000	66,000	New York State Tch. Col., Plattsburg, N.Y.	1861	F. S. Brown	1,157	1,232	100	—	49,339
Mt. Aloysius Junior College, Cresson, Pa.	1939	Sister M. Anne McCue	80	90	18	55,000	8,000	New York State Tch. Col., Potsdam, N.Y.	1886	F. E. Reddick	830	984	75	—	27,657
Mt. Angel Seminary, Mt. Angel, Ore.	1889	Dominic Jentes	102	102	26	—	41,890	New York State Normal and Industrial College, Elendole, N.D.	1889	Frederick W. Crumb	708	713	93	—	28,031
Mt. Holyoke College, S. Hadley, Mass.	1863	Roswell G. Ham	1,221	1,262	133	7,733,000	223,500	North Carolina, N.C., of, Chapel Hill, N.C.	1861	Henry Townley Heald	16,858	45,186	4,037	18,455,909	927,577
Mt. Mary College, Milwaukee, Wis.	1872	Edward A. Fitzpatrick	606	886	95	59,756	41,628	North Carolina, N.C., of, Durham, N.C.	1889	Francis L. Meade	1,213	1,398	117	—	65,000
Mt. Mercy College, Pittsburgh, Pa.	1933	Sister M. Muriel	259	566	42	—	30,632	North Carolina, N.C., of, Raleigh, N.C.	1887	Dr. Brooks	483	893	41	—	8,200
Mt. Mercy Jr. College, Cedar Rapids, Ia.	1928	Sister Mary	132	145	18	—	12,638	North Carolina, N.C., of, Raleigh, N.C.	1887	F. D. Bluford	2,451	2,568	160	—	41,486
Mt. St. Agnes Col., Baltimore, Md.	1867	Sister M. Regis	124	156	26	—	23,000	North Carolina, N.C., of, Raleigh, N.C.	1889	Gordon Gray	5,773	5,841	404	4,119,061	581,682
Mt. St. Clare College (Jr.), Clinton, Iowa	1918	Mother M. Gladis Cleary	84	120	16	—	11,500	North Carolina, N.C., of, Raleigh, N.C.	1889	Edward K. Graham	2,319	2,392	196	155,275	143,173
Mt. St. Joseph-on-the-Ohio, Col. of, Mt. St. Joseph, Ohio	1854	Sister M. Corona	411	434	54	895,000	30,000	North Carolina, N.C., of, Raleigh, N.C.	1910	A. Elder	—	1,368	110	—	44,650
Moody Joseph Teachers Col., Buffalo, N.Y.	1937	Sister M. Hubert	50	392	30	—	28,000	North Carolina, N.C., of, Raleigh, N.C.	1887	J. W. Harrelson	3,374	3,704	531	468,125	115,320
Mt. St. Mary's College, Emmitsburg, Md.	1934	Sister M. Maurita	247	247	23	—	16,168	North Carolina, N.C., of, Raleigh, N.C.	1887	C. Horve Geiger	570	603	43	1,426,626	40,196
Mt. St. Mary's College, Los Angeles, Calif.	1925	John L. Sheridan	470	470	34	350,000	31,000	North Carolina, N.C., of, Raleigh, N.C.	1887	John C. West	2,051	2,162	181	—	175,000
Mt. St. Mary's College, Los Angeles, Calif.	1925	Sister Agnes Marie	355	469	54	—	31,000	North Carolina, N.C., of, Raleigh, N.C.	1889	Fred Samuel Hultz	1,672	1,713	144	1,925,248	97,427
Mt. St. Vincent College, Athens, Kan.	1863	Mother Alfred Schroll	324	360	38	—	21,184	North Carolina, N.C., of, Raleigh, N.C.	1889	J. C. McMillan	101	312	20	—	22,493
Mt. St. Vincent College, New York, N.Y.	1910	F. Cardinal Spellman	447	585	54	252,210	25,000	North Carolina, N.C., of, Raleigh, N.C.	1889	Charles E. Scott	205	205	26	—	21,566
Mount Saint Vincent College, Halifax, N.S., Can.	1873	Sister Maria Rosaria	198	263	22	—	13,716	North Carolina, N.C., of, Raleigh, N.C.	1889	C. P. Lura	183	183	26	346,000	40,000
Mt. Union College, Allentown, Ohio	1846	George H. Bell	848	1,361	77	1,400,000	85,000	North Carolina, N.C., of, Raleigh, N.C.	1889	C. C. Swain	619	651	68	—	40,000
Mt. Union College, Allentown, Ohio	1846	Charles B. Ketcham	653	826	42	1,450,078	85,000	North Carolina, N.C., of, Raleigh, N.C.	1889	R. L. Loken	297	322	43	690,000	40,000
Multnomah College, Portland, Ore.	1897	M. S. Greth	609	614	45	25,000	9,000	North Carolina, N.C., of, Raleigh, N.C.	1889	Bruce G. Carter	370	543	40	—	9,000
Mundelein College, Chicago, Ill.	1929	Edward L. Clark	419	1,166	107	—	33,700	North Carolina, N.C., of, Raleigh, N.C.	1889	Harrell E. Garrison	879	998	62	—	50,000
Murray State College, Murray, Ky.	1922	Michael Dee	712	722	66	—	45,278	North Carolina, N.C., of, Raleigh, N.C.	1889	Carl S. Ell	4,310	12,486	496	5,350,385	48,966
Muskegon Community College (Jr.), Muskegon, Mich.	1926	Ralph H. Woods	1,139	1,363	92	—	180,000	North Carolina, N.C., of, Raleigh, N.C.	1889	Lewis C. Slater	595	697	46	—	12,200
Muskegon College, New Concord, Ohio	1837	A. G. Umbreit	262	280	21	999,894	36,000	North Carolina, N.C., of, Raleigh, N.C.	1889	Walter H. Ryle	1,426	1,426	81	—	110,000
N		R. N. Montgomery	730	750	65	—	8,000	North Carolina, N.C., of, Raleigh, N.C.	1889	Charles W. Koller	273	341	22	72,226	45,733
Napa College (Jr.), Napa, Calif.	1942	H. M. McPherson	775	804	56	—	36,401	North Carolina, N.C., of, Raleigh, N.C.	1889	Leslie A. Holmes	1,776	2,084	126	—	78,867
National College of Educ., Evanston, Ill.	1886	K. Richard Johnson	319	376	45	140,000	30,500	North Carolina, N.C., of, Raleigh, N.C.	1889	H. A. Tape	580	618	67	—	46,345
Nazareth College, Louisville, Ky.	1920	Sister Margaret Murphy	353	317	45	15,000	38,510	North Carolina, N.C., of, Raleigh, N.C.	1889	L. O. Brockmann	250	275	25	—	26,000
Nazareth College, Rochester, N.Y.	1897	Sister Mary Kevin	196	261	30	10,000	25,963	North Carolina, N.C., of, Raleigh, N.C.	1889	George P. Hucksby	172	220	29	—	10,000
Nazareth College, Rochester, N.Y.	1924	Mother M. Helene	452	452	64	—	500,000	North Carolina, N.C., of, Raleigh, N.C.	1901	Warren Lovgren	550	607	50	10,000	32,000
Norfolk State Tch. Col., Norfolk, Va.	1869	Reuben G. Gustavson	6,110	6,952	534	1,202,414	30,387	North Carolina, N.C., of, Raleigh, N.C.	1901	Loyd J. Hullgren	66	72	15	—	2,198
Norfolk State Tch. Col., Norfolk, Va.	1911	Wiley G. Brooks	301	321	51	—	40,501	North Carolina, N.C., of, Raleigh, N.C.	1901	Merritt E. Hoag	574	574	36	—	22,501
Norfolk State Tch. Col., Norfolk, Va.	1911	Herbert L. Cushing	565	579	55	—	40,398	North Carolina, N.C., of, Raleigh, N.C.	1901	George O. Kildow	136	241	18	—	12,000
Norfolk State Tch. Col., Norfolk, Va.	1911	Neal S. Goman	281	399	47	—	40,398	North Carolina, N.C., of, Raleigh, N.C.	1901	Clarence A. Nelson	612	961	57	327,733	22,943
Norfolk State Tch. Col., Norfolk, Va.	1911	John D. Rice	604	616	56	987,976	93,188	North Carolina, N.C., of, Raleigh, N.C.	1901	J. C. Matthews	3,938	4,299	307	—	218,000
Norfolk State Tch. Col., Norfolk, Va.	1911	John D. Rice	604	616	56	987,976	93,188	North Carolina, N.C., of, Raleigh, N.C.	1901	Sabin C. Percell	511	—	43	—	31,876
Norfolk State Tch. Col., Norfolk, Va.	1911	John D. Rice	604	616	56	987,976	93,188	North Carolina, N.C., of, Raleigh, N.C.	1901	H. Lee Prather	1,296	1,363	110	—	57,977
Norfolk State Tch. Col., Norfolk, Va.	1911	John D. Rice	604	616	56	987,976	93,188	North Carolina, N.C., of, Raleigh, N.C.	1901	R. L. Loken	297	322	43	—	40,000
Norfolk State Tch. Col., Norfolk, Va.	1911	John D. Rice	604	616	56	987,976	93,188	North Carolina, N.C., of, Raleigh, N.C.	1901	H. Lee Prather	1,296	1,363	110	—	57,977
Norfolk State Tch. Col., Norfolk, Va.	1911	John D. Rice	604	616	56	987,976	93,188	North Carolina, N.C., of, Raleigh, N.C.	1901	R. L. Loken	297	322	43	—	40,000
Norfolk State Tch. Col., Norfolk, Va.	1911	John D. Rice	604	616	56	987,976	93,188	North Carolina, N.C., of, Raleigh, N.C.	1901	H. Lee Prather	1,296	1,363	110	—	57,977
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Norfolk State Tch. Col., Norfolk, Va.	1911	John D. Rice	604	616	56	987,976	93,188	North Carolina, N.C., of, Raleigh, N.C.	1901	H. Lee Prather	1,296	1,363	110	—	57,977
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Norfolk State Tch. Col., Norfolk, Va.	1911	John D. Rice	604	616	56	987,976	93,188	North Carolina, N.C., of, Raleigh, N.C.	1901	H. Lee Prather	1,296	1,363	110	—	57,977
Norfolk State Tch. Col., Norfolk, Va.	1911	John D. Rice	604	616	56	987,976	93,188	North Carolina, N.C., of, Raleigh, N.C.	1901	R. L. Loken	297	322	43	—	40,000
Norfolk State Tch. Col., Norfolk, Va.	1911	John D. Rice	604	616	56	987,976	93,188	North Carolina, N.C., of, Raleigh, N.C.	1901	H. Lee Prather	1,296	1,363	110	—	57,977
Norfolk State Tch. Col., Norfolk, Va.	1911	John D. Rice	604	616	56	987,976	93,188	North Carolina, N.C., of, Raleigh, N.C.	1901	R. L. Loken	297	322	43	—	40,000
Norfolk State Tch. Col., Norfolk, Va.	1911	John D. Rice	604	616	56	987,976	93,188	North Carolina, N.C., of, Raleigh, N.C.	1901	H.					

Institution and Location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Volumes	Institution and Location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Volumes
Oakwood College, Huntsville, Ala.	1896	F. L. Peterson	175	284	22	—	10,013	Plymouth Teachers College, Plymouth, N.H.	1870	Harold E. Hyde	266	274	39	—	16,000
Oberlin College, Oberlin, Ohio	1833	William E. Stevenson	1,962	2,051	183	\$24,088,000	490,085	Pomona College, Claremont, Calif.	1887	E. Wilson Lyon	1,025	1,054	92	\$5,770,000	123,856
Occidental College, Los Angeles, Calif.	1887	Arthur G. Coons	1,205	1,312	120	1,657,068	100,205	Port Huron Junior College, Port Huron, Mich.	1923	B. E. Thomson	226	250	21	—	7,200
Oceanside College, Oceanside, Calif.	1934	Frank M. Chase	174	372	44	—	7,291	Portland State School of Portland, Ore.	1901	Michael J. Gavin	1,213	1,275	107	—	55,623
Ohio State University, Columbus, Ohio	1870	Howard L. Bevis	16,583	18,618	1,579	3,067,978	891,812	Potomac State School of West Virginia University, Keyser, W. Va.	1902	E. E. Church	310	347	30	—	11,000
Ohio Wesleyan University, Delaware, Ohio	1804	John Calhoun Baker	4,031	4,867	342	124,322	209,674	Prairie View Agricultural and Mechanical College, Prairie View, Tex.	1876	E. B. Evans	2,428	2,452	134	—	40,057
Oklahoma University of Norman, Okla.	1892	Arthur S. Fleming	1,978	2,011	144	5,561,613	192,746	Pratt Institute, Brooklyn, N.Y.	1887	Charles Pratt	1,511	3,590	294	9,200,000	148,000
Oklahoma A. and M. College, Stillwater, Okla.	1890	George Lynn Cross	7,612	7,962	610	4,125,094	337,555	Presbyterian College, Clinton, S.C.	1880	Harold W. Dadds	414	414	32	581,690	40,000
Oklahoma City University, Oklahoma City, Okla.	1904	C. S. Williams	8,832	11,343	616	5,313,572	275,000	Princeton University, Princeton, N.J.	1746	Frederic E. Morgan	3,337	3,537	414	51,723,000	1,500,000
Oklahoma State University, Stillwater, Okla.	1908	C. Q. Smith	790	2,227	73	956,800	46,446	Principia College, Elmhurst, Ill.	1898	Robert J. Slavin	431	438	39	963,631	44,500
Oklahoma State University, Oklahoma City, Okla.	1908	Don Procter	500	663	52	—	40,000	Providence College, Providence, R.I.	1917	Marvin C. Knudson	1,436	1,969	110	57,000	30,000
Oklahoma State University, Oklahoma City, Okla.	1919	Harold M. Ledbetter	281	281	16	—	8,334	Pueblo Junior College, Pueblo, Colo.	1933	James Benitez	408	426	76	367,100	16,672
Olympic College, Bremerton, Wash.	1946	L. J. Elias	353	1,017	30	—	4,863	Puerto Rico, Univ. of San German, P.R.	1912	Edmund C. Seel	6,516	10,890	620	2,074,966	186,225
Omaha University of Omaha, Neb.	1908	Philip Milo Bail	1,368	2,942	116	122,701	91,448	Puerto Rico, Univ. of San German, P.R.	1903	Jaime Benitez	1,047	1,336	98	1,563,150	62,793
Ontario Agricultural College, Guelph, Ont., Can.	1874	J. D. MacLachlan	634	2,408	144	—	50,000	Puget Sound, College of Tacoma, Wash.	1888	R. Franklin Thompson	10,919	11,053	1,502	340,000	286,244
Orange Coast College, Costa Mesa, Calif.	1947	Basel H. Peterson	667	2,250	90	—	8,300	Queens College, Charlotte, N.C.	1857	Charlton C. Jernigan	285	301	42	611,275	26,582
Oregon College of Education, Monmouth, Ore.	1876	Harry K. Newburn	536	5,363	453	1,700,000	553,382	Queens College, Flushing, N.Y.	1937	John J. Theobald	3,354	5,011	268	11,043	83,410
Oregon State College, Corvallis, Ore.	1858	Robert J. MacIsaac	465	479	29	352,472	262,000	Queen's University, Kingston, Ontario, Can.	1841	W. A. Mackintosh	2,112	6,027	203	7,452,000	224,159
Oregon State University, Corvallis, Ore.	1888	A. L. Strand	4,906	5,002	425	125,000	150,000	Radcliffe College, Cambridge, Mass.	1879	Wilbur K. Jordan	1,340	1,340	2,700	8,165,000	104,000
Ottawa University of Ottawa, Ont., Can.	1848	J. C. Laframboise	1,476	3,580	373	468,245	26,924	Radcliffe College, Woman's Division of Virginia Polytechnic Institute, Radford, Va.	1910	C. K. Martin, Jr.	857	881	56	—	33,000
Ottawa University, Ottawa, Ont., Can.	1865	A. B. Martin	370	379	25	1,318,265	45,000	Randolph-Macon College, Ashland, Va.	1830	J. Earl Moreland	356	357	30	1,096,825	44,000
Ottumwa College, Ottumwa, Iowa	1847	J. Gordon Howard	623	677	56	—	13,000	Redlands, University of Redlands, Calif.	1893	W. F. Quillian, Jr.	592	592	77	1,354,000	74,000
Ottumwa Heights College, Ottumwa, Iowa	1925	Sister Marie Ancille	106	106	18	—	18,989	Reed College, Portland, Ore.	1904	George H. Armistead	1,018	1,130	85	2,345,602	86,166
Our Lady of the Lake College, San Antonio, Tex.	1928	C. J. Weldon	257	257	25	550,042	325,000	Reedley College (Jr.), Reedley, Calif.	1926	D. S. Ballantine	580	620	59	1,617,283	74,800
Ozarks College of the Clarksville, Ark.	1896	John L. McMahon	255	435	68	—	28,000	Regis College, Weston, Mass.	1926	Lois Wilson	403	418	40	—	20,000
	1891	J. P. Vincent	200	215	26	—	—	Rensselaer Polytechnic Institute, Troy, N.Y.	1824	Sister Mary Alice	583	584	70	190,100	38,000
								Rhode Island College of Education, Providence, R.I.	1882	Livington W. Houston	2,255	3,978	367	14,380,398	50,488
								Rhode Island College of Education, Providence, R.I.	1854	Carl K. Woodward	1,959	1,987	205	—	11,345
								Rhode Island School of Design, Providence, R.I.	1854	Fred J. Donovan	450	559	64	—	25,213
								Rice Institute, Houston, Tex.	1877	Max W. Sullivan	626	671	78	—	20,993
								Rickard College, Richmond, Va.	1912	William V. Houston	1,507	1,507	130	30,000,000	200,000
								Rickard College, Houston, Me.	1832	George M. Madlin	1,307	2,357	135	3,240,220	125,000
								Ricks College, Rexburg, Ida.	1848	Jasper F. Crouse	138	138	18	—	9,000
								Ripon College, Ripon, Wis.	1888	John L. Clarke	429	451	35	—	15,800
								Riverside College (Jr.), Riverside, Calif.	1850	Clark G. Kuebler	551	554	44	1,062,856	52,261
								River College, Nashua, N.H.	1916	Orland W. Noble	546	598	40	—	18,617
								Roosevelt College, Salem, Va.	1933	M. St. Pascal	136	209	28	—	21,200
								Rochester College, Rochester, N.Y.	1850	H. Sherman Oberly	340	364	25	737,617	30,718
								Rochester College, Rochester, N.Y.	1850	Cornelius Willem de Kiewit	3,137	6,084	842	59,616,000	531,119
								Rochester College, Kansas City, Mo.	1847	Mary Ashby Cheek	218	509	43	1,072,000	40,210
								Rockhurst College, Kansas City, Mo.	1910	Maurice E. Van Ackeren	391	956	57	—	24,376
								Rocky Mountain College, Billings, Mont.	1883	Herbert W. Hines	143	9	19	500,000	28,150
								Rolls College, Winter Park, Fla.	1885	H. F. McKean	630	636	74	1,303,700	80,000
								Rosary College, Chicago, Ill.	1945	Edward J. Spaulding	2,355	4,237	231	—	40,000
								Rosemont College, River Forest, Ill.	1848	Sister Mary Timothea	633	683	78	183,484	65,190
								Rosemont College, Rosemont, Pa.	1921	Mother Mary Chrysostom	334	370	45	—	41,000
								Rose Polytechnic Institute, Terre Haute, Ind.	1874	Ford L. Wilkinson, Jr.	287	292	36	2,300,000	29,000
								Royal Military College of Canada, Kingston, Ont., Can.	1876	D. R. Agnew	350	350	50	—	29,000
								Russell Sage College, Troy, N.Y.	1916	Lewis A. Froman	530	541	60	1,027,128	56,676
								Rust College, Holly Springs, Miss.	1866	L. M. McCoy	271	871	32	33,840	17,970
								Rutgers University (incl. N.J. College for Women), New Brunswick and Newark, N.J.	1766	Lewis Webster Jones	6,500	21,000	750	6,754,000	61,600
								Sacramento Jr. Col., Sacramento, Calif.	1916	J. Paul Mohr	1,924	7,106	86	—	35,000
								Sacramento State College, Sacramento, Calif.	1947	Guy H. West	916	2,011	100	—	25,000
								Sacred Heart, College of the Santures, P.R.	1880	Mother Consuelo Herrera	119	120	24	113,300	22,442
								St. Ambrose College, Davenport, Ia.	1882	Amrose J. Burke	708	1,062	59	600,000	35,000
								St. Anselm's College, Manchester, N.H.	1889	Bertrand C. Dolan	514	614	43	—	40,000
								St. Augustine's College, Raleigh, N.C.	1867	Harold L. Trigg	378	379	32	208,000	19,716
								St. Bede Junior College, Peru, Ill.	1891	Lawrence Vohs	58	74	20	—	27,000

Institution and Location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Library Volumes
St. Benedict's College of St. Joseph, Minn.	1913	Mother R. Peters	218	250	39	—	22,031
St. Bernard College, Atchison, Kan.	1859	Cuthbert McDonald	428	430	36	\$4,200,000	110,000
St. Bernard College (Jr.), St. Bernard, Ala.	1892	Benjamin Seng	81	81	16	—	26,956
St. Bonaventure Univ., St. Bonaventure, N.Y.	1859	Juneface Lalor	1,384	1,552	111	121,600	120,000
St. Charles College (Jr.), Catonsville, Md.	1831	Sister Antonia	776	805	87	653,000	64,000
St. Cloud St. Ch. Col., St. Cloud, Minn.	1869	George A. Gleason	169	169	14	40,000	40,000
St. Dunstan's Col., Charlottetown, P.E.I., Can.	1831	George F. Budd	1,216	1,249	118	70,000	70,000
St. Edward's Seminary, Kenmore, Wash.	1931	R. V. MacKenzie	317	319	20	12,000	12,000
St. Elizabeth's Col. of Convent Station, N.J.	1893	J. R. Sullivan	128	128	15	19,000	19,000
St. Francis College of Joliet, Ill.	1874	Sister H. M. Mahoney	542	546	49	34,400	34,400
St. Francis College, Loretto, Pa.	1847	Sister M. Aniceto	263	263	49	16,000	38,000
St. Francis Xavier Univ. for Women, Chicago, Ill.	1912	Adrian J. M. Veagle	382	382	29	1,300,000	20,000
St. Francis Xavier Univ., Antigonish, N.S., Can.	1853	Sister Mary Huberta	266	266	44	57,600	52,600
St. John's College of Cleveland, Cleveland, Ohio	1853	P. J. Nicholson	864	864	48	600,000	52,000
St. John's College, Camarillo and Los Angeles, Calif.	1928	Robert B. Navin	386	839	35	—	29,800
St. John's College, Annapolis, Md.	1926	F. B. Koepfer	102	102	13	40,000	40,000
St. John's University, Collegeville, Minn.	1859	Richard D. Weigle	150	150	17	300,000	45,000
St. John's University, Brooklyn, N.Y.	1870	John A. Flynn	3,335	6,755	293	526,629	100,924
St. Joseph College, W. Hartford, Conn.	1857	Baldwin Dworachak	866	866	70	236,606	85,565
St. Joseph College, Embury, Md.	1809	Mother M. Ethelreda	366	651	53	—	24,225
St. Joseph Junior College, St. Joseph, Mo.	1915	Sister M. Mary	197	199	27	19,261	19,261
St. Joseph's College, Philadelphia, Pa.	1889	Nelle Blum	290	298	22	9,000	9,000
St. Joseph's College, Philadelphia, Pa.	1851	Raphael H. Gross	527	650	49	177,870	51,443
St. Joseph's Col. for Women, Brooklyn, N.Y.	1916	Edward G. Jacklin	1,011	1,747	69	28,644	28,644
St. Joseph's University, St. Joseph, Mo.	1864	William T. Dillon	330	330	47	34,458	34,458
St. Lawrence University, Canton, N.Y.	1864	Clement Cornier	482	482	55	47,800	20,000
St. Lawrence University, St. Louis, Mo.	1818	Eugene G. Bewkes	1,416	1,627	93	2,000,000	98,000
St. Mary's College, Olympia, Wash.	1893	Paul C. Reinert	5,879	8,521	1,266	4,685,168	459,526
St. Mary's College, Xavier, Kan.	1860	Raphael Raider	192	197	35	—	25,000
St. Mary of the Springs, Col. of Columbus, Ohio	1868	Arthur M. Murphy	244	372	40	—	43,000
St. Mary-of-the-Wasatch, Col. of Salt Lake City, Utah	1926	Sister M. Angelita	181	191	41	—	30,000
St. Mary-of-the-Woods Col., St. Mary-of-the-Woods, Ind.	1840	Sister Maria Consolata	85	154	21	—	13,112
St. Mary's Col., Notre Dame, Ind.	1845	Mother Marie Helene	328	328	51	493,252	82,286
St. Mary's College, Winona, Minn.	1845	Sister M. Madeleine	521	693	66	210,000	43,792
St. Mary's Dominican Col., New Orleans, La.	1912	Brother W. Thomas	436	436	32	165,021	35,680
St. Mary's Junior College, O'Fallon, Mo.	1929	Brother J. Ambrose	542	542	41	30,000	30,000
St. Mary's School and Jr. Col., Raleigh, N.C.	1842	Sister Mary Louise	149	192	24	175,000	14,950
St. Mary's Seminary, Baltimore, Md.	1791	Mother M. Borgia	34	36	7	209,764	12,000
St. Michael's College, Winooski Park, Vt.	1852	Richard G. Stone	276	294	28	300,000	53,000
St. Norbert College, West De Pere, Wis.	1878	Lloyd F. McDonald	629	902	93	80,000	35,000
St. Patrick's Seminary, Menlo Park, Calif.	1898	A. M. Killen	767	767	45	1,102,393	95,000
St. Patrick's Seminary, St. Paul, Minn.	1895	Daniel P. Lyons	550	673	58	—	42,000
St. Peter's Jr. Col., St. Peterburg, Fla.	1927	Thomas C. Mulligan	213	213	18	—	40,000
St. Peter's College, Jersey City, N.J.	1872	Clemens M. Granskou	713	713	15	—	42,000
St. Rose, College of Albany, N.Y.	1920	R. G. Bonds	360	360	15	—	12,183
St. Scholastica College of Duluth, Minn.	1867	M. M. Bennett	275	447	26	—	30,000
St. Teresa, Col. of Kansas City, Mo.	1867	James J. Shanahan	1,446	1,575	92	136,139	31,800
St. Teresa, College of Winona, Minn.	1885	Mother A. Braegelman	378	720	72	—	24,000
St. Vincent College, Latrobe, Pa.	1885	Mother Mary Berenice O'Neill	146	304	43	—	24,000
Salem College, Winston-Salem, N.C.	1876	St. M. Rachael Dady	552	604	59	500,000	40,000
San Antonio State Ch. Col., Huntsville, Tex.	1872	Vincent J. Flynn	1,439	1,469	102	335,809	48,624
San Benito County Jr. Col., Hollister, Calif.	1919	Denis Strittmatter	710	710	53	2,000,000	65,000
San Bernardino Valley College (Jr.), San Bernardino, Calif.	1919	Dale H. Gramley	258	281	33	943,890	38,538
San Diego Junior College, San Diego, Calif.	1914	Harmon Lowman	1,431	1,639	112	—	71,009
San Diego State College, San Diego, Calif.	1897	Bryan Whitfield	40	66	40	—	15,000
San Francisco City College of (Jr.), San Francisco, Calif.	1935	Arian S. Cakelbreed	44	44	35	—	1,250
San Francisco Univ. of St. Francis, Calif.	1855	John L. Lounsbury	1,100	1,124	67	—	29,079
San Francisco State Col., San Francisco, Calif.	1921	John Aseltine	656	1,627	171	—	12,000
San Jose St. Col. and San Jose Jr. Col., San Jose, Calif.	1857	M. A. Love	3,600	4,500	212	—	137,500
San Jose State Col., San Jose, Calif.	1857	Louis G. Conlan	3,358	5,049	239	—	40,000
San Jose State Col., San Jose, Calif.	1857	William J. Dume	1,432	2,826	139	—	80,000
San Jose State Col., San Jose, Calif.	1857	Mother Leonor Mejia	415	457	50	—	100,000
San Jose State Col., San Jose, Calif.	1857	J. Paul Leimar	3,969	5,560	287	—	80,553
San Jose State Col., San Jose, Calif.	1857	J. T. Wahlquist	6,718	7,363	342	—	130,000
San Luis Obispo Junior College, San Luis Obispo, Calif.	1936	Lawrence Griffin	160	200	12	—	5,890
San Mateo Junior Col., San Mateo, Calif.	1922	Charles S. Morris	1,023	1,285	77	—	18,000
San Rafael, Dominican Col. of, San Rafael, Calif.	1915	Sister Mary Patrick	279	286	46	—	36,828
Santa Ana College (Jr.), Santa Ana, Calif.	1915	Daniel C. McNaughton	493	559	39	—	18,322
Santa Barbara Jr. Col., Santa Barbara, Calif.	1946	W. J. Kircher	148	677	35	—	325
Santa Clara Univ. of Santa Clara, Calif.	1851	Herman J. Hauck	1,084	1,271	91	\$1,950,000	67,500
Santa Maria Jr. Col., Santa Maria, Calif.	1920	Harry Edward Tyler	132	798	28	—	6,500
Santa Monica City Col. (Jr.), Santa Monica, Calif.	1929	Elmer C. Sandmeyer	—	1,275	59	—	12,000
Santa Rosa Junior Col., Santa Rosa, Calif.	1918	Floyd P. Bailey	824	1,202	60	—	15,300
Sarah Lawrence College, Bronxville, N.Y.	1926	Harold Taylor	361	362	68	295,422	56,000
Saskatchewan Univ. of, Saskatoon, Sask., Can.	1907	W. P. Thompson	2,170	3,718	200	290,838	116,000
Savannah State College, Savannah, Ga.	1890	W. K. Payne	682	900	71	—	17,000
Scherritt College, Nashville, Tenn.	1892	Hugh C. Sluntz	139	188	17	625,513	8,000
Schreiner Institute (Jr.), Kerrville, Tex.	1923	Andrew Edington	230	245	25	250,000	11,250
Scripps College, Claremont, Calif.	1888	J. Eugene Gallery	867	2,247	111	2,500,000	32,683
Seattle Pacific College, Seattle, Wash.	1926	Frederick Hard	222	222	31	1,647,468	38,571
Seattle University, Seattle, Wash.	1891	C. Hoyt Watson	658	703	50	264,000	28,500
Sequoias, College of the (Jr.), Visalia, Calif.	1892	Albert A. Lemieux	1,918	2,427	125	—	39,950
Seton Hall University, South Orange, N.J.	1856	Ivan C. Crookshanks	572	674	49	—	10,000
Seton Hill College, Greensburg, Pa.	1883	John L. McNulty	388	561	300	—	34,100
Shasta College (Jr.), Redding, Calif.	1950	William Granger Ryan	340	616	26	—	2,500
Show University, Raleigh, N.C.	1865	G. A. Collier	537	549	47	385,000	17,000
Shenandoah College (Jr.), Dayton, Va.	1875	W. R. Strasser	108	116	15	57,000	5,000
Shepherd College, Shepherdstown, W. Va.	1852	L. P. Hill	380	590	31	199,463	22,000
Shorler College, Rome, Ga.	1853	Oliver S. Ikenberry	172	238	27	580,100	27,550
Siena College, Loudonville, N.Y.	1873	A. J. Brumbaugh	975	1,317	101	—	34,986
Siena Heights College, Adrian, Mich.	1919	Charles W. Burts	301	408	33	3,747,129	30,058
Simmons College, Boston, Mass.	1860	B. J. Campbell	430	440	36	1,555,000	38,845
Simon Fraser Univ., Vancouver, B.C., Can.	1882	Mother Mary Gerald	651	3,141	196	—	23,284
Skagit Valley Jr. Col., Mount Vernon, Wash.	1911	Edwin E. Voigt	66	176	10	—	4,411
Skidmore College, Saratoga Springs, N.Y.	1871	LeRoy V. Good	939	939	99	1,116,015	67,417
Smith College, Northampton, Mass.	1875	Henry T. Moore	2,207	2,290	230	10,367,736	374,640
Smith College, Northampton, Mass.	1875	Benjamin F. Wright	383	383	20	210,000	3,872
South College (Jr.), Boz., Ark.	1888	Festus M. Cook	228	231	22	—	12,500
South Carolina Univ. of the Sea, Charleston, S.C.	1858	James A. Nuttall	512	512	49	—	68,500
South Carolina State Agr. and Mech. Col., Orangeburg, S.C.	1801	Edward McCrady	2,845	3,418	228	—	250,000
South Dakota School of Mines and Technology, Rapid City, S.D.	1886	Donald Russell	1,202	1,775	141	—	47,243
South Dakota State College of Agr. and Mech., Brookings, S.D.	1882	I. D. Weeks	1,300	1,350	135	—	135,000
Southwestern State College, Durant, Okla.	1885	Warren E. Wilson	445	495	54	100,000	21,000
Southwestern State College, Weatherford, Okla.	1883	J. W. Headley	1,479	1,491	254	832,303	95,000
Southwestern State College, Winfield, Kan.	1895	C. L. Barrow	865	914	96	—	41,950
Southwestern Univ., Los Angeles, Calif.	1887	T. T. Montgomery	870	1,060	68	—	41,389
Southern Calif. Univ. of Los Angeles, Calif.	1879	W. W. Parker	1,026	1,026	78	—	90,000
Southern Christian Univ. (Jr.), Edgewood, Miss.	1879	Fred D. Fagg, Jr.	9,096	19,143	1,029	2,277,753	600,000
Southern Illinois University, Carbondale, Ill.	1869	John Long	1,777	1,777	17	—	6,223
Southern Methodist Univ., University Park, Tex.	1911	Delyte W. Morris	2,329	4,663	265	7,292,000	130,000
Southern Missionary Col., Collegeville, Tenn.	1893	Umphrey Lee	432	432	328	—	304,895
Southern Oregon Col. of Educ., Ashland, Ore.	1926	Kenneth A. Wright	487	527	45	—	17,759
Southern State College, Macalester, Ark.	1909	Elmo N. Stevenson	600	625	45	—	20,000
Southern St. Ch. Col., Springfield, S.D.	1881	Dolph Camp	664	721	50	—	15,013
Southern Univ. of Agr. and Mech., College, Scotlandville, La.	1880	J. Howard Kramer	142	595	23	13,846	45,000
Southwestern College (Jr.), Douglas, Ga.	1906	Fellon G. Clark	2,214	2,799	128	—	9,370
Southwestern College, Memphis, Tenn.	1848	William S. Smith	250	250	17	2,638,151	69,000
Southwestern College, Winfield, Kan.	1885	Payton N. Rhodes	440	474	69	—	28,500
Southwestern College, Winfield, Kan.	1885	Alvin N. Murray	335	366	41	606,000	95,000
Southwestern College, Winfield, Kan.	1885	Joel L. Fletcher	223	236	194	—	38,374
Southwestern State Col., Weatherford, Okla.	1901	R. H. Burton	609	832	57	—	54,000
Southwestern Univ., Washington, D.C.	1840	William C. Finch	403	414	41	1,296,976	70,000
Southwestern Univ., Washington, D.C.	1840	John Ellis	1,637	1,682	100	—	73,932
Southwestern Univ., Washington, D.C.	1840	John G. Flowers	1,472	1,805	73	—	105,052
Spelman College, Atlanta, Ga.	1881	Florence M. Read	3,373	3,737	40	3,327,563	105,052
Springfield College, Springfield, Mass.	1885	T. W. Merriman	1,117	1,514	77	1,100,000	12,747
Springfield Junior Col., Springfield, Ill.	1929	Mother M. Celeste	194	370	23	—	—

Institution and Location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Volumes
Spring Hill College, Spring Hill, Ala.	1830	A. C. Smith	643	830	48	\$ 506,980	63,626
Stanford University, Stanford, Calif.	1885	J. E. Wallace Sterling	6,767	7,583	850	39,661,473	1,750,000
Stephen F. Austin State Col., Nacogdoches, Tex.	1917	Paul L. Boynton	1,176	1,351	76	—	38,494
Stevens College (Jr.), Columbia, Mo.	1833	Hugh Stephens	1,828	1,831	185	250,000	30,000
Stevens Institute of Tech., Hoboken, N.J.	1870	Jess Harrison Davis	783	1,816	118	3,000,000	42,000
Stillman College, Tuscaloosa, Ala.	1876	Samuel B. Hay	282	285	22	125,000	21,203
Stockton College (Jr.), Stockton, Calif.	1935	Leon P. Miner	2,841	2,949	194	—	23,000
Stout Institute, Menominee, Wis.	1903	Verne C. Frylund	706	705	61	31,000	256,117
Stowe Teachers Col., St. Louis, Mo.	1890	Ruth M. Harris	115	117	14	—	152,514
Sue Bennett College (Jr.), London, Ky.	1896	Oscar Sanders	118	117	34	500,000	27,816
Sullins College (Jr.), Bristol, Va.	1920	W. E. Martin	315	350	34	—	8,529
Sun Ross State Col., Ala., Tex.	1911	Bryan Wildenthal	576	644	50	—	81,500
Sunflower Junior College, Moorhead, Miss.	1911	W. B. Horton	429	235	25	—	436,905
Susquehanna University, Selingsgrove, Pa.	1858	G. Morris Smith	235	235	38	513,649	589,765
Swarthmore College, Swarthmore, Pa.	1864	John W. Nason	466	879	117	9,670,058	31,562,072
Sweet Briar College, Sweet Briar, Va.	1901	Anne G. Pannell	448	448	57	995,827	9,997
Swift Memorial Jr. Col., Rogersville, Tenn.	1883	R. E. Lee	115	115	11	—	279,306
Syracuse University, Syracuse, N.Y.	1870	William P. Tolley	8,990	14,459	1,216	10,029,680	19,000
T							
Taft Junior College, Taft, Calif.	1922	Eugene M. Johnston	180	194	40	—	200,000
Talladega College, Talladega, Ala.	1867	A. D. Beitel	296	296	31	1,188,733	18,000
Tarkio College, Tarkio, Mo.	1883	Clyde H. Canfield	181	190	26	719,132	18,000
Tarleton State Col. (Jr.), Stephenville, Tex.	1899	E. J. Howell	733	733	53	—	88,984
Taylor University, Upland, Ind.	1846	Evan Bergwall	433	436	33	135,170	630,633
Temple University, Philadelphia, Pa.	1884	Robert L. Johnson	7,733	16,105	752	1,681,808	14,000
Tennessee University of Knoxville, Tenn.	1794	Claude E. Johnson	7,439	12,449	1,355	723,856	21,000
Tennessee Univ. of Martin Branch, Martin, Tenn.	1927	Paul Meek	415	416	34	—	89,805
Tennessee A. & I. Sh. Univ., Nashville, Tenn.	1909	W. S. Davis	1,983	2,060	171	—	143,495
Tennessee Polytechnic Inst., Cookeville, Tenn.	1915	Everett Derryberry	1,894	2,355	122	—	58,916
Texas Wesleyan Col. (Jr.), Athens, Tenn.	1915	LeRoy A. Martin	220	223	22	218,050	30,000
Texas Wesleyan Col. (Jr.), Texarkana, Tex.	1927	H. W. Stillwell	160	485	21	—	1,015,363
Texas A. and M. Col. of College Station, Tex.	1876	Marion Thomas Harrington	6,290	6,583	525	483,657	4,430
Texas University of Austin, Tex.	1881	Logan Wilson	4,229	6,091	718	132,099,940	507
Texas Christian University, Fort Worth, Tex.	1873	M. E. Sadler	843	843	42	6,000,000	1,368
Texas College, Tyler, Tex.	1894	D. R. Glass	2,295	2,295	24	—	506
Texas Col. of Arts and Ind., Kingsville, Tex.	1925	Ernest H. Poteet	1,450	2,705	106	—	806
Texas Lutheran University, Houston, Tex.	1891	William F. Kraushaar	322	328	28	44,000	1,703
Texas Southern University, Texarkana, Tex.	1947	R. O'Hara Lanier	2,055	2,543	145	—	241
Texas State Col. for Wm., Denton, Tex.	1926	John F. Barron	725	1,148	26	—	221
Texas State Col. for Wm., Denton, Tex.	1901	John A. Gunn	2,006	2,156	180	—	585
Texas Technological Col., Lubbock, Tex.	1923	E. N. Jones	4,329	4,906	300	—	533
Texas Western College, Ft. Worth, Tex.	1891	Low Sane	—	930	52	1,100,915	1,043
Texas Western College of the University of Texas, El Paso, Tex.	1913	Wilson Homer Elkins	1,423	2,295	117	—	1,044
Thial College, Greenville, Pa.	1866	Frederic Ivin	455	447	37	237,943	332
Thompson University, Harvey, Ill.	1927	James L. Beck	310	310	23	—	435
Toledo University of Toledo, Ohio	1872	Ada S. Knowles	2,470	4,537	212	84,540	1,561
Toronto University of Toronto, Ont., Can.	1827	Sidney E. Smith	10,271	11,286	1,501	500,000	110
Tougaloo College, Tougaloo, Miss.	1869	Harold C. Warren	290	293	21	48,521	157
Transylvania College, Lexington, Ky.	1823	Frank Anthony Rose	247	265	30	733,037	586
Trinity College, Hartford, Conn.	1823	Arthur Howard Hughes	928	1,145	75	48,220,181	8
Trinity University, Washington, D.C.	1867	Sr. Catherine Dorthea	466	500	61	367,225	69
Trinity College, San Antonio, Tex.	1899	J. W. Laurie	828	1,192	156	839,482	310
Tufts College (incl. Jackson College), Medford, Mass.	1852	Leonard Carmichael	3,279	3,388	925	10,543,482	305
Tulane Univ. of Louisiana, New Orleans, La.	1834	Rufus C. Harris	3,964	5,745	1,015	13,217,278	405
Tulsa University of Tulsa, Okla.	1894	C. I. Pontius	2,047	2,355	145	2,000,000	441
Tusculum College, Greeneville, Tenn.	1791	Raymond C. Rankin	176	178	20	825,552	780
Tuskegee Institute, Tuskegee Institute, Ala.	1881	Frederick D. Patterson	1,864	1,927	220	7,888,357	91
Tyler Junior College, Tyler, Tex.	1926	H. E. Jenkins	933	1,543	85	—	265
U							
Union College, Barbourville, Ky.	1879	Conway Boatman	356	457	26	612,387	511
Union College, Lincoln, Neb.	1891	Harvey C. Hartman	569	732	45	—	1,435
Union College, Schenectady, N.Y.	1795	Carter Davidson	995	1,475	115	6,500,000	651
Union University, Jackson, Tenn.	1834	Warren F. Jones	416	523	33	455,863	722
U.S. Coast Guard Acad., New London, Conn.	1876	A. G. Hall	562	562	55	—	3,379
U.S. Merchant Marine Academy, Kings Point, N.Y.	1938	Gordon McIntock	920	920	81	—	4,412
U.S. Military Academy, West Point, N.Y.	1802	Frederick A. Irving	2,448	2,448	312	—	200
U.S. Naval Academy, Annapolis, Md.	1845	Harry W. Hill	3,761	3,761	510	\$ 500,000	2,875
Upper Iowa University, Fayette, Ia.	1857	W. C. Mongold	223	248	18	—	4,335
Ursula College, East Orange, N.J.	1893	Evald B. Lawson	1,234	1,582	90	250,000	3,582
Ursuline College, Collegeville, Pa.	1869	Norman E. McClure	688	693	57	1,104,851	10,698
Ursuline College, Louisville, Ky.	1938	Mother M. Columba	144	271	34	—	664
Ursuline Col. for Women, Cleveland, Ohio	1871	Mother M. Celestine	198	—	—	—	—
Utah University of Salt Lake City, Utah	1850	A. Ray Olpin	5,650	7,114	491	411,576	—
Utah State Agricultural Col., Logan, Utah	1888	Louis L. Madsen	2,990	3,164	298	—	298
V							
Valdosta State College, Valdosta, Ga.	1906	J. Ralph Thaxton	364	411	29	—	27,816
Vallejo College (Jr.), Vallejo, Calif.	1945	Harvey D. Wisner	1,253	1,253	75	—	8,529
Valparaiso University, Valparaiso, Ind.	1859	O. P. Kretzmann	1,645	1,657	130	436,905	81,500
Vanderbilt University, Nashville, Tenn.	1872	Harvie Branscomb	2,861	2,886	549	31,562,072	589,765
Vanderbilt Extension Center (Jr.), Portland, Ore.	1872	Stephen E. Epler	1,024	1,024	36	—	9,997
Vassar College, Poughkeepsie, N.Y.	1861	Sarah G. Blanding	1,424	1,424	175	15,200,000	279,306
Ventura Junior College, Ventura, Calif.	1929	D. R. Henry	1,225	1,251	74	—	19,000
Vermont University of State Agricultural Col., Burlington, Vt.	1791	C. W. Boramann	2,810	3,023	318	4,285,321	200,000
Vermont Junior College, Montpelier, Vt.	1834	Ralph Edward Noble	172	189	17	135,000	18,000
Villa Maria College, Erie, Pa.	1925	Mother Aurelia	165	255	39	187,911	18,000
Villanova College, Villanova, Pa.	1842	F. X. N. McGuire	2,035	2,035	213	4,303,387	88,984
Virginia University of Charlottesville, Va.	1819	Colgate W. Darden, Jr.	3,401	3,544	651	15,000,000	630,633
Virginia Junior College, Virginia, Va.	1884	Robert L. Brantley	156	262	25	550,000	14,000
Virginia Military Institute, Lexington, Va.	1821	William H. Mullan, Jr.	3,063	3,090	374	889,874	89,805
Virginia Polytechnic Inst., Blacksburg, Va.	1839	Walter S. Newman	17,066	17,990	176	344,312	143,495
Virginia State College, Petersburg, Virginia	1885	Robert Prentiss Daniel	711	711	805	—	58,916
Virginia Union University, Richmond, Va.	1865	John M. Ellison	109	109	18	50,000	4,430
Voorhees School and Junior College, Denmark, S.C.	1897	Cecil D. Halliburton	109	109	18	50,000	4,430
W							
Wabash College, Crawfordsville, Ind.	1832	Frank H. Sparks	506	507	54	3,659,600	104,000
Wagner College, Staten Island, N.Y.	1883	D. M. Delo	806	1,368	95	436,000	41,207
Wake Forest College, Wake Forest, N.C.	1833	Harold W. Tribble	1,703	1,703	167	4,436,735	113,418
Waldorf College (Jr.), Forest City, Ia.	1903	Sidney A. Rand	241	268	22	65,000	8,000
Walla Walla Col., College Place, Wash.	1892	G. W. Bowers	922	1,059	55	—	37,345
Warburg College, Waverly, Ia.	1852	C. E. Becker	585	594	42	140,050	30,000
Washington Municipal Univ., Topeka, Kan.	1865	Bryan S. Stoffer	1,193	1,551	115	1,454,723	71,090
Washington State Col. of Pullman, Wash.	1890	C. Clement French	4,853	4,853	412	1,608,746	600,000
Washington University of Seattle, Wash.	1861	Henry Schmitz	12,437	13,297	1,237	42,500,000	747,669
Washington and Jefferson Col., Wash., Pa.	1787	Boyd C. Patterson	526	533	46	1,688,317	80,000
Washington and Lee Univ., Lexington, Va.	1749	Francis P. Gaines	1,043	1,044	84	5,566,259	17,000
Washington College, Chestertown, Md.	1782	D. Z. Gibson	332	335	26	99,753	39,000
Washington Missionary Col., Takoma Park, Washington, D.C.	1904	W. H. Shephard	435	586	45	—	38,895
Washington University, St. Louis, Mo.	1853	Arthur H. Compton	4,572	11,330	1,561	33,017,558	662,000
Waynesburg College, Waynesburg, Pa.	1849	Paul R. Stewart	542	595	35	414,558	35,000
Wayne University, Detroit, Mich.	1868	C. B. Hilberry	7,227	17,384	785	151,000	410,000
Weatherford Col. (Jr.), Weatherford, Tex.	1868	Vernon D. Parrott	110	157	10	171,000	5,000
Webb Institute of Naval Architecture, Glen Cove, L.I., N.Y.	1889	F. E. Heberle	69	69	8	3,000,000	8,000
Weber College (Jr.), Ogden, Utah	1889	A. A. Dixon	906	2,665	160	—	23,000
Webster College, Webster Groves, Mo.	1915	Sister Mariella Collins	310	504	54	—	27,800
Wellesley College, Wellesley, Mass.	1870	Margaret Clapp	1,739	1,739	184	18,128,071	277,816
Wells College, Aurora, N.Y.	1868	Louis Jefferson Long	305	305	41	2,346,562	109,000
Wenatchee Jr. Col., Wenatchee, Wash.	1939	Mrs. E. W. Van Tassell	202	311	22	—	4,100
Wentworth Mil. Acad. (Jr.), Lexington, Mo.	1880	J. M. Sellers	405	405	35	—	8,800
Wesleyan College, Macon, Ga.	1836	W. F. Quillen	441	473	68	1,568,042	39,803
Wesleyan University, Middletown, Conn.	1831	Victor L. Butterfield	780	820	92	10,019,417	370,270
Wesley Junior College, Dover, Del.	1873	J. Paul Slaybaugh	91	117	15	120,000	5,000
Westbrook Junior College, Portland, Me.	1831	Millon D. Proctor	265	267	27	73,466	9,000
Western Carolina Tch. Col., Cullowhee, N.C.	1889	Edmund Harris Kase, Jr.	511	566	37	—	30,000
Western College, Oxford, Ohio	1853	Paul A. Reid	245	245	44	979,126	48,487
Western Illinois State Col., Macomb, Ill.	1899	Frank A. Bev	1,261	1,918	114	—	71,282
Western Kentucky State Col., Bowling Green, Ky.	1906	Paul L. Garrett	1,435	1,747	98	—	78,000
Western Maryland Col., Westminster, Md.	1868	Lowell Skinner Ensor	651	722	53	1,197,872	44,787
Western Michigan College of Education, Kalamazoo, Mich.	1903	Paul V. Sangren	3,379	4,412	295	—	86,416
Western Montana College of Education, Dillon, Mont.	1893	Rush Jordan	190	200	22	—	25,000
Western Ontario Univ., London, Ont., Can.	1878	G. Edward Hall	2,875	4,335	22	2,000,000	25,000
Western Reserve Univ., Cleveland, Ohio	1826	John Schoff Mills	3,582	10,698	871	22,173,684	664,079
Western State Col. of Colo., Gunnison, Colo.	1901	Peter P. Mickelson	632	664	42	—	47,118

Institution and location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Library Volumes	Institution and Location	Year Founded	Chief Executive	Full Time Students	Part Time Students	Faculty	Endowment	Bound Library Volumes
Western Washington College of Education, Bellingham, Wash.	1899	Wm. W. Haggard	1,158	1,190	95	—	73,176	Winston-Salem Tch. Col., Winston-Salem, N.C.	1892	Francis L. Atkins	602	602	32	\$ 100,000	30,588
West Georgia Col. (Jr.), Carrollton, Ga.	1907	I. S. Ingram	262	262	18	—	11,925	Winthrop College, Rock Hill, S.C.	1886	Henry R. Sims	1,120	1,120	106	—	87,000
West Liberty State Col., W. Liberty, W. Va.	1837	Paul N. Elbin	458	656	38	—	25,000	Wisconsin, University of, Madison, Wis.	1848	Edwin Brown Fred	16,144	16,144	1,655	5,920,858	740,226
Westminster College, Fulton, Mo.	1851	William W. Hall, Jr.	311	311	26	\$ 600,000	40,000	Wisconsin State Col., Eau Claire, Wis.	1915	W. R. Davies	756	764	61	—	30,000
Westminster College, New Wilmington, Pa.	1852	Will W. Orr	818	1,018	71	1,050,000	41,927	Wisconsin State Col., La Crosse, Wis.	1909	Rexford S. Mitchell	924	928	77	—	47,886
Westminster College, Salt Lake City, Utah.	1875	J. Richard Palmer	252	260	27	180,000	16,500	Wisconsin State Col., Milwaukee, Wis.	1880	J. Martin Klotzsche	1,714	1,730	120	—	63,192
West Texas State Col., Canyon, Tex.	1909	James P. Cornette	930	1,860	77	—	48,813	Wisconsin State Col., Oshkosh, Wis.	1871	Forrest R. Polk	689	1,044	61	—	43,192
West Virginia State Col., Institute, W. Va.	1891	John W. Davis	4,038	1,008	105	115,300	200,000	Wisconsin State Col., Platteville, Wis.	1866	C. O. Newlin	577	785	54	—	34,555
West Virginia Univ., Morgantown, W. Va.	1867	Irvin Stewart	4,933	4,414	417	—	—	Wisconsin State Col., River Falls, Wis.	1874	E. H. Kleinpell	598	669	51	—	45,600
West Virginia Wesleyan Col., Buckhannon, W. Va.	1890	W. J. Scarborough	500	620	33	479,000	37,500	Wisconsin State Col., Stevens Point, Wis.	1894	W. C. Hansen	683	691	57	—	49,664
Wheaton College, Norton, Mass.	1834	A. Howard Menely	532	532	68	1,282,980	69,000	Wisconsin State Col., Superior, Wis.	1893	Jim Dan Hill	774	785	50	—	40,000
Wheaton College, Wheaton, Ill.	1860	V. Raymond Edman	1,599	1,692	125	910,612	98,000	Wisconsin State Col., Whitewater, Wis.	1868	R. C. Williams	664	1,018	58	2,395,947	91,284
Whitlock College, Boston, Mass.	1889	Winifred E. Bain	369	369	23	—	15,000	Wittenberg College, Springfield, Ohio	1845	F. C. Stoughton	904	1,436	78	950,054	48,975
Whitman College, Walla Walla, Wash.	1859	Chester C. Maxey	679	679	52	2,400,000	65,508	Wofford College, Spartanburg, S.C.	1854	F. P. Gaines, Jr.	517	567	44	—	160,000
Whittier College, Whittier, Calif.	1901	Paul S. Smith	983	1,021	57	1,250,000	53,756	Woodstock College, Woodstock, Md.	1867	Joseph F. Murphy	160	160	32	—	113,142
Whitworth College, Spokane, Wash.	1890	Frank F. Warren	655	695	51	65,000	25,000	Wooster College, Wooster, Ohio	1866	Howard F. Lowry	1,084	1,096	98	3,802,769	40,000
Wichita, Municipal Univ. of, Wichita, Kan.	1895	Harry F. Corbin	2,186	2,919	189	91,821	93,242	Worcester Polytechnic Inst., Worcester, Mass.	1865	Wat T. Cluervius	668	683	82	5,115,916	190,000
Wilberforce University, Wilberforce, O.	1856	Charles Leander Hill	300	312	40	76,865	17,500	Wyoming, University of, Laramie, Wyo.	1886	G. D. Humphrey	2,200	2,315	291	4,754,713	—
Wiley College, Marshall, Tex.	1873	J. S. Scott	636	699	40	628,775	23,000	Xavier University, Cincinnati, Ohio	1831	James F. Maguire	1,202	2,500	128	389,265	100,488
Wilkes College, Wilkes-Barre, Pa.	1933	Eugene S. Farley	570	1,780	62	551,686	26,000	Xavier University, New Orleans, La.	1925	Maheir M. Agatha	890	1,026	92	782,400	66,913
Williamette University, Salem, Ore.	1842	G. Herbert Smith	1,013	1,064	80	2,164,634	72,071	Yakima Valley Jr. Col., Yakima, Wash.	1928	H. A. Hoeglund	317	—	22	—	9,317
William and Mary Col. of, Williamsburg, Va.	1693	Alvin Duke Chandler	1,600	1,621	116	2,101,302	21,789	Yale University, New Haven, Conn.	1701	Alfred W. Griswold	7,270	7,688	1,592	141,208,881	4,036,276
William Jewell Col., Liberty, Mo.	1849	Lewis W. Webb, Jr.	402	1,233	57	—	68,549	Yankton College, Yankton, S.D.	1881	J. Clark Graham	235	235	28	749,970	48,000
Williams College, Williamstown, Mass.	1791	James P. Baxter, III	1,045	1,055	124	14,520,903	200,000	Yeshiva University, New York, N.Y.	1897	Samuel Belkin	1,732	1,795	203	1,500,000	120,000
William Woods College (Jr.), Fulton, Mo.	1890	T. T. Swearingin	289	307	26	575,000	15,000	Young L. G. Harris Col. (Jr.), Young Harris, Ga.	1886	C. R. Clegg	250	250	18	240,000	10,000
Williamson College, Williamstown, Ohio	1863	J. Eugene Smith	226	509	41	—	16,608	Youngstown College, Youngstown, Ohio	1908	Howard W. Jones	1,592	3,487	226	957,000	61,808
Wilson College, Chambersburg, Pa.	1869	Samuel D. Marble	453	472	26	500,000	62,663	Yuba College (Jr.), Marysville, Calif.	1927	J. J. Collins	792	2,081	36	—	15,000
Winona State Tch. Col., Winona, Minn.	1858	Nels Minné	338	345	51	1,058,432	40,000								

URANIUM PROSPECTOR setting up a Geiger counter to retest old diggings at Temple mountain, Utah. In addition to the efforts of private individuals and companies, about \$3,000,000 was spent by U.S. government agencies in tracking down new uranium sources in 1952

Uranium. The frantic scramble for the discovery and development of new sources of uranium continued in 1952. For the time being the major emphasis was on uranium as a source material for atomic weapons. In the first phase of the search the old-time whiskered prospector with his burro and gold pan made way for the young scientist and his Geiger counter, wandering in out-of-the-way places, some promising and others not; such broadcast methods resulted in many new discoveries, but were slow and tedious. A second phase led to a careful scrutiny of various operations handling minerals in large quantities, on the theory that the ores might contain minute quantities of uranium which could be recovered as a by-product; this method also proved profitable as evidenced by processes for the recovery of traces of uranium from phosphate rock and from the gold ores of South Africa. In a third phase, to overcome the slow progress of ground work, prospecting took to the air. Aeroplane surveys using suspended scintillation counters were made in Saskatchewan, Colorado and Utah, thus covering in a day an area that would require a year's work by a ground crew, and at less cost per acre.

The British and U.S. governments were jointly financing the plant investment required for the recovery of uranium from South African gold ores. The first of a series of a dozen plants was scheduled to start operation about midyear of 1952.

In the United States, while the Colorado plateau area continued to be the heaviest producer, several mines were operating in the Marysville district of Utah, and scattered discoveries had been made elsewhere, as well as extensions of established

producing areas. Processing plants were distributed throughout the producing areas, the ninth plant being under construction in 1952. (See also ATOMIC ENERGY.) (G. A. Ro.)

Uruguay. A republic in southeastern South America, Uruguay is bounded on the north by Brazil, on the south by the Rio de la Plata, on the east by the Atlantic ocean and on the west by Argentina. It is the smallest country in South America, with an area of 72,172 sq.mi. It has a population of 2,365,000 (official est., Dec. 1949), mostly of European extraction. Montevideo, the capital, has 850,000 inhabitants (1947 est.). Other leading cities are Paysandú (50,000); Salto (48,000); Mercedes (33,000); and Minas (32,000). Religion: Christian, mostly Roman Catholic. Chairman of the governing council in 1952: Andrés Martínez Trueba.

History.—During 1952 Uruguay's political life remained stable and its economy, although affected by high living costs and inflation, was under control so that it did not have any adverse effects on the life of the nation.

Wool and meat, the most important products for export, continued to bring high prices and their demand remained stable. The decline of Argentine production helped Uruguayan foreign trade. The government adopted a policy of strict control on local prices which helped to ease living costs.

A step toward further democratization of the government and ensuring against the emergence of a strong executive with authoritarian ideas was taken when the presidency was abolished. In its place a governing council (*ejecutivo colegiado*) was adopted. The new council, made up of nine members, six representing the majority Colorado party and three the minority party, took office on March 1. Andrés Martínez Trueba, the outgoing president, was elected chairman of the new council, which was to hold office for three years to complete the current term. Thereafter the term would be for four years and members would not be eligible for re-election. The council would perform the executive functions of the government and would have a cabinet of nine ministers to assist it.

Relations with Argentina remained strained throughout the year. The establishment of the Argentine Exile association in Montevideo, a group of political refugees from the Perón regime dedicated to maintaining close association among themselves and to promoting political activity, constituted another hindrance in the relations between the two countries. (J. McAd.)

Education.—In 1950 there were 546 urban schools with 157,033 pupils and 1,176 rural schools with 55,476 pupils. The total number of teachers was 6,744. There were also 191 private schools with 36,884 pupils. The University of Montevideo had 11,948 students. In 1950, 25,457,117 pesos were allocated for primary education and 7,047,140 pesos for the university.

Finance.—The monetary unit is the peso, valued at \$0.5263 U.S. currency, controlled rate; \$0.4082, commercial free rate; and \$0.3378, uncontrolled rate, on Sept. 17, 1952. The 1952 budget estimated revenue at 456,100,000 pesos and expenditure at 456,156,000 pesos. Actual government expenditure in 1951 was 367,000,000 pesos; revenue, 357,500,000 pesos. Autonomous entities operated at a loss of 12,600,000 pesos. The internal public debt was 786,185,000 pesos on May 31, 1952; external, 112,623,000 pesos. Currency in circulation at the end of July 1952 amounted to 302,900,000 pesos; demand deposits 407,800,000 pesos; gold reserves \$211,000,000; dollar exchange in U.S. banks \$102,000,000. The cost of living index for Montevideo stood at 132 in July 1952 (1948=100).

Trade and Communications.—Exports in 1951 totalled \$236,330,000; imports (excluding gold valued at \$63,627,000), \$309,389,000. Chief exports were wool (41%), beef and mutton (16%), hides, skins and leather (10%) and linseed oil (4%); leading imports, raw materials (including sugar, iron and steel and cotton) (30%), vehicles (16%), machinery (15%) and fuel and lubricants (9%). Leading customers were the U.S. (43%), British Commonwealth (20%), Belgium (5%) and France (4%); leading suppliers, the U.S. (38%), British Commonwealth (16%), Brazil (7%) and France (6%).

Railways (1948) totalled 1,874 mi.; in 1951 they carried 10,899,000 passengers and 1,883,645 metric tons of freight. Highways (1948) totalled 26,000 mi., of which 3,051 mi. were paved national roads. On Dec. 31, 1949, there were 56,500 automobiles and 20,000 trucks. According to *Lloyd's Register of Shipping*, the merchant marine had 44 steamers and motor ships (100 tons and over) aggregating 70,222 gross tons on June 30, 1951.

Agriculture.—Official production estimates for major crops in the crop year 1951-52 (in metric tons) included wheat 472,571; linseed 119,946;

oats 39,762; malt barley 10,203; ordinary barley 7,926; rice 46,104; maize (1950-51) 278,467. The 1951 agricultural census showed 23,408,642 sheep, 8,154,109 cattle, 511,547 milk cows, 667,251 horses and 258,980 pigs. Wool exports in the wool year 1951-52 (Oct. 1-Sept. 30) were 103,041 bales, of which 59,807 bales went to the U.S., 15,630 bales to the United Kingdom and 4,875 bales to Germany. Meat exports in 1951 included 62,202 metric tons of frozen beef, 12,633 tons of canned beef and 4,857 tons of frozen mutton.

Manufactures.—There were four *frigoríficos* for treating meat, eight *saladeros* and seven meat-canning plants in 1952. (J. W. Mw.)

U.S.S.R.: see UNION OF SOVIET SOCIALIST REPUBLICS.

Utah. A Rocky mountain state of the United States, admitted to the union in 1896, Utah is popularly known as the "Beehive state." Area: 84,916 sq.mi. (82,346 sq.mi. land; 2,570 sq.mi. water); pop. (1950 census) 688,862 (est. July 1, 1951) 709,000.

Capital: Salt Lake City (1950 census) 182,121. Other principal cities with 1950 census figures were Ogden, 57,112; Provo, 28,937; Logan, 16,832.

History.—The chief officers of Utah in 1952 were J. Bracken Lee, governor; Heber Bennion, Jr., secretary of state; Reese M. Reese, auditor; Ferrell H. Adams, treasurer; Clinton D. Vernon, attorney general; E. Allen Bateman, superintendent of public instruction.

In the Aug. 1952 primary election, incumbent Sen. Arthur V. Watkins defeated Marriner S. Eccles for the Republican nomination for senator. Other Republican contests found J. Bracken Lee the nominee for governor to succeed himself; Douglas R. Stringfellow, nominee from the 1st congressional district; and William A. Dawson, nominee from the 2nd congressional district. For the Democrats, Rep. Walter K. Granger defeated former Gov. Herbert B. Maw for the nomination for senator. In other Democratic contests, Mayor Earl J. Glade of Salt Lake City bested Secretary of State Heber Bennion, Jr., in the closest contest of the election; Ernest R. McKay won the nomination in the 1st congressional district; and incumbent Reva Beck Bosone won in a landslide the nomination in the 2nd congressional district. The total vote cast was approximately 152,000, about 30,000 more than had ever been cast in a Utah primary since the adoption of the primary system in 1938. The vote cast was about 37% of the 414,000 voters which the U.S. census estimated to be the total Utah population of voting age. (For results of the November elections, see the article ELECTIONS, U.S.)

Education.—For the 1951-52 school year there were 103,211 full-time elementary students and 65,235 full-time secondary students enrolled in the Utah schools. This total of 168,446 students was an increase of 11,769 over the 1950-51 figure. During 1951-52 the elementary schools employed 2,826 teachers or a total instructional staff of 3,240 (including principals, supervisors, etc.); the secondary schools employed 2,272 teachers or a total instructional staff of 2,489. Total expenditures for education in Utah in 1950-51 amounted to \$39,375,661.91.

Social Insurance and Assistance, Public Welfare and Related Programs.—Total expenditures for public assistance during the fiscal year July 1951 to June 1952 amounted to \$13,241,877.23 (for 24,700 persons) which was an increase of \$1,365,236.22 over the 1951 total. The funds were distributed as follows: old-age assistance \$6,314,488.13 (10,127 persons); aid to dependent children \$3,813,944.21 (10,470 persons); aid to the blind \$154,056.38 (246 persons); aid to the disabled \$1,046,457.73 (1,663 persons); aid to unemployables \$646,138.85 (1,059 persons); aid to employables \$180,466.36 (600 persons); foster care \$274,573.44 (535 persons); medical care and sight conservation \$12,368.43; welfare services \$142,930.33; and administration \$656,453.37.

For the fiscal year July 1951 to June 1952 the four Utah state welfare institutions reported the following expenditures and populations: industrial school at Ogden, approximately \$275,000 and 165 students; mental hospital at Provo, approximately \$1,000,000 and 1,360 inmates; training school at American Fork, approximately \$475,000 and 740 students; and the tuberculosis sanatorium at Ogden, approximately \$115,000 and 85 patients.

Communications.—On Jan. 1, 1952, there was a total of 30,211 mi. of road in the state, including the following: state road mileage 5,472; county road mileage 16,107; city street mileage 2,917; and federal road mileage 5,715. Total expenditures by the Utah state road commission for the year ending Dec. 31, 1951, amounted to \$12,709,354 of which \$7,966,179 was spent for construction, \$514,905 for securing rights-of-way, \$2,607,018 for maintenance, \$664,021 for equipment rentals and sales, and \$957,231 for miscellaneous expenditures. Motor vehicle registration reached 289,455 vehicles by Sept. 30, 1952, including 228,140 passenger cars. As of Jan. 1,

1952, operating railroads had a combined mileage of 1,977.22 mi., but by Sept. 1952, the Bamberger Electric Railway, extending from Ogden to Salt Lake City, had petitioned the state for authorization to substitute buses for the streetcars.

Banking and Finance.—The 45 state banks had total assets of \$389,986,763.50 as of June 30, 1952. On that date the ten national banks reported total assets of \$291,198,177.63. There were 13 state-chartered savings and loan associations with total investment accounts of \$50,564,399. The six federal building and loan associations reported total assets of \$42,911,934.

State receipts for the fiscal year ending June 30, 1952, were \$95,399,115; disbursements for the same period amounted to \$88,476,881. The total state debt on June 30, 1952, was \$470,000 which was to be completely amortized by March 1, 1955, as result of a bond retirement fund created by the 1943 legislature.

Agriculture.—Total farm income for Utah for 1951 reached \$199,286,000 of which livestock and products amounted to \$142,533,000, crops amounted to \$45,468,000, government payments amounted to \$3,164,000, and products consumed on farm totalled \$8,121,000. The total value of crops exclusive of livestock and products for 1951 amounted to \$87,118,000.

Table I.—Principal Agricultural Products of Utah

Crop	Indicated 1952	1951	Average, 1941–50
Wheat, bu.	8,079,000	9,081,000	7,236,000
Barley, bu.	6,624,000	6,072,000	5,757,000
Oats, bu.	2,162,000	1,886,000	2,106,000
Corn, bu.	1,188,000	1,147,000	831,000
Potatoes, bu.	3,175,000	2,316,000	2,938,000
Sugar beets, tons	322,000	403,000	520,000
Hay (all), tons	1,234,000	1,023,000	1,154,000
Apples, bu.	347,000	493,000	441,000
Peaches, bu.	648,000	800,000	646,000
Pears, bu.	276,000	198,000	156,000
Celery, crates	331,000	295,000	306,000
Tomatoes, bu.	60,000	50,000	48,000

Source: U.S. Department of Agriculture.

Manufacturing.—In 1951, the average workers per month in the principal industries of the state increased by 8,118. The total wages for 1951 surpassed those of 1950 by \$58,666,522. (B. D. M.)

Table II.—Principal Industries of Utah

Industry	Av. workers per month	Total wages 1950
Mining	13,230	\$ 56,990,716
Contract construction	13,027	49,881,784
Manufacturing	31,253	108,946,279
Transportation, communication and utilities.	10,539	34,114,717
Wholesale and retail trade	46,214	126,705,882
Finance, insurance and real estate	6,427	18,957,997
Service	14,510	30,161,759
Miscellaneous	94	167,013
Total (all industries)	135,294	\$425,926,147

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in Utah in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not available. Utah ranks

Table III.—Mineral Production of Utah

(In short tons, except as noted)

Mineral	Quantity 1950	Value 1950	Quantity 1949	Value 1949
Asphalt (gillsonite)	66,000	\$ 1,774,000	51,000	\$ 1,304,000
Clays	294,000	930,000	222,000	624,000
Coal	6,670,000	32,050,000	6,160,000	29,357,000
Coke*	1,226,000	?	1,035,000	?
Copper	279,000	115,910,000	197,000	77,715,000
Fluorspar	19,000	338,000	8,000	180,000
Gold (oz.)	458,000	16,014,000	314,000	10,992,000
Iron ore	3,484,000	5,747,000	3,022,000	4,404,000
Lead	45,000	12,083,000	53,000	16,771,000
Lime	49,000	457,000	36,000	356,000
Natural gas (thousand cu. ft.)	3,950,000	237,000	6,126,000	368,000
Petroleum (bbl.)	1,228,000	†	637,000	†
Salt	117,000	512,000	79,000	387,000
Sand and gravel.	3,435,000	2,252,000	2,332,000	1,553,000
Silver (oz.)	7,084,000	6,411,000	6,725,000	6,086,000
Stone	929,000	881,000	283,000	427,000
Zinc	32,000	8,997,000	41,000	10,086,000
Other minerals . . . . .	...	25,363,000	...	17,215,000
Total		\$229,956,000		\$177,825,000

*Values for processed materials are not included in the totals.

†Value included with other minerals.

2nd among the states in the production of copper, silver, gold and molybdenum, and 3rd in lead, and stands 13th in the value of mineral output, with 1.94% of the U.S. total.

Utilities, Public: see PUBLIC UTILITIES.

Vacation: see TOURIST TRAVEL.

Vanadium: see MINERAL AND METAL PRODUCTION AND PRICES.

Vandenberg, Hoyt Sanford (1899–), U.S. air force chief of staff, was born on Jan. 24 in Milwaukee, Wis. He graduated from the U.S. Military academy at West Point, N.Y., in 1923 and served in

various capacities in the U.S. until May 1929 when he went to Schofield Barracks, Hawaii, to join the 6th pursuit squadron, of which he assumed command in Nov. 1929. He became an instructor at the Air Corps Tactical school and in Sept. 1938 entered the Army War college, being graduated in June 1939. He next served in the plans division of the office of the chief of the air corps in Washington, D.C., and became operations and training officer of the air staff in Washington after the U.S. entered World War II. In June 1942 he was assigned to the United Kingdom, and helped plan the air participation in the North African campaign. On Feb. 18, 1943, he became chief of staff of the northwest African strategic air force. Returning to the U.S. in Aug. 1943, he was deputy chief of air staff, and in 1944 commanded the U.S. air component in the Allied expeditionary force, assuming command of the 9th air force in Aug. 1944. He was named chief of staff of the air force on April 30, 1948.

On Feb. 19, 1951, he agreed in testimony before a senate committee that air and sea forces alone could not prevent Soviet forces from overrunning Europe.

Vandenberg, recovered from a serious illness in 1951, was re-appointed chief of staff of the air force on March 6, 1952, for another 14-month term.

Van Fleet, James Alward (1892–), U.S. general, was born on March 19 in Coytesville, N.J. He studied at the Summerlin institute in Bartow, Fla., attended the U.S. Military academy and was graduated in 1915. He saw action in France during World War I, served with U.S. occupation forces, and was assigned to a series of military education posts during the 1920s and early 1930s. As the pre-World War II defense program expanded, he was named commanding officer of the 8th infantry regiment of the 4th division, and he eventually led this regiment in the invasion of Normandy. He commanded the 4th infantry division in operations against the Siegfried line, the 90th division in crossing the Moselle and the 3rd corps in the advance into Germany.

On Feb. 6, 1948, Pres. Harry S. Truman named him to direct the U.S. military groups on duty in Greece, where he had much to do with the eventual ousting of the Communist guerrilla forces. On April 11, 1951, he was appointed to succeed Gen. Matthew B. Ridgway as U.S. 8th army commander in Korea, in the reshuffling of commands that followed the removal of Gen. Douglas MacArthur. He was named a four-star general by President Truman on July 9, 1951. Throughout the protracted truce negotiations in 1951 and 1952, Van Fleet expressed full confidence that the U.N. forces would decisively defeat any new Communist offensive in Korea.

Varnishes: see PAINTS AND VARNISHES.

Vatican City State. This sovereign independent state was established by the Lateran treaty between the Holy See and the Italian government on Feb. 11, 1929. The treaty was recognized in international law, with the reigning pope as sovereign. The area of Vatican City is 108.7 ac., excluding the papal estate of Castel Gandolfo and certain basilicas in Rome which are extraterritorial. Executive powers are exercised by the governor, responsible to the pope.

The Vatican sent 51 representatives, including nuncios, inter-nuncios, apostolic delegates and other representatives, to other countries. Diplomatic representatives were assigned to the Vatican by 41 countries.

Pope Pius XII sent a representative to the United Nations for the first time in May 1952 to sign an international treaty to promote the welfare of refugees.

In an apostolic constitution Pope Pius provided for the estab-

lishment of a supreme council on emigration, under the jurisdiction of the Sacred Consistorial Congregation, and defined the functions under it of the delegate for emigration.

A copy of the *Princeton Index* was presented to the Vatican library by Francis Cardinal Spellman, archbishop of New York. The index, through its large collection of 100,000 photographs, brought together an organized volume of material which was not previously available to the scholar and research worker.

The Sacred Congregation of the Holy Office placed on the *Index of Forbidden Books* eight Italian books dealing with Padre Pio, Capuchin priest and reputedly a stigmatic. All works of André Gide, French novelist, were placed on the *Index* and all works of Alberto Moravia, Italian neorealist novelist.

The Sacred Congregation of the Holy Office issued a pronouncement condemning "corrupt and errant forms of sacred art" which had found their way into the churches and instructed bishops to resist certain tendencies in modern art which, by producing works "deformed or grotesque or hideous," pervert religious art's basic purpose.

The Sacred Congregation for the Propagation of the Faith issued an instruction regularizing mission collections by religious orders and other agencies. The instruction was particularly concerned with the status of pontifical mission organizations and the relations of other groups to them. (See also PIUS XII; ROMAN CATHOLIC CHURCH.) (J. LAF.)

Veal: see MEAT.

Vegetable Oils and Animal Fats.

Production in the U.S. of these several oils and fats was forecast at 11,815,000,000 lb. for the year beginning Oct. 1, 1952—a decline of about 400,000,000 lb. from the very high levels of 1950 and 1951, but far above the pre-World War II average of 8,696,000,000 lb. Consumption of the edible types by U.S. civilians in 1952 was indicated at 43.7 lb. per capita, about 5% more than in 1951 but only 98% as much as the prewar average.

U.S. Production of Principal Fats and Oils*

(In millions of pounds)

	1952†	1951‡	1950	Average, 1937-41
Butter	1,370	1,405	1,472	2,220
Lard	2,650	2,920	2,811	2,091
Edible tallow	180	170	158	225
Edible vegetable oils	4,565	4,685	4,397	2,253
Soap fats and oils	2,370	2,375	2,504	1,523
Drying oils	655	625	899	363
Other oils	25	25	32	21
Totals	11,815	12,205	12,273	8,696

*Year beginning October.

†Forecast. ‡Preliminary.

The total crop of the four oilseeds was a new record, 2% more than the previous high (1951) and about one-third larger than average. Soybeans made up more than half the total and cottonseed about one-third. Flaxseed production totalled 31,033,000 bu., compared with 33,802,000 bu. in 1951 and an average for the decade 1941-50 of 38,056,000 bu.; peanuts, 1,225,145,000 lb., compared with 1,676,125,000 lb. in 1951 and an average of 2,042,448,000 lb. for 1941-50. Butter production declined about 35,000,000 lb., compared with 1951. Consumption dropped to 8.7 lb. per capita for U.S. civilians, 9% less than in 1951 and 52% of the prewar level. Lard and rendered pork fat production declined by nearly 10% because of smaller pig crops.

Margarine use in 1952 was estimated at 7.7 lb. per capita, or 18% more than in 1951.

Soap fats and oils production remained on nearly the same level as in 1951, but far above average. Total domestic use in 1951-52 was about 20% less than a year earlier, partly because soap inventories were high and expansion continued in the sale

of synthetic detergents.

Of the 8,702,000,000 lb. of edible fats and oils, including butter, distributed in 1951-52, 81.9% went to U.S. civilians, 15.6% to export markets and smaller amounts to the U.S. military and possessions. Exports of food fats and oils for the year amounted to 1,358,000,000 lb., 30% more than the 1,045,000,000 lb. of the previous year, and indicated as a new record tonnage.

Prices for most fats and oils were lower to weak during 1952, with lard down 55% or more below its post-Korean war peak. In October the general level for fats and oils was about 25% lower than a year before, with the inedible soap fats and oils especially hard hit. Price-support programs to producers were in effect on several of the U.S.-produced oils and oilseeds: cottonseed at \$62.40 per ton (season's average forecast at \$69.30 per ton); soybeans at \$2.56 per bushel (season's average forecast at about \$2.70 per bushel); butterfat at 69.2 cents per pound; tung nuts at \$67.20 per ton; olive oil at \$2.50 per gallon; peanuts at 11.97 cents per pound; and flaxseed at \$3.77 per bushel.

Imports into the U.S. in 1951-52 of vegetable oils (expressed) were valued at \$85,300,000, 28% less than the \$119,000,000 of the previous year. Oil-bearing materials declined even more sharply, by 45%, to \$68,800,000 from \$125,000,000 in the preceding year.

World-wide, the fats and oils situation was eased. Even Japan's fat balance was indicated as markedly improved. World prices, led by U.S. and Indian markets, weakened, especially as regards lard, soybean oil, cottonseed oil and peanut oil. India set quotas on exports of linseed oil, peanuts and peanut oil. Production and exports of copra, coconut oil and palm oil in most producing areas tended to decline in 1952; there were some expectations of increased production in 1953. Norway's cod-liver oil production approximated the 1951 total of 3,170,000 gal. Spain, with a large 1951-52 olive oil crop of 770,000 tons, relaxed the previous rationing. A preview of the olive oil crop of the Mediterranean basin indicated only about 700,000 short tons, compared with a record 1,600,000 tons in 1951. Antarctic outturn of whale oil in 1951-52 totalled 408,000 tons. World production of sperm oil in 1952 was below the record 118,000 tons of 1951. (See also COTTON; PEANUTS; SOYBEANS.)

(J. K. R.)

Vegetables. Commercial truck-crop production in the U.S. for the fresh market in 1952, based on 25 vegetables and not including strictly market garden areas nor farm gardens, was forecast at about 8,552,300 tons, 3% smaller than in 1951 but 5% above the average for the preceding decade. Acreage was indicated at 1,764,870 ac., 1% more than in 1951 but only 95% as much as the 1941-50 average.

Amendment of the Defense Production act during 1952 prohibited price ceilings on fresh and processed vegetables. Prices were higher than in 1951. Exports of vegetables in 1951-52 accounted for only 1.4% of the total fresh vegetable production and 1.6% of the processed pack.

In Europe, it was indicated that the area under vegetables in 11 net importing countries in 1951-52 was 638,000 ha., compared with 675,000 ha. in the previous year and an average for 1947-48 to 1950-51 of 722,000 ha.; in 5 exporting countries the area in vegetables was 732,000 ha. in 1951-52 against an average for earlier postwar years of 684,000 ha., suggesting a shift away from local self-sufficient production at all costs toward trade expansion.

Commercial Truck Crops for the Fresh Market.—Commercial vegetable crops for the fresh market for the fall season of 1952 were estimated at 1,762,300 tons, 3% larger than in 1951 and 8% above average. The summer crop of 3,227,700 tons was

Table I.—U.S. Vegetable Production for Fresh Market

Crop	Unit	(In thousands)		
		Indicated 1952	1951	Average 1941-50
Artichokes	boxes	850	629	726
Asparagus	crates	3,758	3,367	4,422
Beans, lima	bu.	1,473	1,549	1,860
Beans, snap	bu.	16,482	19,702	17,102
Beets	bu.	1,411	1,350	2,171
Broccoli	crates	4,867	3,845	—
Brussels sprouts	tons	17,400	25,300	—
Cabbage	tons	1,091	1,111	1,451
Cantaloupes	crates	13,650	13,912	11,051
Carrots	bu.	30,556	29,359	25,689
Cauliflower	crates	11,826	12,177	11,617
Celery	crates	24,041	23,642	20,648
Corn, sweet	5 doz. ears	23,531	22,437	—
Cucumbers	bu.	7,387	7,352	5,606
Eggplant	bu.	1,653	1,307	1,380
Escarole	bu.	2,400	2,374	1,172
Honeyball melons	crates	20	36	169
Honeydew melons	crates	3,041	3,078	3,293
Kale	bu.	1,066	1,064	1,028
Lettuce	crates	39,704	36,231	30,263
Onions	sacks	39,403	39,367	40,132
Peas, green	bu.	1,847	2,045	5,148
Peppers, green	bu.	9,078	8,972	6,517
Shallots	bbl.	82	64	53
Spinach	bu.	10,323	11,081	13,282
Tomatoes	bu.	34,044	34,513	29,836
Watermelons	melons	97,448	99,351	86,143

about average, but 4% less than in 1951. The spring crop of 2,163,200 tons was 2% less than in 1951, but 15% above average, and the winter crop was 1,397,100 tons, smallest of the year and only 93% of the 1951 production, but 3% above average.

Though the price situation varied widely from one type of vegetable to another, in general prices for truck crops were substantially higher than in 1951. The seasonally adjusted July index was 360, compared with 253 a year earlier, and in September it was 269 against 238 a year before. Per capita consumption of fresh vegetables by civilians was expected to average 241 lb., 95% of the 254 lb. of 1951. Exports of fresh vegetables, primarily to Canada, were 548,000,000 lb. in 1951-52, compared with 466,000,000 lb. in the previous year and only 92,000,000 lb. in the pre-World War II period.

Commercial Truck Crops for Processing.—The U.S. 1952 crop of the 11 most important truck crops for commercial processing was forecast, on the basis of incomplete data, at 5,794,000 tons, compared with 6,937,070 tons in 1951 and an average for 1941-50 of 5,090,380 tons.

Consumption of canned vegetables in 1952 was estimated at 41.2 lb. per person, the same as in 1951, but 38% more than in the prewar period. It was indicated that the 1952 pack of canned vegetables was about 20% smaller than the 1951 record of 264,182,000 cases.

The 1952 pack of frozen vegetables was again large, perhaps exceeding the 1951 record pack of 770,038,000 lb., which in turn exceeded the 1950 record of 587,101,000 lb. Stocks in storage on June 30 were 346,031,000 lb., a new record, and about one-third larger than the 1950 record. Green peas constituted about one-third of the total, spinach one-sixth. Consumption per capita was estimated at 4.2 lb. (about one-tenth of that of canned vegetables), 2% more than in 1951.

Dry Edible Peas and Beans.—The U.S. dry edible bean crop of 1952 was indicated at 16,291,000 bags of 100 lb. each, compared with 17,446,000 bags in 1951 and an average for 1941-50

of 17,997,000 bags. California, as usual, was the leading producer (4,651,000 bags), followed by Michigan (3,630,000 bags) and Idaho (2,183,000 bags). Stocks of old-crop dry beans in commercial storage on Sept. 1, 1952, were 4,601,000 bags, compared with 9,785,000 bags in 1950, the latest comparable date.

The U.S. dry edible pea crop of 1952 was less than half a crop, indicated at 2,697,000 bags (100 lb.), compared with 3,763,000 bags in 1951 and an average for 1941-50 of 6,011,000 bags. U.S. civilian consumption in 1952 of 0.7 lb. per capita was the same as in 1951.

World production of dry beans in 1951-52 was estimated at 115,400,000 bags, about 3% more than in 1950-51. Brazil was the leading producer (27,635,000 bags), followed by China (24,000,000 bags) and the U.S.

World production of dry peas was estimated at 16,800,000 bags in 1951-52, 3% less than the previous year. About 4,412,000 bags of peas entered international trade in 1951, compared with 3,757,000 bags in 1950.

World lentil production in 1951-52 of 5,500,000 bags was 5% less than the previous year and 10% below prewar. Egypt and Turkey were major producers. Dry broad bean and horse bean production in 27 countries in 1951-52 was estimated at 28,000,000 bags, with Italy producing about one-third of the total. China was indicated as producing an additional 64,689,000 bags. (See also CORN; HORTICULTURE; POTATOES.) (J. K. R.)

Velasco Ibarra, José María (1893—), Ecuadorian political leader, was born on March 19 at Quito, Ecuador. He was educated at the University of Quito and at the University of Paris, France. He entered government service and served successively as secretary of the national council of state, attorney general of Quito and president of the national chamber of deputies. He was inaugurated as president of Ecuador on Sept. 1, 1934, but was ousted from the office on Aug. 20, 1935, by an army revolt and was exiled to Colombia. He returned to Ecuador for a brief period in Jan. 1940 to lead an abortive coup d'état against the government, then returned to his Colombian exile for another four years. In 1944 he became a candidate for the presidency again, conducting his campaign from southern Colombia as leader of the antiadministration Alianza Democrática. This time successful, he returned to Quito, took over as provisional president after another uprising, and was proclaimed constitutional president on Aug. 10, 1944. A new constitution was adopted under his administration in 1945 but was suspended the following year, and Velasco Ibarra assumed the role of dictator. On Aug. 23, 1947, he was ousted again by a military coup and again exiled—to Argentina.

In 1952 Velasco Ibarra once more announced his candidacy for president, with the support of the semifascist National Revolutionary party. He returned from Argentina in March and was elected president on June 1, 1952.

Venereal Diseases. Syphilis cases reported totalled 168,000 in the United States in the fiscal year 1952. About 12,000 of this total were cases in the early infectious lesion stage of the disease; 38,000 were cases in the early latent stage; 101,000 in the late and late latent stages; 9,000 congenital cases; and 8,000 cases with stage not stated. In each of these stages the 1952 figure was lower than that for 1951, with late and late latent cases showing the smallest decrease. For the first time in several years, 1952 brought a substantial decline in reported cases of congenital syphilis. A decrease of approximately 28% occurred from the number of congenital cases reported in 1951.

Reported cases of gonorrhoea, numbering 245,000 for 1952,

Table II.—U.S. Production of 11 Vegetables for Processing

Crop	(In tons)		
	Preliminary 1952	1951	Average 1941-50
Asparagus	95,300	107,400	91,800
Beans, lima	90,200	95,200	52,100
Beans, snap	241,300	272,000	219,700
Beets	127,700	152,900	140,000
Cabbage	152,400	174,800	179,100
Corn, sweet	1,510,000	1,197,900	1,175,000
Cucumbers	332,200	275,100	211,600
Peas, green	425,800	512,500	415,500
Pimientos	12,300	15,300	16,900
Spinach	110,000	144,900	108,700
Tomatoes	3,452,000	4,267,100	2,836,700
Eleven Crop Total	6,549,200	7,215,100	5,447,100

were less than the total reported for the preceding year, but the trend of gonorrhoea morbidity had not been so sharply downward as was the case for syphilis.

There were also 3,800 cases of chancroid and about 1,000 cases each of granuloma inguinale and lymphogranuloma venereum reported during the year.

Mortality from Syphilis.—Total mortality from syphilis was estimated at 4.6 per 100,000 population in the calendar year 1951. This was a decrease of 13% from the 1950 rate. The latest data available in 1952, that for 1949, on infant mortality from syphilis showed a rate of 0.08 per 1,000 live births. This represented a reduction of 90% from the 1933 rate, which was 0.79 per 1,000 live births.

Insanity from Syphilis.—The rate of first admissions to all mental hospitals (exclusive of Veterans administration facilities) for psychoses resulting from syphilis decreased from 6.3 per 100,000 population in the calendar year 1938 to 3.1 in 1949. During the same period the first admissions to state mental institutions with psychoses resulting from syphilis decreased from 10.3 to 5.4 per 100 first admissions for all psychoses.

Health Department Activities.—Of the 2,063,000 persons examined in public venereal disease clinics in 1952, 272,000 were admitted for treatment. Staff members of health departments made 422,000 case-finding investigations to identify and bring to examination persons believed to be in danger of having a venereal disease. As a result of these investigations, 46,000 cases of syphilis and 58,000 cases of gonorrhoea were brought to treatment.

Blood testing surveys revealed that syphilis prevalence was still high among certain population groups in both the urban north and in southern areas.

Many health departments were closing their facilities for treating venereal disease on an inpatient basis in 1952. As a result of research activities in developing new, more effective penicillin preparations and in testing their clinical effectiveness, it had become possible to treat most patients without hospitalization. At the close of the year, only 12 rapid-treatment hospitals and 18 bed-contract facilities for inpatient care remained in operation. Because venereal disease is a serious public health problem, however, public facilities continued to be needed for diagnosing and treating the many thousands of cases still occurring. To meet this need, a new kind of venereal disease control facility was introduced in 1952 to provide essential control services on an outpatient basis. Called venereal disease prevention and control centres, these facilities were developing as regional venereal disease clinics, in which full-time diagnostic, treatment and case-finding services were available. For patients coming from distances too great to make clinic visits from their homes, staffs of the new centres arranged domiciliary care. At the close of the fiscal year 1952, 11 centres were operating in 7 states, and the beginning of 1953 was to see initiation of additional centres.

Among the special case-finding programs sponsored or assisted by the U.S. public health service was a blood testing survey of labourers coming into the United States for temporary employment. Of the 11,868 persons tested, 12.8% gave positive reactions.

Increased emphasis was placed during the year upon the joint civilian-military venereal disease control activities. Trained civilian personnel, made available to establishments of the military service, interviewed nearly 20,000 service personnel to discover their civilian contacts. This operation yielded more than 6,000 new cases of syphilis and gonorrhoea. Selectees and volunteers for military service who were suspected of having syphilis following an induction serologic test were investigated by civilian health workers. About 10,000 persons were being

investigated annually in this phase of the civilian-military program. About 30% were new cases of venereal disease, brought to treatment for the first time. An additional 10% were inadequately treated cases returned to therapy. (See also WORLD HEALTH ORGANIZATION.)

See Federal Security Agency, *Annual Report* (1952).

(T. J. B.)

Venezuela. A federal republic of 20 states, two territories, a federal district and a number of small islands (with less than 1,000 pop. in all) on the north coast of South America, Venezuela has an area of 352,143 sq.mi. Pop. (census of Nov. 1950) 4,986,000, not including indigenous tribes not living in towns; Caracas is the federal capital, pop. 487,000 (662,000 in the metropolitan area). Other cities include Maracaibo, 232,000; Barquisimeto, 105,000; Valencia, 88,000; Maracay, 66,000; San Cristóbal, 56,000; Cumaná, 46,000; Puerto Cabello, 34,000; Ciudad Bolívar, 36,000; Puerto La Cruz, 28,000. The junta of government, as constituted on Nov. 27, 1950, continued to function in 1952 as the federal executive, consisting of Germán Suárez Flámerich, president, and Marcos Pérez Jiménez and Luis Llovera Páez, members, with Pedro Moreno as secretary.

History.—In Aug. 1952 the important trade negotiations between Venezuela and the United States begun in 1950 were concluded. The United States agreed to lower the duty on Venezuelan oil, within the terms of the Trade Agreements act. The quota was removed. The tariff rate was cut to 5½ cents per barrel on heavy oil with a rating of less than 25°, according to the standard set by the American Petroleum institute. Oil of a rating higher than 25° would pay 10½ cents per barrel. Venezuela made a number of rate reductions. Iron ore from Venezuela, actively exported since 1950, likewise remained on the free list of the United States.

Negotiations looking to trade agreements with other nations were expected to take place during 1952–53. Trade missions from Belgium and other countries visited Caracas.

The definition of the Venezuelan-Brazilian frontier proceeded in consequence of the final ascertainment of the headwaters of



OIL DERRICKS on the shores of Lake Maracaibo, Venezuela. Although Venezuela was the largest oil-producing nation in South America in 1952, much of its possible oil lands were still untested

the Orinoco.

The electoral commission fixed the election of a constituent assembly for Nov. 30.

The deepening of the Orinoco main channel as well as the channel into Lake Maracaibo, calculated to assure the interior development of the republic, got under way in 1952. The Central university in Caracas was not reopened in 1952. The universities of the Andes (Mérida) and Zulía (Maracaibo) functioned throughout the school year.

(C. E. Mc.)

Education.—In 1949-50 there were 5,977 public primary schools with 491,799 pupils enrolled. In Jan. 1952 secondary and special schools, public and private, numbered 175 with 32,548 students and 2,407 teachers; the 42 normal schools had 3,005 students and 400 teachers. In 1950-51 the Central university had 4,747 students matriculated, Los Andes 866, Zulía 840 and the Instituto Pedagógico 448. Education was allotted 6.3% of the 1952-53 budget.

Finance.—The monetary unit is the bolívar, valued at \$0.2985 U.S. currency, controlled and free selling rates, during 1952. Actual government expenditure in the fiscal year ending June 30, 1951, was 2,134,447,903 bolívares; revenue, 2,111,643,301 bolívares. The 1952-53 budget was balanced initially at 2,300,000,000 bolívares (1951-52: 1,951,000,000 bolívares). The treasury balance was only 101,652,975 bolívares on Nov. 30, 1951. There was no external debt; the total government and government-guaranteed debt amounted to 144,121,431 bolívares on Dec. 31, 1951, of which 14,737,131 bolívares represented direct government obligations. Currency in circulation (Aug. 31, 1952) was 772,000,000 bolívares; gold reserves \$373,000,000; demand deposits 914,000,000 bolívares; dollar exchange in U.S. banks \$108,000,000. The retail food price index (Caracas) stood at 134 in June 1952 (1948=100).

Trade and Communications.—Exports in 1951 totalled 4,533,660,335 bolívares; imports 2,150,252,223 bolívares. Chief exports were crude petroleum and petroleum products (96%), coffee (1%) and cacao (1%); leading imports, machinery and equipment (29%), foodstuffs and beverages (19%) and metals and manufactures (17%). Commercial imports comprised 73.5% of imports, government imports 8.2%, petroleum company imports 17.2% and mining company imports .3%. Leading suppliers were the U.S. (68%), the United Kingdom (7%), Canada (4%) and Germany (4%); leading customers, the Netherlands Antilles and the U.S.

Railways (1950) totalled 700 mi.; highways, 3,750 mi. of all-weather roads and 1,600 mi. of unimproved dry-weather roads. According to *Lloyd's Register of Shipping* the merchant marine had 97 steamers and motor ships (100 tons and more) aggregating 166,562 gross tons on June 30, 1951.

Agriculture.—Coffee production in the 1951-52 crop year totalled 721,569 bags of 132 lb. each. In 1951, 313,550 bags of coffee and 15,500 short tons of cacao were exported. Sugar production in 1951 was 49,791 tons. The 1950 census (preliminary figures) showed 5,359,654 cattle and 1,292,808 pigs.

Manufactures.—Production in 1951 included cement 685,070 short tons; soap 16,033 tons; cigarettes 2,043,460,000 units; beer 107,396,000 l.; electrical energy 617,727,000 kw.hr.; natural gas 19,113,183,000 cu.m.

Mineral Production.—Production of crude petroleum by the 13 companies in operation in 1951 reached the record figure of 622,194,695 bbl., of which Creole accounted for 45% and Shell 31%. Refinery throughput was 113,800,000 bbl. (1950: 90,099,847 bbl.) and exports of refined products increased to 84,700,000 bbl. (1950: 67,222,878 bbl.). Diamond production in 1951 totalled 63,745 carats; gold production dropped sharply to 2,860 troy ounces. Bethlehem Steel's Venezuelan subsidiary mined 1,241,150 short tons of iron ore during 1951. (J. W. Mw.)

Vermont. A north Atlantic state of the United States of America, the only one of the New England states without a sea coast, Vermont is popularly known as the "Green Mountain state"; it was admitted to the union in 1791. Area: 9,609 sq.mi., of which 331 sq.mi. are water. Population (1950) 377,747 (including 240,135 rural, 137,612 urban; 348,435 native white, 443 Negro, 28,753 foreign born). The U.S. bureau of the census estimated the population of the state to be 373,000 on July 1, 1951. Montpelier is the capital city with a population (1950 census) of 8,599. The chief cities are Burlington (33,155) and Rutland (17,659).

History.—The general assembly did not meet in 1952.

The Vermont Free Public Library commission was one of six areas in the United States chosen by the American Library association in 1951 for an American Heritage project, made possible by a grant of \$150,000 to the American Library association by the Fund for Adult Education. The purpose of the project is the promotion and demonstration of adult community discussion programs through local public libraries on the American heritage and its contemporary application. Vermont was again chosen as one of the areas for the program in 1952.

The Greater Vermont association, replacing the former Ver-



SKIERS around the traditional evening fire at a lodge in Manchester, Vt., where the local population was often doubled on weekends during the skiing season between December and March

mont chamber of commerce, designed to co-ordinate the activities of all the regional development associations in the state and supplement the work of the Vermont Development commission, was organized Dec. 15, 1950. Plans of the association were advanced in 1952 with 1,042 business members and the securing of a full-time manager. As of Oct. 16, 1952, the association had spent \$54,850 for promotion of Vermont.

The chief officers of the state during 1952 were: Lee E. Emerson, governor; Joseph B. Johnson, lieutenant governor; George H. Amidon, state treasurer; Howard E. Armstrong, secretary of state; David V. Anderson, auditor of accounts; Clifton G. Parker, attorney general.

Education.—The 730 elementary schools in the state in 1951-52 had an enrolment of 47,845 and a teaching staff of 1,898. There were 76 public high schools, with an enrolment of 16,553 and a teaching staff of 748. The total current expense for public schools (before audit) was \$12,405,322.05, of which the state paid \$2,741,888.17 (22.1%). The state superintendent of schools was the commissioner of education, A. John Holden.

Social Insurance and Assistance, Public Welfare and Related Programs.—Relief in general was administered by the overseer of the poor in each town. An average number of 6,963 persons a month received old-age assistance from state funds amounting to \$3,279,175 during the year ended June 30, 1952. Aid to dependent children amounting to \$654,648 was distributed to an average number of 3,540 individuals monthly. A total of \$92,219 blind assistance was distributed to about 178 persons a month. Aid to the permanently and totally disabled amounted to \$93,632, paid to about 190 persons a month.

Unemployment compensation payments made under the Vermont law numbered 102,087 and amounted to \$2,064,836 for the year ended June 30, 1952. The three state correctional institutions during the year ended June 30, 1952, had an average of 436 inmates; their total expenses were \$593,290.

Communications.—The total mileage of the public highway system (state, state-aid and town highways) as of June 30, 1952, was 13,677.5 of which 1,822.1 mi. were in the state system and 2,773.5 mi. were in the state-aid system. Total expenditures during the fiscal year ended June 30, 1952, amounted to \$10,128,132.47, of which \$6,841,582.02 was for state highways (including all expenditures for federal aid construction, some of which was located on the state-aid highway system) and \$1,707,614.15 for state-aid highways. There were 942.87 mi. of railways in the state in the year ended Dec. 31, 1951; airports in the state in 1952 numbered 20, seaplane landing areas 2 and airways 2, with a total mileage of 144. Telephone subscribers numbered 80,001 on Dec. 31, 1951.

Banking and Finance.—The number of state and national banks as of June 30, 1952, was 77 of which 38 were state banks with total deposits of \$222,303,314.67 and assets of \$248,186,110.92. The eight co-operative building, savings and loan associations had total assets of \$4,602,288.79. Total receipts of the state as of June 30, 1952, were \$43,282,666.52;

Table I.—Principal Crops of Vermont

Crop	Indicated 1952	1951	Average 1941-50
Corn, all, bu.	2,816,000	2,788,000	2,565,000
Hay, all, tons	1,383,000	1,341,000	1,351,000
Oats, bu.	1,178,000	1,476,000	1,334,000
Potatoes, late, bu.	758,000	738,000	1,405,000
Apples, commercial, bu.	738,000	1,080,000	748,000
Maple syrup, gal.	632,000	733,000	831,000

Table II.—Principal Manufacturing and Processing Industries of Vermont

Industry	Value of products 1950	1949
Machines, machine tools and allied industries	\$60,780,700	\$63,061,400
Woolen, cotton and knit goods	47,606,280	51,571,000
Woodworking, furniture and lumber, etc.	41,070,720	36,906,150
Granite, marble and other stone industries	28,271,610	26,531,000
Paper and paper products	27,963,600	26,435,650
Dairy products	17,115,000	16,500,000

disbursements \$38,697,840.59; unappropriated surplus \$4,870,997.85; obligations outstanding \$4,999,000.00.

Agriculture.—According to the U.S. bureau of agriculture, the major cause of a falling off in production of commercial apples in 1952 was poor pollination resulting from weather conditions unfavourable to bees. Weather conditions were also unfavourable for the production of maple sugar and syrup. A crop of 130,000 turkeys was indicated in comparison with 133,000 in 1951.

Manufacturing.—The Vermont unemployment compensation commission estimated that an average of 38,865 workers were employed in manufacturing industries in the state during the year ended June 30, 1952.

(C. E. Fe.)

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in Vermont in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Vermont ranks 1st among the states in the production of asbestos and 2nd in slate, and stands 39th in value of mineral output, with 0.16% of the U.S. total.

Table III.—Mineral Production of Vermont

Mineral	(In short tons)			
	1950	1949	1950	1949
Line	33,000	29,000	\$416,000	\$356,000
Sand and gravel.	1,041,000	1,582,000	662,000	729,000
Slate	239,000	184,000	4,472,000	3,624,000
Stone	447,000	442,000	8,039,000	8,276,000
Talc	72,000	65,000	906,000	788,000
Other minerals. . . . .	...	...	4,068,000	3,611,000
Total			\$18,563,000	\$17,384,000

Veterans Administration (U.S.). By the end of 1952, veterans and their families made up one-third of the population of the United States. Veterans of all wars numbered more than 19,000,000, of whom 80% served in World War II. More than 1,000,000 had been in uniform since the outbreak of hostilities in Korea in June 1950.

A number of new laws had been enacted providing benefits for the young group of veterans. They included a program of vocational rehabilitation, a new insurance law and a law placing veterans of the Korean conflict on the same basis as other war veterans for purposes of VA medical care and compensation and pensions. Then, in July 1952, came the latest—and probably most far-reaching—of all: a new G.I. bill containing five separate benefits.

Medical and Hospital Benefits.—By Aug. 1, 1952, the VA was operating a network of more than 150 hospitals for the treatment of ill and disabled veterans. It also was utilizing beds in civil, state and other federal hospitals on a contract or agreement basis. At that time, a total of 106,000 veterans were receiving hospital care from the VA. Included were 3,000 with service since the start of hostilities in Korea.

A \$750,000,000 VA hospital construction program was under way and was expected to result in 66 modern new hospitals with a total of 37,000 beds. By Aug. 1, 1952, 44 of these hospitals had been completed.

Korean G.I. Bill.—The new G.I. bill, enacted for veterans who served since the outbreak of hostilities in Korea, includes five benefits, all designed to assist them in their return to civilian life. Included are education and training; guaranteed or insured loans for homes, farms and businesses; unemployment compensation; mustering-out pay; and job-finding help.

Under the educational provisions, a veteran may get one and

one-half days of education or training for each day spent in service since the start of the conflict in Korea. The maximum is 36 months for veterans who had not taken training under the earlier programs for World War II veterans.

While in training, a veteran who served since the start of hostilities in Korea may receive an allowance each month from the government to cover part of his expenses and living costs. All his costs—tuition, fees, books and the like—must come out of the allowance. Rates for veterans in full-time training in school are \$110 a month, if they have no dependents; \$135 if they have one dependent; and \$160 if they have more than one dependent. Rates for on-the-job and on-the-farm trainees are lower. The law's G.I. loan provisions permit veterans who served since the start of the Korean conflict to obtain government-guaranteed or insured loans for homes, farms and businesses on the same basis as veterans of World War II.

Vocational Training for the Disabled.—Vocational rehabilitation is available to veterans of World War II as well as those disabled after fighting started in Korea. Eligible veterans may train in schools, on the job or on the farm. While in training, and for two months afterward, they may receive subsistence allowances from the government in addition to their disability compensation. The government also pays for all training costs, such as tuition and supplies.

By Aug. 1, 1952, nearly 600,000 disabled veterans had taken training, at one time or another, under the program. Nearly half had completed their training and were declared rehabilitated. On that date 34,000 World War II veterans were still in training, along with nearly 900 veterans disabled since fighting started in Korea.

Compensation and Pensions.—Veterans with service-connected disabilities resulting from either wartime or peacetime service may qualify for monthly compensation payments from the VA. Wartime rates, paid also to veterans disabled since the start of fighting in Korea, range from \$15.75 to \$172.50. Additional statutory awards are payable to veterans with certain serious disabilities. Peacetime rates are 80% of the wartime scale.

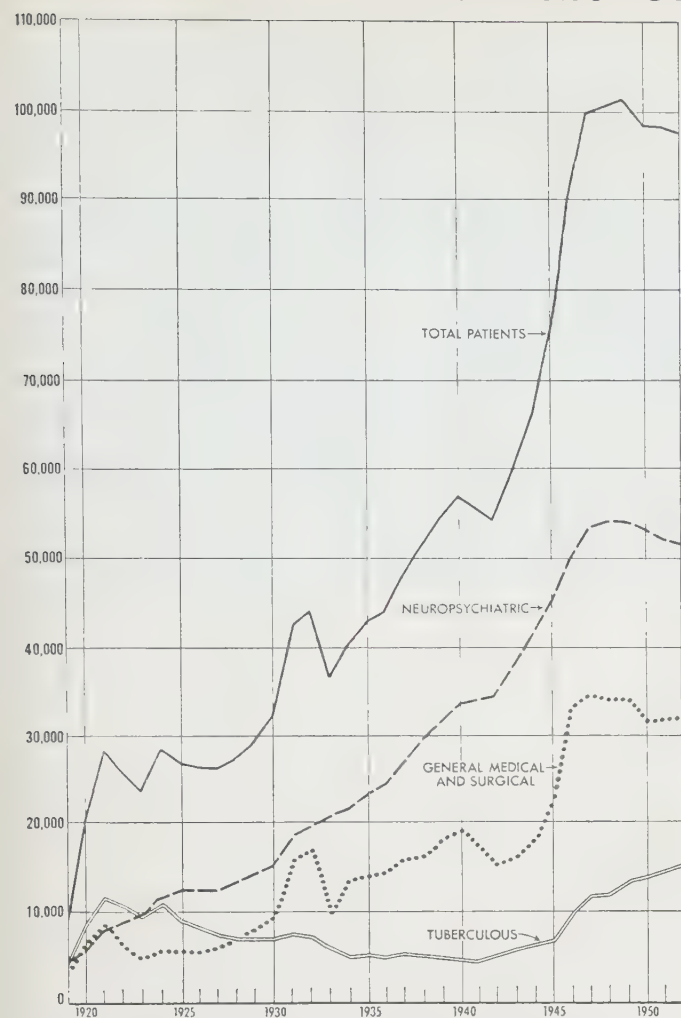
Pensions may go to veterans of either World War I or II, and to those who served during the period after the start of fighting in Korea, who (1) are permanently and totally disabled for reasons not traceable to service, and (2) whose annual income does not exceed \$1,400 if single or \$2,700 if married or with a minor child. Rates are \$63 a month, increased to \$75 after ten years or when the veteran reaches age 65.

On Aug. 1, 1952, more than 2,400,000 veterans were on VA's pension and compensation rolls. Included were two who had Civil War service and 15,000 who were disabled after the Korean conflict started.

Insurance.—VA administers three systems of insurance: U.S. Government life, for World War I veterans; National Service life, for World War II veterans; and the Indemnity and Insurance acts of 1951, for those with service after the start of the Korean conflict.

Under the 1951 insurance law, those in active service since the Korean fighting began, and certain other groups, are automatically covered, without cost, against death in active service for \$10,000, less any other government insurance they might have had at that time. The free indemnity coverage lasts for 120 days after separation from service for those ordered to active duty for more than 30 days.

Through Aug. 1, 1952, the VA had allowed nearly 9,000 indemnity claims from the families of deceased servicemen. Also at that time, more than 3,000 veterans with service after the start of the Korean conflict were holding the new forms of insurance. The number of National Service life insurance policies in force for World War II veterans was 7,000,000, having a



NUMBER OF PATIENTS remaining in VA and non-VA hospitals on Dec. 31 from 1919 to 1952 by types of disability, as compiled by the Veterans administration

total value of \$49,000,000,000. Also, 449,000 U.S. Government life insurance policies were in force for World War I veterans, totalling nearly \$2,000,000,000.

World War II G.I. Bill.—Of the three major provisions of the original G.I. bill for World War II veterans, one was still in force during 1952; one had passed the cutoff point and the third had expired.

Under the G.I. loan program, which had nearly five more years to run, a total of 3,000,000 World War II veterans had obtained loans valued at \$18,600,000,000 by Aug. 1, 1952. Under the G.I. education and training program—which passed its cutoff point in July 1951—a total of 7,700,000 World War II veterans had taken training. This figure represented more than half of all who served during World War II. The third benefit, readjustment allowances for unemployed and self-employed veterans, ended for most in 1949. Nearly 9,000,000 veterans had received allowances in the amount of \$3,800,000,000.

Other Benefits.—In addition to these, VA administers a number of other benefits for veterans and their dependents. Among them are programs providing cars for the seriously disabled; housing grants for other disabled veterans; and numerous other benefits. (See also BUDGET, NATIONAL; MEDICAL REHABILITATION OF THE DISABLED; TUBERCULOSIS.) (C. R. GY.)

Veterans' Organizations. United States.—In 1952, membership in veterans' organizations generally followed the decline apparent since 1948. The five major organizations had combined memberships total-

ling somewhat less than 4,200,000.

All organizations won at least one issue for which they had worked since the conventions of 1950 when the federal government enacted a G.I. Bill of Rights for Korean war veterans. The new law was largely modelled after the G.I. Bill for World War II veterans. (See VETERANS ADMINISTRATION.)

American Legion.—Membership in the American Legion, largest veterans' organization, fell to 2,700,000 in 1952, a decline of about 100,000 since 1951. At its convention in New York city, Lewis Gough of California was elected national commander to replace Donald Wilson of West Virginia. Both Republican and Democratic candidates for president of the United States addressed the convention which avoided any display of political partisanship. The Legion again stated its opposition to the far eastern policy of the state department and its support of universal military training, and expressed its concern with subversive activity in the United States.

Veterans of Foreign Wars.—The 53rd annual encampment of the V.F.W., held in Los Angeles, gathered only 10,000 members, instead of an anticipated 50,000. The encampment attendance was only one symptom of the problems of the nation's second largest veterans' organization, which had a decline, in 1952, of 97,000 members to reach a low of 1,000,310. The featured speaker of the encampment was Dwight Eisenhower, then a presidential candidate. James Cothran, of South Carolina, succeeded Frank Hilton as commander in chief. The outgoing commander attempted to solve the problems of the group by calling for a long-term national planning committee to guide the V.F.W. internally, to help it plan a worthwhile program for the future.

Disabled American Veterans.—The Disabled American Veterans increased its membership to 170,000 in 1952, an increase of 45,000. Floyd L. Ming of California was elected to succeed National Commander Ewing W. Mays of Arkansas at the 31st national convention held in Boston. The D.A.V. continued to function as a one-purpose organization devoted to the war disabled. Its convention shunned political controversy and concentrated solely on veterans' issues, among them the need for an increase in disability compensations.

American Veterans of World War II (Amvets).—The largest of organizations for veterans of World War II, the Amvets increased its membership in 1952 to 85,000—an increase of 10,000 from 1951 and near its peak of 90,000 in 1948. The national convention, held in Grand Rapids, Mich., elected Marshall Miller of Illinois to replace John Smith of Ohio as national commander. The organization had developed a cash reserve and also furnished funds to support a war orphans scholarship fund, an Arlington Memorial Carillon fund and other public services.

American Veterans' Committee.—The American Veterans' committee, also a World War II group, continued its membership decline to 10,000—its peak year had been 1947 when it had 80,000 members. With only about 35 active, stable chapters, the A.V.C. held its sixth annual convention in Washington, D.C., and elected Curtis Campaigne, Jr., to replace Michael Straight as national chairman. In 1952 he sought to revitalize the A.V.C. by calling for a consistent emphasis on issues of civil rights and civil liberties.

World Veterans Federation.—The World Veterans federation continued its rapid growth in 1952 when five major British groups, representing 700,000 veterans, joined the new international agency dedicated to "the maintenance of peace with freedom." By the close of the year, the World Veterans federation had more than 19,000,000 members from 94 veterans organizations in 16 countries, including France, Italy, Luxembourg, the Netherlands, Belgium, Yugoslavia, Norway, Israel, Denmark, Greece, Turkey, Finland, the Philippines, Canada, Great Britain and the United States. U.S. veterans' organizations participating

were the American Veterans of World War II, Disabled American Veterans, American Veterans' committee and the Blinded Veterans association. (Mo. Pr.)

Canada.—The 14th convention held by the Canadian Legion was marked by a series of resolutions demanding government action on such things as compulsory military training, larger pensions, and more complete rehabilitation and improved hospital treatment for war veterans. The convention delegates, numbering more than 1,100 and representing more than 300,000 members, also backed a call for a royal commission of inquiry into the setup of the three reserve forces, and a demand for better screening of immigrants.

The National Council of Veterans associations, an alliance of five former servicemen's groups, backed the Canadian Legion's demand for higher veterans' allowances. The alliance also pleaded for higher clothing allowances for amputees, and argued that any unemployable war pensioner should be entitled to the war veterans' allowance in addition to his pension.

The Canadian Corps association in its annual meeting suggested a three-point program to step up civil defense, including the adoption and finalization of a joint federal, provincial and municipal policy for "the organization, financing, equipping, training and development of civil defense." The association also decided to ask the federal government to increase the permissible casual earnings of veterans receiving allowances, because the high cost of living was imposing hardships under the existing \$120 annual ceiling. (C. Cv.)

Veterinary Medicine. During 1952 the last two of the new colleges of veterinary medicine in the United States were approved by the council on education of the American Veterinary Medical association and also graduated their first classes. There were then 17 state-supported veterinary schools in the country, 7 of which had been established after World War II. Each of these schools required six years of collegiate training. Including the 2 schools in Canada, 19 schools graduated more than 900 veterinarians in 1952, the largest number for any year since 1918.

Because of the importance to the nation of animal food products, plans were being made for the quick identification, reporting and control of unusual or highly contagious diseases of livestock. Under the leadership of the Federal Civil Defense administration and United States department of agriculture public health officials, federal and state veterinary officials and veterinary associations were co-operating in setting up a nationwide protective organization.

Rabies.—Rabies continued to appear in new territories, spread by dogs and by wild animals such as foxes and skunks. Thousands of cattle died from the disease and hundreds of people were exposed by rabid animals. The disease can be controlled in dogs by systematic vaccinating, but wild animal vectors have to be greatly thinned out either by the disease or by systematic trapping before rabies can be exterminated in an area. New biological agents for controlling rabies included an improved vaccine for animals and a serum which it was thought might provide a protection for a man. The serum acted more quickly and was safer than the Pasteur treatment.

Anthrax.—Most animals including man are susceptible to anthrax but swine are much less so than cattle and sheep. However, late in 1951 and well into 1952 this disease occurred sporadically in swine in many states. The source proved to be spores, a resistant form of the anthrax germ, which were found in imported bone meal used in hog feed. Hundreds of cattle were also affected. Quick treatment with antibiotics and serum and strict quarantine measures prevented the spread of the disease and possible heavy losses.

Foot-and-Mouth Disease.—Both Mexico and Canada succeeded in eradicating foot-and-mouth disease during 1952. This extremely contagious but seldom fatal disease was very prevalent in Europe and South America where attempts were made to control it by vaccination but not by eradication. It therefore was a constant threat to all other areas and required constant vigilance on the part of the inspection and quarantine division of the bureau of animal industry. The six-year eradication campaign in Mexico cost a total of \$85,000,000. The Mexican border was reopened in September for the importation of cattle.

The Canadian outbreak was diagnosed in February near Regina, Sask., about 100 mi. from the North Dakota border. Hundreds of diseased and exposed animals were destroyed and buried and the disease was declared eradicated in August. It had not occurred in the United States since 1929.

Plum Island, off the tip of Long Island, N.Y., was selected as the site for a laboratory for extensive research on foot-and-mouth disease and other virus diseases.

Vesicular Exanthema.—Vesicular exanthema, which affects swine only, suddenly spread from coast to coast in June 1952. It is very contagious but unless secondary infections occur the lesions, which appear on the snout, mouth and feet, usually heal in a few days. It is spread chiefly through feeding uncooked garbage that contains infected pork scraps, or by sick animals. Because the symptoms closely resemble those of the more dangerous foot-and-mouth disease, expensive and time-consuming tests must be made on each new diagnosis. Therefore, the secretary of the department of agriculture on Aug. 1 declared a national emergency so that an eradication program could be put into operation. By November the disease had occurred in 29 states and had been eradicated in 19 of them.

Scrapie of Sheep.—On Oct. 31 the secretary of the United States department of agriculture again declared a national emergency because scrapie, a slow-developing, fatal virus disease of sheep, had been diagnosed in California. Known in Europe for more than 200 years, this was its first appearance in the United States. It had occurred in Canada in 1945, 1951 and also in 1952. The virus affects nerve cells, causing itching, trembling, incoordination and finally death. There is no known treatment.

Leptospirosis.—Leptospirosis had been recognized in dogs and occasionally in men on the North American continent for about 15 years. It had also been diagnosed in cattle, mostly dairy cows and calves, for about eight years. However, in the past year or two it had been recognized in many animals—all types of cattle, horses, swine and sheep—in many states. It is caused by a germ, a member of the spirochete family which may kill quickly but more often causes chronic illness. The disease symptoms vary considerably with the species from abortion to inflammation of the eyes. Recovered animals may remain spreaders by eliminating *Leptospira* in their urine for long periods. Treatment of the disease was not very satisfactory except in dogs but research on the development of a vaccine was progressing.

Hog Cholera.—The greatly increased swine industry of the past 40 years was made possible by the successful development of serum and virus vaccination against cholera. This disease, which affects only hogs, is very contagious and about 97% fatal. In spite of the marked efficiency of the vaccination method, the living virus when carelessly used often initiated the very disease it was attempting to control. After many years of research vaccines which were fairly effective, yet which could not produce cholera, were developed.

The chief sources of hog cholera are: sick hogs, vaccination virus and virus in refrigerated pork from hogs in the early, undetected stages of the disease. Scraps of such pork are often contained in garbage. To eradicate vesicular exanthema an at-



CANADIAN RANCHER, on the ranges near Calgary, Alta., roping a calf which he wanted to inoculate

tempt was being made to have all garbage cooked before it was fed to hogs. If this were done, it would also eliminate one source of hog cholera. With nonvirulent cholera vaccines available to replace virulent virus, and with virus-containing garbage eliminated, it was hoped that the eventual eradication of hog cholera would be possible.

Chronic Poisoning of Cattle.—Progress was made, during 1952, in establishing the exact cause of two poison diseases of cattle.

(1) Hyperkeratosis (X disease), a chronic disease of cattle, was known to be caused by highly chlorinated naphthalenes, hydrocarbons which are often added to lubricating oils so they will stand more pressure. Taken by mouth or absorbed through the skin, the toxin, unless halted early, is fatal. Calves nursing a poisoned cow may be affected. Many cattle were poisoned in 1952 by feeds which somehow became contaminated with this chemical.

(2) Trichloroethylene extracted soybean meal was finally proven to be the cause of a fatal slow-developing aplastic anaemia in cattle. The exact poisonous agent had not been determined. Not more than 1% of all soybean meal was made by this method and it had been discontinued. Hundreds of cattle had died from this poison since 1948, and horses and sheep had also been experimentally poisoned.

A plant poisoning in cattle, induced by eating bracken ferns which grow in various parts of the country, causes a similar slow-developing fatal anaemia. Here again the exact poisonous agent had not been determined. A similar poisoning had been caused in human patients by the antibiotic chloramphenicol.

American Veterinary Medical Association.—The American Veterinary Medical association held its 89th annual meeting at Atlantic City, N.J., June 22 to 26, 1952. The registered attendance was 2,613. (W. A. A.)

Vietnam: see INDOCHINA.

Virginia. One of the 13 original states of the United States, Virginia was admitted to the union June 26, 1788; it is known as the "Old Dominion" and as the "Mother of Presidents." Southernmost among the middle Atlantic states, Virginia has an area of 40,815 sq.mi., including 922 sq.mi. of water. Pop. (1950) 3,318,680, compared with 2,677,773 in 1940. Principal urban areas include the capital, Richmond (230,310 in

1950), Norfolk (213,513), Arlington county (135,449), Roanoke (91,921) and Portsmouth (80,039).

History.—The general assembly convened for its regular biennial session in Jan. 1952. A record 1,273 bills were introduced, of which 715 were enacted into law. The assembly appropriated an additional \$30,000,000 in state funds for local school construction, bringing to \$75,000,000 the amount thus made available for a four-year period. A surplus in the unemployment compensation fund permitted an increase in compensation benefits, with an accompanying reduction in the tax rate. Laws governing highway safety were amended to provide more severe penalties, including mandatory jail sentences, under certain circumstances, on reckless drivers. Local welfare rolls were ordered to be opened to public inspection. State employees were brought under the federal social security system. Other laws were passed to check the Ku Klux Klan, to punish the bribery of athletes, to compel disclosure by state institutions of expenditures for their athletic programs, and to let women serve on grand juries. A greatly expanded program of state promotion was approved for the port of Hampton Roads. The assembly failed, however, to comply with a mandate of the state constitution requiring a redistricting of the 140 seats in the assembly, and an extra session of the assembly was summoned to fulfill this requirement in December. John Stewart Battle served as governor throughout the year. Lieut. Gov. L. Preston Collins died in September, and was succeeded in office by A. E. S. Stephens. J. Lindsay Almond, Jr., was attorney general.

Education.—In 1951-52 elementary school enrolment was 482,001, with a teaching staff of 13,374; secondary school enrolment was 156,766, with a teaching staff of 5,940. The teaching staff also included 1,323 instructors in vocational education and 2,363 principals, head teachers and supervisors. D. J. Howard was state superintendent of public instruction.

Social Insurance and Assistance, Public Welfare and Related Programs.—For the year ended June 30, 1952, 7,992 persons received \$858,469 in general relief; 22,709 received \$5,204,945 in old-age assistance; 11,390 families with 32,200 dependent children \$4,864,170; 6,160 under the foster care program \$1,082,972; 3,990 totally and permanently disabled \$1,084,572; and 1,716 blind \$552,346. From January through September 1952, 307,325 checks representing 354,197 weekly payments were written for civilian unemployment compensation, amounting to \$6,020,902. This was more than was paid out in all of 1951, but the increase was accounted for largely by an increase in the benefit rate. Between Jan. 1 and July 18, when the program was closed, 101 checks representing 173 payments for war veterans' readjustment allowances were written for \$3,410.

The average daily population of 6 penal institutions for adults was 5,575, and of 4 industrial schools for juveniles was 617, at the end of the fiscal year in June 1952.

Communications.—On July 31, 1952, there were 8,882 mi. of highway in the state's primary system, and 39,650 mi. in the secondary system. During the year ended June 30, 1952, the state spent \$74,867,828 on its highways, 14% more than the previous year's expenditures. The total railroad mileage was 4,126.37 on Jan. 1, 1952. There were 778,342 telephones in Virginia on Aug. 31, 1952.

Banking and Finance.—On June 30, 1952, Virginia had 183 state banks

Table I.—Principal Crops of Virginia

Crop	Indicated 1952	1951	Average 1941-50
Corn, bu.	33,880,000	41,624,000	38,113,000
Wheat, bu.	7,766,000	7,497,000	7,661,000
Oats, bu.	5,066,000	4,818,000	3,717,000
Rye, bu.	255,000	276,000	412,000
Barley, bu.	2,618,000	2,624,000	2,260,000
Tobacco, all types, lb.	183,995,000	176,788,000	138,489,000
Peanuts, lb.	179,950,000	236,800,000	188,724,000
Hay, all tame, tons	1,645,000	1,641,000	1,552,000
Apples, commercial, bu.	10,101,000	9,560,000	9,486,000
Peaches, bu.	1,909,000	1,771,000	1,458,000
Cotton, lint, bales	15,000	14,000	21,000
Potatoes, bu.	4,644,000	6,882,000	8,352,000
Sweet potatoes, bu.	2,040,000	2,210,000	2,763,000
Soybeans for beans, bu.	2,822,000	2,988,000	1,554,000

Source: U.S. Department of Agriculture.

Table II.—Principal Industries of Virginia

Industry	1951	1950
Tobacco manufactures	\$1,015,895,000	\$858,172,000
Chemical and allied products	898,683,000	568,139,000
Textile mill products	466,599,000	445,716,000
Food and kindred products	467,979,000	422,456,000
Paper and allied products	198,948,000	148,218,000
Transportation equipment	198,883,000	207,485,000
Lumber and wood products	228,445,000	207,951,000
Furniture and fixtures	136,640,000	129,993,000
Wearing apparel	118,314,000	110,481,000
Fabricated metals	80,226,000	71,592,000
Stone, clay and glass products	67,362,000	54,192,000
Printing and publishing	61,804,000	55,133,000

with 71 branches and 133 national banks with 10 branches. On June 30, 1952, deposits in national banks were \$1,252,437,000 and assets \$1,359,820,000. On June 30, 1952, deposits in state banks totalled \$908,289,428 and assets \$993,909,048. Resources on Dec. 31, 1951, of 16 industrial loan associations were \$14,004,753; of 49 building and loan associations \$67,999,047; of 32 credit unions \$2,752,182.

For the fiscal year ended June 30, 1952, the state treasurer received revenues of \$359,010,010, about 5.9% more than in the previous year; expenditures were \$362,033,045. The gross debt on June 30 was \$12,009,431; a sinking fund of \$8,336,271 left a net debt of \$3,673,159. The fiscal year ended with a cash general fund surplus of \$55,705,899, plus an invested surplus of \$10,754,800.

Agriculture.—For the second consecutive year, Virginia crops suffered from a severe drought in July and August; the damage was especially severe to the corn crop, which dropped to its lowest point in eight years. Peanuts also were affected seriously, and potato production fell to an abnormally low point. Late rains, however, permitted other crops to make an amazing recovery, with the result that tobacco production surpassed all records. It also was a record year for cattle on Virginia farms; beef animals were estimated at 1,269,000 head. The state's turkey crop increased 60% over the preceding year, to put Virginia in second place in the nation for turkey production, surpassed only by California. The total value of crops, including cash sales, produce consumed on farms, and government payments, was expected to surpass the record \$601,000,000 of 1951.

Manufacturing.—The value of products manufactured in Virginia was estimated by the state department of labour and industry, on the basis of reports from 2,100 plants, at \$4,103,478,000 in the year ended Dec. 31, 1951, compared with \$3,426,847,000 in the preceding year. The number of persons engaged in manufacturing activities for the year 1951 was placed at 242,200; they were paid \$694,221,000, of which \$548,045,000 went to 208,900 production workers and \$146,176,000 to the 31,300 salaried and supervisory employees.

Mineral Production.—Table III shows the tonnage and value of those mineral commodities produced in Virginia in 1949 and 1950, whose value exceeded \$100,000. Data for 1951 were not yet available. Virginia ranked 2nd among the states in the production of pyrite, and stood 21st in the value of mineral production, with 1.16% of the U.S. total.

Table III.—Mineral Production of Virginia

Mineral	(In short tons)			
	1950	Value	1949	Value
Clays	546,000	\$ 520,000	449,000	\$ 404,000
Coal	17,667,000	96,965,000	15,584,000	82,367,000
Coke*	198,000	2,931,000	158,000	2,300,000
Feldspar	30,000	188,000	38,000	234,000
Lead	3,000	878,000	3,000	1,047,000
Lime	428,000	3,862,000	349,000	3,214,000
Sand and gravel	4,374,000	4,145,000	4,413,000	4,049,000
Stone	9,273,000	16,435,000	7,510,000	12,443,000
Zinc	12,000	3,520,000	13,000	3,265,000
Other minerals		11,293,000		9,385,000
Total		\$137,806,000		\$116,408,000

*Values for processed materials are not included in the totals.

Virgin Islands. The Virgin Islands have the status of an organized but unincorporated territory of the United States, located 1,400 mi. S.E. of New York city and 40 mi. E. of Puerto Rico. The three largest islands, with a total area of 133 sq.mi., are St. Croix (pop. 12,103, census of 1950), St. Thomas (13,813) and St. John (749). The chief cities are Charlotte Amalie, the capital (11,469), on St. Thomas and Christiansted (4,112) and Frederiksted (1,961) on St. Croix.

Morris F. de Castro was inaugurated as governor on March 24,

1950. He was the first Virgin Islander to hold the position.

History.—The Knud-Hansen Memorial hospital (116 beds) at Charlotte Amalie and the Charles Harwood Memorial hospital (60 beds) at Christiansted were under construction during 1952, along with a 12-bed clinic and public health facility at Frederiksted and a 4-bed public health facility at Cruz Bay, St. John. United States Assistant Secretary of the Interior Robert Rose participated in the cornerstone ceremonies at Charlotte Amalie and Christiansted. It was expected that these modern hospitals and health facilities would be completed early in 1953. A low-cost housing project was under way in St. Thomas to provide 240 housing units, financed by the Public Housing administration of the federal government. A similar project was also under way in Christiansted.

Installation of the modern telephone communication facilities had been almost completed and they were soon to be placed in operation.

Education.—Enrolment in the public schools of the Virgin Islands during 1952 totalled 5,423 as compared with 4,944 in 1951. Of this number, 2,219 students were enrolled in the elementary schools and 993 in high school in St. Thomas, while in St. Croix 1,443 were enrolled in the elementary schools and 467 in high school. Expenditures for public education in the Virgin Islands totalled \$544,447.41, of which \$71,370.63 was made available by the federal government. The average annual cost of education per pupil in the public schools was \$90.33. This included the daily school lunch service. The average annual salary per teacher in St. Thomas was \$1,584; in St. Croix \$1,480.

Finance.—Budgeted expenditures of the municipality of St. Thomas and St. John during the fiscal year 1952 amounted to \$1,388,658.99. A total of \$1,094,401.24 was raised through local taxation, and \$279,200 was allocated from the federal deficit appropriation. The budget deficit of about \$15,000 was absorbed by departmental savings.

In the municipality of St. Croix, a total of \$505,798.62 was raised from local taxes. The allocation of \$465,800 from the federal deficit appropriation enabled the municipality to meet its total budgeted expenditures of \$969,488.

Trade.—During the fiscal year 1952 a total of 338 commercial ships with a gross tonnage of 1,920,735 entered the port of St. Thomas as compared with 332 ships and a gross tonnage of 1,419,825 in 1951. Nearly 1,000,000 lb. of cargo were transported by air in and out of St. Thomas during the fiscal year.

Agriculture and Industry.—About 11,646 tons of sugar were produced, compared with 7,400 tons in 1951.

(M. F. DE C.)

Virgin Islands, British: see LEEWARD ISLANDS.

Viruses: see BIOCHEMISTRY; INFANTILE PARALYSIS; MEDICINE; RESPIRATORY DISEASES.

Visual Education: see MOTION PICTURES.

Vital Statistics: see BIRTH STATISTICS; CENSUS DATA, U.S.; DEATH STATISTICS; INFANT MORTALITY; MARRIAGE AND DIVORCE; SUICIDE STATISTICS.

Vitamins and Nutrition. After vitamin B₁₂, the anti-pernicious anaemia and growth vitamin, was isolated in 1948, a number of forms of the vitamin were described. Two antipernicious anaemia pigments, described separately as vitamin B_{12a} and vitamin B_{12b}, were later shown to be identical and to differ from vitamin B₁₂ by a slight chemical change. There had been indications that one or more other vitamin B₁₂-like factors might be required for the growth of chicks. Comparing the action of certain preparations with vitamin B₁₂, it was found that unidentified factors affected the growth of chicks relatively more than they did that of micro-organisms and it was postulated that they represented new "animal protein factors." In 1952, a report from the University of Wisconsin, Madison, by U. J. Lewis, D. V. Tappan and C. A. Elvehjem brought conclusive evidence of the existence in the faecal matter of rats of a vitamin B₁₂-like material which not only differs from vitamin B₁₂ in its chemical characteristics but also presents different biologic properties. It was believed that the discovery of a new vitamin B₁₂ with different biologic properties from those of the classic forms might constitute an important step in the advance of existing knowledge of blood-forming processes and of the aetiology of various forms of anaemias.

That the relation between the B-vitamin pantothenic acid and structural or functional integrity of the cortex of the adrenal gland is a close one had been often suggested. A study by L. S. Hurley and A. F. Morgan was based on the reasoning that if it is true, as suggested from the histologic and physiologic evidence at hand, that pantothenic acid deficiency imposes a continuous stress on the adrenal cortex, then exhaustion of the adrenals should occur, and the deficient animals should act as though the adrenals had been removed if exposed to a second stress. Decreasing the oxygen tension to that prevailing at 20,000 ft. of altitude was used as the stress. The responses of normal and of pantothenic acid-deficient animals were compared with respect to liver glycogen and blood glucose, adrenal ascorbic acid concentration and adrenal weights.

While the normal rats increased their liver glycogen by 600% to 700%, under reduced tension, the pantothenic acid-deficient rats showed no rise in liver glycogen during the stress period. The deficient animals also showed lower ascorbic acid values and greater adrenal weights than the controls. Administration of one dose of pantothenic acid did not produce a very marked rise of glycogen or blood glucose. By contrast, administration of adrenal cortical extract enabled the deficient rats to raise their liver glycogen and blood sugar under anoxia as well as the control group.

The authors concluded from these results that it is probably a functional deficiency of adrenal cortical hormones which produces the failure of carbohydrate metabolism under stress. The fact that their administration could instantly restore this mechanism while the effect of pantothenic acid was delayed pointed specifically to the adrenal cortex as the site of the defect. This study again contributed a suggestion that there is a close link between pantothenic acid and adrenal function, but a clear-cut answer to the problem was still needed.

One of the most widespread nutritional disorders in tropical and subtropical areas is a syndrome which was in 1952 still ill defined. It was known by various names such as kwashiorkor, malignant malnutrition, polydeficiency disease and infantile pellagra. As the result of a recommendation made by the joint Food and Agriculture organization-World Health organization Expert Committee on Nutrition in Oct. 1949, J. F. Brock and M. Autret visited a large number of territories in Africa and in 1952 presented a report of their observations and a critical analysis of the available literature.

In this report kwashiorkor was defined as a nutritional syndrome (or syndromes) found among indigenous Africans and composed of five essential features: retarded growth in the late breast-feeding, weaning and postweaning ages; alterations in skin and hair pigmentation; edoema; fatty infiltration, cellular necrosis or fibrosis of the liver; and a heavy mortality when not treated. A variety of dermatoses, gastrointestinal disorders, mental apathy and anaemia are commonly associated with but not essential components of this syndrome. While the report of Brock and Autret was restricted to kwashiorkor in the pre-weaning and postweaning child in certain areas in Africa, they recognized that a similar syndrome occurs in other parts of the world and is often given the same name.

The authors made several recommendations for the prevention of kwashiorkor. Since the provision of adequate supplies of animal proteins in these areas would require many years, their attention was focused largely upon improving the quality of the protein of vegetable origin in the diet. Cassava and similar foods give high yields of calories per acre. Peanuts, soybeans and protein-rich varieties of millet are among the plants giving good yields of protein. The improvement of indigenous pulses and other foods familiar to these people was recommended instead of the introduction of new foods which might not be accepted.

Besides these general measures for dietary improvement, more suitable supplementary foods for weanling infants were badly needed to replace the starchy gruels. Artificial "milk" from pulses or peanuts, which can be made at home, was suggested. By means of education and aroused interest, some progress was being made.

The relation between dietary cholesterol, plasma cholesterol and the occurrence of atherosclerosis (a type of hardening of the arteries) in man had been subject to wide interest and extensive discussion. One of the chief difficulties in studies of this kind in man was the lack of a satisfactory measure of the degree of atherosclerosis in an individual, resulting in the virtual impossibility of determining whether a therapeutic regimen has made a change in the degree of atherosclerosis. Since it is believed that most if not all patients with coronary occlusion and myocardial infarction have coronary atherosclerosis, a group of patients who have suffered this cardiac insult should serve as controls for a similar group for whom a specific therapeutic regimen is designed. Such a study was undertaken by L. M. Morrison. One hundred patients with coronary atherosclerosis as determined by previous coronary occlusion and myocardial infarction (established by clinical findings and typical electrocardiographic changes within six months of the study) were observed over a period of three years with regard to recurrent coronary thrombosis, congestive heart failure, mortality rate, serum lipid determinations and body weight. The patients were divided into two groups of 50 each, the division being made by "comparable" alternation. One group of 42 males and 8 females, averaging 60 years of age, served as controls by being allowed to eat ad libitum an "average American diet" which was estimated as containing between 80 and 160 g. of fat, and 200 to 1,800 mg. of cholesterol per day. The treated series comprised 43 males and 7 females whose ages averaged 62 years. This group was given the experimental diet designed to be low in fat and cholesterol. This diet contained 25 g. fat and 50 to 75 mg. cholesterol daily. The maximal caloric allowance was 1,500 calories daily and furnished 320 g. of carbohydrate and 90 g. of protein.

The results in this small group of patients suggested a beneficial effect upon morbidity and mortality in the group given the low-fat, low-cholesterol diet. Of the 50 patients allowed to consume the "average American diet," 35 were alive at the end of three years (mortality rate, 30%), whereas, of the 50 patients fed the low-fat, low-cholesterol diet, 43 were alive at the end of four years (a mortality rate of only 14%). (See also NUTRITION, EXPERIMENTAL.)

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Vocational Rehabilitation, Office of. This office, a constituent unit of the Federal Security agency, administers grants-in-aid and supplies leadership and technical assistance for the state-federal vocational rehabilitation program, a public service to prepare handicapped civilians for or to keep them in jobs commensurate with their fullest capabilities.

Various combinations of the following services are provided, according to the disability and need of each individual. Those numbered 1, 2, 5, 8 and 9 are furnished without charge and the others are paid for from public funds to the extent of the individual's inability to pay: (1) medical examination to determine eligibility and extent of disability, to discover hidden disabilities

and to ascertain work capacity; (2) individual counsel and guidance, including interest and aptitude tests, to help the disabled person choose and attain a job objective within his physical limitations but commensurate with his best potential abilities; (3) medical, surgical and psychiatric treatment and hospital care to reduce or remove the disability; (4) prosthetic appliances such as limbs, braces and hearing aids to improve work ability; (5) training in school, on the job or by tutor to fit the individual for the right job; (6) maintenance and transportation during physical restoration and training; (7) occupational tools, equipment and licences to give the handicapped person a fair start; (8) placement on the right job; and (9) a follow-up to make sure the rehabilitant and employer are mutually satisfied or to effect necessary adjustment.

Any person of or near working age who has a physical or mental disablement which constitutes a substantial vocational handicap is eligible. Through 1952, nearly 676,000 persons had been rehabilitated since the first vocational rehabilitation act was adopted in 1920.

During the fiscal year ending June 30, 1952, 63,632 persons were rehabilitated into self-supporting jobs and another 13,813 persons had been placed in jobs and were awaiting a post-rehabilitation check at the year's end. In addition, 12,242 persons were ready for jobs on June 30 and the active rolls listed 111,396 persons in earlier stages of rehabilitation.

Orthopaedic disabilities were the most common, being the primary handicap of 42% of the rehabilitants. Twelve per cent were amputees and 30% suffered from impairments of the extremities or bones. Visual disabilities accounted for 12%; aural, 9%; tuberculous, 9%; mental, 7%; cardiac, 4%; and all other defects, including ulcers, hernia, speech and asthma, 17%.

The annual rate of earnings of the rehabilitants when services were started was estimated at \$16,000,000, mostly in temporary, unsafe or otherwise unsuitable jobs. The annual rate of earnings for the first year after rehabilitation was estimated at \$100,000,000, on which federal income taxes were estimated at \$8,500,000. Within four years, the 1952 rehabilitants would pay in federal income taxes as much as the entire 1952 federal expenditure for the rehabilitation program, which was \$21,500,000. State expenditures totalled \$10,500,000.

The number of men and women throughout the country who were disabled to the extent of needing rehabilitation services was estimated at between 1,500,000 and 2,000,000 in 1952. Every year as a result of chronic illness, accidents and congenital defects about 250,000 men and women become disabled to the extent that they need rehabilitation services in order to become employable. (See also MEDICAL REHABILITATION OF THE DISABLED; VETERANS ADMINISTRATION [U.S.].) (M. E. SR.)

Wages and Hours. U.S. manufacturing pay rolls in Aug. 1952 were 1.6% above the 1951 dollar level, compared with a 14% gain for the preceding year. Manufacturing employment declined .7% during the year.

Total wage and salary payments for Aug. 1952 were \$15,083,300,000, which represented an increase of 5.7% over the same month in 1951.

Real wages reached a new post-World War II peak in March 1952 of 149.4 (based on 1939 averages). The previous high was 148.8 in Dec. 1950. Average real wages for the first eight months of 1952 were .9% above the 1951 figures (see Table I).

In 23 industries, average weekly earnings increased more rapidly than the 3.05% rise in the consumers' price index. In eight industries (four of which were adversely affected by work stoppages in steel) weekly wages did not keep pace with the cost of living. Increases in hourly wage rates follow almost exactly the same pattern as weekly averages when compared with the con-

Table I.—U.S. Real Wage Indexes

(1939=100)

Months	Consumers' price index		Index of average weekly manufacturing wages		Index of real wages	
	1952	1951	1952	1951	1952	1951
Jan.	190.2	182.6	280.4	267.2	147.4	146.3
Feb.	189.0	184.9	280.4	267.6	148.4	144.7
March.	189.1	185.6	282.5	270.6	149.4	146.0
April.	189.8	185.7	276.1	271.3	145.5	146.1
May.	190.1	186.5	279.3	270.5	146.9	145.0
June.	190.7	186.3	281.1	272.8	147.4	146.4
July.	192.0	186.6	275.8	269.2	143.6	144.2
Aug.	192.3	186.6	280.2	270.4	145.7	144.9
Sept.	—	187.7	—	274.3	—	146.1
Oct.	—	188.5	—	273.1	—	144.9
Nov.	—	189.7	—	276.0	—	145.5
Dec.	—	190.2	—	282.5	—	148.5

Source: Survey of Current Business, United States Department of Commerce.

sumers' price index variations.

The highest weekly earnings for any industry were \$88.31 in building construction. This was 3.3% above the highest 1951 figure. The greatest comparative increase in average weekly earnings was one of 14.3% in the leather industry. Decreases in take-home pay were experienced in coal mining, steel, and automobile manufacturing. These decreases did not reflect a continuing trend, but were the result of disruptions in production by reason of labour disputes principally in the steel industry. Aside from these isolated decreases, the smallest gain in average weekly earnings was one of 1.8% in general merchandising. Reported payments in this instance, however, do not include commissions.

Irregularities in coal production were reflected in the 26.4-hr. work week for anthracite miners, and the 27.6-hr. week for bituminous miners. In the various industries shown in Table II, the number of hours worked per week declined in 14 instances, increased in 15 and remained steady in 3.

In Aug. 1952, 82.4% of the industries shown in Table II paid average weekly earnings in excess of \$60, compared with 71% in 1951. About 44% paid \$70 or more, and 8.8% paid more than \$80 a week.

The highest average hourly earnings were in building construction (\$2.282), followed by \$2.256 in bituminous coal mining. The greatest proportionate gain in hourly rates was one of

Table II.—Average U.S. Weekly Earnings, Average Weekly Hours, and Average Earnings Per Hour in Major Industries

Industry	Average weekly earnings August		Average weekly hours August		Average hourly earnings August	
	1952	1951	1952	1951	1952	1951
ALL MANUFACTURING	\$66.85	\$64.32	40.2	40.3	\$1.663	\$1.596
Durable goods	71.37	69.55	40.6	41.3	1.758	1.684
Non-durable goods	61.45	57.91	39.8	39.1	1.544	1.481
Iron and steel	70.06*	77.64*	36.0*	40.8*	1.946*	1.903*
Electrical machinery	69.86	66.34	40.9	40.8	1.708	1.626
Non-electrical machinery	78.09	75.94	42.3	43.0	1.846	1.766
Transportation equipment	77.83	76.36	40.2	40.9	1.936	1.867
Automobiles	70.85*	73.30*	36.0*	37.9*	1.968*	1.934*
Nonferrous metals	75.66*	69.90*	41.8*	40.9*	1.810*	1.709*
Lumber and wood products	64.35	60.49	41.3	40.9	1.558	1.479
Furniture and fixtures	61.09	57.53	41.5	40.8	1.472	1.410
Stone, clay and glass	66.59	64.74	40.8	41.5	1.632	1.560
Textile mill products	53.15	48.08	39.4	36.7	1.349	1.310
Apparel, etc.	47.84	46.11	37.2	35.8	1.286	1.288
Leather and leather products	52.79	46.19	39.9	36.4	1.323	1.269
Food and food products	63.34	61.15	41.1	42.0	1.541	1.456
Tobacco manufactures	45.01	44.08	38.5	38.5	1.169	1.145
Paper and allied products	69.70	64.84	43.0	42.6	1.621	1.522
Printing and publishing	80.89	75.54	39.0	38.7	2.074	1.952
Chemicals and allied products	70.90	68.18	40.7	41.5	1.742	1.643
Products of coal and petroleum	85.05	80.55	39.8	40.6	2.137	1.984
Rubber products	76.22	69.52	41.2	40.7	1.850	1.708
Miscellaneous manufacturing industries	61.60	56.82	41.4	40.1	1.488	1.417
NONMANUFACTURING						
Coal mining						
Anthracite	58.71*	79.50*	26.4*	35.3*	2.224*	2.252*
Bituminous	62.27*	73.71*	27.6*	32.7*	2.256*	2.254*
Metalliferous mining	79.82*	72.32*	42.5*	42.0*	1.857*	1.722*
Street railways and buses	77.67*	73.19*	47.3*	46.5*	1.642*	1.574*
Telephone	62.37*	59.30*	39.4*	39.8*	1.583*	1.490*
Telegraph	72.71*	71.23*	44.8*	44.8*	1.623*	1.590*
Gas and electric utilities	74.63*	71.82*	41.3*	42.0*	1.807*	1.710*
Wholesale trade	68.05*	64.55*	40.7*	40.7*	1.672*	1.586*
General merchandise stores	39.20*	38.51*	36.6*	37.1*	1.071*	1.038*
Hotels	37.23*	35.46*	42.6*	43.4*	.874*	.817*
Building construction	88.31*	83.63*	38.7*	38.1*	2.282*	2.195*

Source: Survey of Current Business, United States Department of Commerce.

*July.

Table III.—*Rise in Hourly U.S. Earnings Rates*

Industry	(August rates)					Index, 1952	
	1947	1948	1949	1950	1951	(1941 = 100)	
ALL MANUFACTURING	\$1.236	\$1.373	\$1.398	\$1.464	\$1.597	\$1.663	223.2
Durable goods	1.312	1.441	1.473	1.539	1.683	1.758	211.8
Nondurable goods	1.158	1.293	1.319	1.374	1.482	1.544	234.7
Iron and steel	1.376	1.514	1.539	1.593	1.877	1.946	223.4
Machinery (nonelectrical)	1.377	1.498	1.530	1.603	1.764	1.846	220.8
Automobiles	1.501	1.660	1.703	1.783	1.937	1.968*	186.2
Lumber and allied products	1.048	1.289	1.306	1.382	1.474	1.558	265.0
Textile products	1.032	1.175	1.180	1.220	1.311	1.349	253.1
Food and food processing	1.140	1.235	1.269	1.343	1.457	1.541	234.2
Tobacco products . . . . .	.951	.963	.993	1.097	1.144	1.169	224.8
Rubber products	1.445	1.497	1.507	1.587	1.704	1.850	214.9
NONMANUFACTURING							
Coal mining							
Anthracite	1.780	1.900	1.827	1.976	2.225	2.224	224.9
Bituminous	1.787	1.961	1.900	2.001	2.216	2.256	218.4
Wholesale trade	1.258	1.366	1.406	1.485	1.583	1.672	209.5
Building construction	1.668	1.874	1.931	2.025	2.207	2.282	228.0

Source: Survey of Current Business, United States Department of Commerce.

*July figure.

8.3% in rubber manufacturing, with the next greatest gain (7.8%) in metalliferous mining. Slight declines in coal mining and in apparel manufacturing were caused by temporary maladjustments in the classifications of labour employed during August. The lowest monetary rate paid was 87.4 cents in hotels (not including tips, board, room and uniforms). For manufacturing as a whole, the increase in hourly rates was 4.2%, compared with 9.0% in 1951 and 4.6% in 1950.

Table III shows a five-year climb of 34.5% in hourly earnings rates for all manufacturing industries. The greatest five-year improvement was in lumber (48.7%). The gains for the year were spread among all industries, apparently demonstrating that the soft goods industries had substantially caught up with the strong wartime wage gains in the durable goods industries.

In Aug. 1952 the average hourly rate for common labour was \$1.793, compared with \$1.637 in 1951 and 47 cents in 1941. Farm wages increased from 73 cents per hour (not including room and board) in 1951 to 87 cents in 1952, an increase of 19.2%.

Wage payments (both hourly and weekly) did not increase as rapidly during the year as they had during the postwar period up through 1951. How much of the slowdown in the rate of increase was attributable to reduced inflationary pressures and how much to the effectiveness of Wage Stabilization board policy was problematical. Soft spots which had appeared in 1951 did not continue to be evident in 1952. The general trend throughout the first eight months of 1952 in hourly and weekly earnings and in real wages continued to be upward. (D. J. H.)

Other Countries.—The inflation that followed the outbreak of the Korean war appeared to have reached its peak in most European countries before the beginning of 1952 and the cost of living steadied, with consequent slackening of wage demands. In such countries as the United Kingdom and Australia price raises, probably delayed by the stricter economic controls, continued during 1952 and many wage demands were pressed.

Edgar Faure, the French prime minister, failed early in the year to get assembly approval for a bill to base the minimum

wage on the monthly cost-of-living figures. He gave way to Antoine Pinay who got the bill through. Pinay's efforts to keep prices steady were substantially successful: from a peak index of 148.5 in the winter of 1951-52, they fell to 142.1 at the end of June and rose to 144.8 in August.

Italian civil servants received an increase of 2,000 lire a month in January after a bill to grant them 1,500 lire was amended against the wishes of the government. Although there was some unrest over wages the labour year was relatively quiet. In the German Federal Republic, which had an abundant supply of refugee labour, a demand was raised, but not acceded to, for a reduction in working hours from 48 a week to 40 to prevent unemployment. Legislation in January provided machinery for fixing minimum wages in industries where nonexistence of unions or employers' organizations prevented collective agreement.

The system of fixing minimum wages in Australia based on quarterly cost-of-living figures was attacked in June by employers' organizations. They asked the Court of Conciliation and Arbitration to cancel the June award of an average of 9s. a week, to increase hours from 40 to 44 and to abandon automatic wage increases with every rise in cost-of-living figures. The court refused to cancel the award and the other matters were outstanding late in the year.

In the United Kingdom, the spate of wage claims which had characterized 1951 continued and on May 15 R. A. Butler, chancellor of the exchequer, appealed for wage restraint, pointing out that claims outstanding affected between 7,000,000 and 8,000,000 workers. In July Sir Walter Monckton, minister of labour, referred back wage increase awards submitted by 12 councils in the distributive trades and asked for their reconsideration in the light of the chancellor's appeal. When a number of these awards were resubmitted without alteration he accepted them, thus giving wage increases in some shops of from 2s. to 10s. a week. Engineers (who at first asked for an increase of £2 a week), coal miners and dockers were among those with claims outstanding late in the year.

Increases granted in Jan.-Aug. 1952 affected 6,101,000 workers who got £2,338,900 more a week. Among them were agricultural workers who got, in the case of men over 21, an increase of 5s. a week, making their weekly minimum 113s. Many more industries granted 12 days' paid holidays in 1952 in place of 6. There were no important changes in working hours. While average earnings for men in April 1952 were 173% above 1938, average wage rates for a full ordinary working week had increased by only 108%. The disparity is accounted for by the lower number of hours a week worked as basic in 1952, the greater number of hours worked at overtime rates and by extension of payment by results. (See also AGRICULTURE; BUILDING AND CONSTRUCTION INDUSTRY; BUSINESS REVIEW; CENSUS DATA, U.S.; LABOUR UNIONS; PRICES.)

(R. JAN.)

Wage Stabilization Board. The U.S. Wage Stabilization board (WSB) was created under executive order 10161, Sept. 9, 1950. The board was organized within the Economic Stabilization agency (ESA) and activated in November with Cyrus S. Ching as chairman. Membership included three representatives each of labour, industry and the public. Instructions were to advise and make recommendations to the ESA.

Labour members wanted a larger board with greater power. On Feb 15, 1951, the Congress of Industrial Organizations and American Federation of Labor members of WSB bolted, thereby rendering the WSB inoperative until it was reconstituted under executive order 10233, April 21. The WSB was reorganized by the new chairman, George W. Taylor, and reactivated on May 8. During the interim, ESA had promulgated and administered a

Table IV.—*Average Earnings, Hours and Hourly Earnings in the United Kingdom of Men over 21 in Manufacturing and Principal Nonmanufacturing Industries**

	Weekly wages	Per cent increase over 1938	Hours worked a week	Hourly rate
1938†	69s.		47.7	1s. 5.4d.
1946†	120s. 9d.	75	47.6	2s. 6.4d.
1947	123s. 5d.	79	46.3	2s. 8d.
1948	134s.	94	46.5	2s. 10.6d.
1949	139s. 11d.	103	46.6	3s.
1950	145s. 9d.	111	47.0	3s. 1.2d.
1951	160s. 2d.	132	47.9	3s. 4.1d.
1952	173s. 7d.	152	47.3	3s. 8d.

*Based on returns from about 60,000 undertakings for last pay week in April of each year. †October.

Source: Ministry of Labour Gazette (H.M.S.O., London, Sept. 1952).

policy limiting wage increases to 10% of the Jan. 15, 1950, pay levels, but providing for additional adjustments in specific instances wherein this arbitrary base date was "abnormal."

The second WSB had 18 members—6 each to represent labour, industry and the public. Fourteen regional offices implemented board policy. The reconstituted board had somewhat broader powers over labour disputes, with jurisdiction enforceable only after collective bargaining, mediation and conciliation had failed, provided the parties agreed to submit the dispute to the WSB or provided the president referred to the board disputes affecting defense mobilization. The "tandem" regulation set down by ESA was clarified to permit continuation of historical relationships whereby adjustments of wages for one group of employees had been directly related to those of another group in timing, amount and nature, without regard to the overall 10% limitation.

A second labour walkout from the WSB was threatened because wage controls allegedly were being maintained more rigidly than price controls. On Aug. 29, 1951, Chairman Taylor resigned and was replaced by Nathan P. Feinsinger.

WSB continued to deal with all elements of compensation, including such fringe benefits as paid vacations, holidays, shift bonuses, incentive payments, employer contributions to insurance, welfare and pension funds and premium overtime payments. Increasing emphasis was placed upon cost-of-living escalator adjustments in wage rates, and less upon the 10% formula.

The steel case continued to be a serious problem, with the union shop recommendation of the WSB and the price increase for steel recommended by ESA receiving criticism respectively from management and labour. Another example of increasing tension was a strike in the oil industry during April and May 1952, when industry representatives refused to appear at WSB panel hearings and the union subsequently refused to return to work without a contract, despite WSB action. Notwithstanding these difficulties, Chairman Feinsinger reported in Aug. 1952 that more than 90% of WSB rulings in 60,000 wage petitions were unanimous and that WSB had modified or denied about 20% of the wage-increase requests.

A backlog of about 12,000 cases created impatience on the part of unions over delays in disposing of cases. Another labour bolt from the board appeared to be imminent. Under the continuing pressure of both labour and management groups, the WSB was revamped again, with its authority restricted and budget reduced. Archibald Cox replaced Feinsinger as chairman on Sept. 1, 1952.

In Oct. 1952, labour members of the board dissented from the WSB decision to trim 40 cents from the \$1.90-per-day increase agreed to by the United Mine Workers and the bituminous coal operators, and the U.M.W. struck in protest of the board recommendation. The action high-lighted the board policy that "the important question under wage stabilization is not what the parties may agree upon but what the Board will approve."

(D. J. H.)

Waksman, Selmán Abraham (1888—), U.S. biologist and Nobel prize winner, was born at Priluka, Kiev province, Russia, on July 2; he emigrated to the United States in 1910 and became a naturalized U.S. citizen six years later. He received his B.S. (1915) and his M.S. (1916) from Rutgers university, New Brunswick, N.J.; and his Ph.D. from the University of California in 1918. After working as a research biochemist for private laboratories in California, he returned to Rutgers to teach soil microbiology; he became associate professor there in 1924 and full professor in 1930. As early as 1915 he had begun his investigations which ultimately led to discovery of the drug streptomycin; not until

1939, however, did he change the course of his research with earth moulds in such a way that it led to production of the new antibiotic. Streptomycin was introduced by Waksman and his associates (including Albert Schatz of Brooklyn college) in 1943. The medical profession found it especially effective against tuberculosis, whooping cough and a number of other diseases.

For his codiscovery of streptomycin, Waksman was awarded the 1952 Nobel prize for medicine and physiology, announced Oct. 23, 1952, at Stockholm, Sweden.

Wales: see GREAT BRITAIN & NORTHERN IRELAND, UNITED KINGDOM OF.

Walnuts: see NUTS.

War, Law of: see INTERNATIONAL LAW.

War Prisoners: see PRISONERS OF WAR.

War Savings Stamps: see POST OFFICE.

Washington. A state in the extreme northwestern United States, popularly known as the "Evergreen state," Washington was admitted to the union Nov. 11, 1889. Total area: 68,192 sq.mi., of which 66,786 sq.mi. are land; pop. (1950): 2,378,963; native white 2,125,495; foreign-born white 191,001. According to a July 1, 1952, estimate, the state's population was 2,496,050. In 1950, the urban population was 1,503,166 or 63.2% of the total population. The population of the three largest cities, according to July 1, 1952, estimates (1950 figures in parentheses), were respectively: Seattle, 477,930 (467,591); Spokane, 171,040 (161,721); and Tacoma, 145,170 (143,673).

History.—On Sept. 2, 1952, the supreme court of the state declared unconstitutional the law of 1937 which penalized the possession or operation of slot machines, which had been assumed to exempt nonprofit clubs. In a 7 to 2 decision, the court held that slot machines were in violation of article ii chapter 24 of the state constitution which forbids the state legislature to authorize any lottery.

In Aug. 1952, the federal Securities and Exchange commission approved the distribution of Washington Water Power stock formerly held by the American Power and Light company. Nine temporary directors of the local company were elected.

The first annual far east trade fair was held in Seattle between Sept. 6 and 14. About \$500,000 worth of goods, representing 10,000 articles from 500 oriental manufacturers, were on display.

The chief state officers for 1952 were: governor, Arthur B. Langlie; lieutenant governor, Victor A. Meyers; secretary of state, Earl S. Coe; treasurer, Tom Martin; auditor, Cliff Yelle; attorney general, Smith Troy; state superintendent of public instruction, Pearl Wanamaker (elected on nonpartisan basis); state commissioner of public lands, Jack Taylor; state insurance commissioner, William A. Sullivan; chief justice of the state supreme court, E. W. Schwellenbach.

Education.—During the year 1951-52, the enrolment in the public schools was 426,580, and average daily attendance for elementary schools was 237,107, for junior high schools 45,739, and for senior high schools 73,463. The total number of teachers was 17,191 and the average salary for all certified personnel was \$3,866.14. The total current expenditures were \$103,831,089.02 and the cost per pupil in attendance was \$256.41. The combined enrolment for the fall term of 1951 at the University of Washington, the State College of Washington and the three colleges (formerly colleges of education) was 21,463. Nine junior colleges, integrated with the secondary school program of the state but operated with state funds, had a total enrolment of 2,675 students.

Social Insurance and Assistance, Public Welfare and Related Programs.—During the period Sept. 1951 through Aug. 1952, inclusive, public assistance in the state, including federal expenditures and state aid, cost \$78,613,749.45. An average of 126,636 persons received assistance to a total amount of \$73,723,841.89. An average of 13,896 persons received a total of \$4,853,484.43 in general assistance. An average of 71,232 old persons received a total of \$50,816,649.98. An average of 35,176 children were assisted to the total amount of \$12,886,199.76. An average of 912



ALASKAN WAY VIADUCT, double-decker highway along the Elliott bay water front in Seattle, Wash., scheduled to be opened to north-south traffic in Jan. 1953

blind persons received a total of \$892,337.87. The above total amount for public assistance included a total amount of \$3,909,302.87 allotted to an average 5,750 disabled persons. A total of \$360,399.57 was paid by the state for burials during the above period. Administration of the entire program cost \$4,889,907.56. Health care was largely the responsibility of the counties.

During the month of June 1952, 11 state charitable institutions had an average total population of 10,778 and four correctional institutions had an average total of 2,383 inmates. The total expenditures for salaries, wages and operations, exclusive of capital outlays and new construction for both programs during the fiscal year April 1, 1951, to March 31, 1952, were \$10,822,322.56.

Communications.—Railroad mileage in the state was 6,176 on Dec. 31, 1951. On Jan. 1, 1951, there were 178 airports in Washington of which 116 were in class I. The total mileage of highways in Washington on Jan. 1, 1952, was 45,135.6; total mileage of federal-aid highways on the state highway system was 9,615; total mileage on the state highway system was 6,515.8; and the total mileage of highways, roads and streets under county jurisdiction and management was 38,619.8. Total state expenditures for highways during the period Feb. 1, 1951, to Jan. 31, 1952, was \$36,787,235; \$25,171,219 was spent for construction and \$11,616,016 for maintenance and administration.

Banking and Finance.—In 1952 the state board of equalization placed the value of real and personal property at \$4,141,083,552 and equalized for purposes of taxation at \$2,070,541,776. On March 31, 1952, the bonded indebtedness was \$1,152,000; outstanding warrants amounted to a total of \$57,162,568.28. For the year ending March 31, 1952, total receipts were \$569,256,097.19 and disbursements, including cash transfers, were \$537,988,606.57.

On March 31, 1952, 120 banks, including four mutual savings banks, reported a total capital of \$42,130,000; capital surpluses, undivided profits and reserves at \$157,847,040; deposits of \$2,217,229,114; and total assets of \$2,399,957,878.

Total income payments and per capita income payments for 1951 were \$4,257,000,000 and \$1,755, respectively, in both instances an all-time high.

Agriculture.—According to the census of April 1950, the state had 69,820 farms, whose total acreage was 17,369,245 and whose average size was 248.8 acres. Crop land amounted to 4,236,705 acres. Total agricultural income in 1951 was \$583,248,000; receipts from livestock and products were \$207,172,000, from crops \$346,349,000; the total value of production for home consumption was \$25,530,000; and government payments amounted to \$4,097,000. Total agricultural production in 1951

Table I.—Leading Field and Fruit Crops of Washington

Crop	Indicated 1952	1951	Average 1941-50
Wheat, bu.	77,334,000	75,152,000	64,395,000
Apples, bu.	23,725,000	19,108,000	29,458,000
Pears, bu.	4,833,000	5,554,000	7,046,000
Hops, lb.	27,000,000	27,387,000	18,565,000
Potatoes, bu.	10,400,000	11,600,000	9,905,000
Peas (100-lb. bags)	1,287,000	2,398,000	3,091,000
Hay, all, tons	1,451,000	1,431,000	1,682,000
Strawberries (crates)	1,200,000	773,000	630,000
Cherries, tons	17,900	16,200	30,240
Barley, bu.	3,010,000	3,384,000	6,604,000
Oats, bu.	6,240,000	6,670,000	7,454,000

Source: U.S. Department of Agriculture.

Table II.—Principal Industries of Washington

Industry	Pay roll (for 12-month period ending Sept. 30, 1951)
Logging and lumber products	\$164,300,000
Food products	93,200,000
Plywood, millwork, etc.	69,600,000
Pulp and paper	61,800,000
Chemical (including Hanford)	49,600,000
Basic nonferrous metals	29,900,000
Machinery	27,700,000
Fabricated products (metal)	22,600,000
Basic ferrous metals	14,500,000
Furniture	12,200,000
Shipbuilding	10,800,000

had a value of \$644,611,000 or 111% of 1950.

Manufacturing and Trade.—In 1950 the value added by manufacture was \$1,113,362,000, in contrast with \$926,630,000 in 1949 and \$874,036,000 in 1947. There were 6,022 establishments subject to unemployment compensation in 1951. In July 1952, the civilian labour force of the state was estimated at 1,030,300 of which 1,000,000 were employed. Domestic workers numbered 15,600; agricultural workers 144,400; and non-agricultural workers 840,500. Manufacturing establishments employed 202,200 and nonmanufacturing firms 536,100.

The output of lumber in 1951 was 3,922,000,000 bd.ft. (estimated); pulp and paper production 2,053,000 tons (estimated); and plywood production for the Pacific northwest was 2,984,000 sq.ft. (estimated).

The salmon pack for the Puget sound and Columbia river districts combined was 1,060,000 cases in 1951.

For the year 1951, the Washington customs district reported total exports of \$247,277,052 and imports for consumption of \$219,006,503.

(H. J. De.)

Mineral Production.—Table III shows the tonnage and value of mineral commodities produced in Washington in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available.

Table III.—Mineral Production of Washington

(In short tons, except as noted)

Mineral	1950		1949	
	Quantity	Value	Quantity	Value
Clays	217,000	\$ 252,000	220,000	\$ 267,000
Coal	874,000	5,829,000	899,000	6,029,000
Copper	5,057	2,104,000	5,275	2,078,000
Gold (oz.)	92,000	3,224,000	72,000	2,520,000
Lead	10,000	2,790,000	6,000	2,028,000
Sand and gravel	10,606,000	7,435,000	9,216,000	6,391,000
Silver (oz.)	364,000	329,000	358,000	324,000
Stone	4,931,000	5,375,000	3,689,000	4,104,000
Zinc	15,000	4,205,000	11,000	2,664,000
Other minerals . . . . .	...	17,152,000	...	14,456,000
Total		\$49,055,000		\$40,863,000

Washington ranks first among the states in the production of magnesite, and stands 29th in the value of mineral output, with 0.41% of the U.S. total.

Washington. DISTRICT OF COLUMBIA, is the national capital of the United States. On July 19, 1952, an act of congress was approved to enlarge the national capital planning commission and create a national capital regional planning council, to the end of securing co-ordinated, comprehensive planning for the entire area, which includes the federal city and near-by towns and counties in Maryland and Virginia. Under the act, the expenses of both planning agencies would be met from federal funds.

Several plans had been prepared for the southwest area selected for redevelopment. The official plan of the national capital planning commission was made public in October. As required by law, public hearings were held by the district commissioners.

Early in the year, the commissioners released a comprehensive highway plan which in some respects differed from the official comprehensive plan of the planning commission.

Under his powers for reorganization of the federal government, the president, on May 1, 1952, issued an executive order to reorganize the district government which, in the absence of objection, became law 60 days afterwards. In addition to re-

grouping the departments of the district government, a new department of administration was created, and a citizens advisory council was appointed.

In connection with a six-year public works program, prepared by the commissioners, a citizens advisory committee on the public works program was appointed. The committee brought in a report approving a six-year program estimated to cost in excess of \$300,000,000, to be paid for partly by the D.C. highway fund and increased water and sewer taxes, with the balance to be shared half and half by the federal and district governments.

During the year the new Mellon fountain, near the National Gallery of Art at the apex of the Triangle in the foreground of the capitol, was dedicated. The golden horses, given by the Italian government, were placed at the entrances to the Arlington Memorial bridge and the Potomac parkway. Queen Juliana of the Netherlands presented a carillon to the United States in a ceremony in Meridian Hill park.

During the year, the president moved back into the White House which had been rehabilitated, redecorated and made safe at a cost of more than \$5,000,000. (See also MUNICIPAL GOVERNMENT.)

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Water Supply: see PUBLIC HEALTH ENGINEERING.

Wealth and Income, Distribution of. The 1952 *Survey of Consumer Finances* in the United States, published by the board of governors of the federal reserve system, supplied information on the distribution of income in 1951 and liquid assets in early 1952. Previous surveys had made similar information available for the period 1945–50. The surveys were based on small field canvasses of consumer spending units, defined as all persons living in the same dwelling and related by blood, marriage or adoption who pooled their incomes for their major items of expense.

Survey data on the percentage distribution of spending units according to size of holdings of liquid assets—U.S. government bonds, savings and checking accounts and shares in savings and loan associations and credit unions—are provided in Table I. It may be seen that from 1951 to 1952 the proportion of spending units with medium-sized holdings (\$200–\$1,999) showed a marked decrease—from 37% to 32%. The percentage with no

Table I.—Distribution of Spending Units by Size of Liquid Asset Holdings

Amounts of liquid assets held*	1947	1948	(Per cent)			
			1949	1950	1951	1952
None	24%	27%	29%	31%	28%	31%
\$1–\$199	14	15	16	16	16	17
\$200–\$499	12	13	13	11	14	13
\$500–\$999	14	12	11	10	11	9
\$1,000–\$1,999	14	12	11	10	12	10
\$2,000–\$4,999	14	12	12	13	11	12
\$5,000–\$9,999	5	5	5	6	5	5
\$10,000 and over	3	4	3	3	3	3
All units	100%	100%	100%	100%	100%	100%
Median holdings of all units	\$470	\$350	\$300	\$250	\$300	\$230
Median holdings of those with assets	\$890	\$820	\$790	\$810	\$710	\$720

*Includes all types of U.S. government bonds, checking accounts and savings accounts in banks, postal savings and shares in savings and loan associations and credit unions. Excludes currency holdings.

Source: Board of Governors of the Federal Reserve System.

Table II.—Distribution of Spending Units and Money Income Received, by Income Groups

Annual income (money income before taxes)	1945		1946		1950		1951	
	Spending units	Total money income	Spending units	Total money income	Spending units	Total money income	Spending units	Total money income
Under \$1,000	20%	5%	17%	3%	13%	2%	13%	1%
\$1,000–\$1,999	27	16	23	12	17	7	15	6
\$2,000–\$2,999	23	23	25	21	19	13	18	12
\$3,000–\$3,999	15	20	17	20	19	18	18	16
\$4,000–\$4,999	7	12	8	13	12	16	15	17
\$5,000–\$7,499	5	11	6	11	14	23	14	22
\$7,500 and over	3	13	4	20	6	21	7	26
All units	100%	100%	100%	100%	100%	100%	100%	100%

Source: Board of Governors of the Federal Reserve System.

Table III.—Percentage of Money Received by Each Fifth of Families and Single Persons

Families and single persons ranked from lowest to highest income	1935–36	1941	1944	1950
Lowest fifth	4.0%	3.5%	3.6%	4.1%
Second fifth	8.7	9.1	10.1	10.7
Third fifth	13.6	15.3	16.3	16.4
Fourth fifth	20.5	22.5	23.0	22.7
Highest fifth	53.2	49.6	47.0	46.1
All groups	100.0%	100.0%	100.0%	100.0%

Source: Council of Economic Advisers, based on survey data from National Resources Planning Board (1935–36), Department of Labor (1941), National Bureau of Economic Research (1944) and Board of Governors of the Federal Reserve System (1950).

holdings increased from 28 to 31. The total number of spending units owning some liquid assets in early 1952 was estimated at 37,000,000, roughly 1,000,000 below the postwar high in early 1951 but about 3,000,000 more than in early 1946.

Table II summarizes data provided by the surveys on the distributions of spending units and total money income according to size of income. The 1951 data revealed a further upward movement in the postwar income distribution. The expansion of total money income in the postwar years resulted in a shifting of many consumers to higher income levels. This shifting pervaded the entire income distribution. It was found that when the nation's spending units were ranked into tenths by size of income the proportionate shares of total money income received by each tenth in 1951 were quite similar to those in 1945.

A longer-term comparison of changes in the distribution of income is afforded by Table III. This shows for two prewar years, peak war year 1944 and full-employment year 1950, the percentage of money income going to each fifth of the total number of families and single persons, ranging from those with the lowest incomes to those with the highest.

From 1935–36 to 1950 there was a redistribution of income in the United States away from the highest income bracket. The second, third and fourth income brackets significantly improved their relative positions, whereas the percentage of total money income received by the highest bracket declined from 53 to 46.

State Distribution of Income.—Income payments to individuals expanded in every state in 1951, the latest year for which department of commerce estimates were available in 1952. Against the setting of a generally expansionary economic situation, total income moved up in most sections of the country at rates similar to the 12% rise for the country as a whole.

The largest regional gain, 15%, was scored by the southwest. (See Table IV.) Above-average gains were also scored by the far west (14%) and southeast (13%). The smallest relative increases occurred in New England (10%) and middle east (9%). For the country as a whole, per capita income payments (total income divided by total population) were \$1,584 in 1951. On a state basis, per capita incomes ranged from \$771 in Mississippi to nearly \$2,100 in Delaware and the District of Columbia. Others in the top rank included Nevada (\$2,029), Connecticut (\$1,999), New York (\$1,996), California (\$1,933) and Illinois (\$1,928).

Table IV reveals clearly the relatively high income levels of the northern and western parts of the country and the concentration of low-income states in the south. Despite the substantial progress they had made over the past two decades, the 15 southern states in 1951 had a composite per capita income 35% below the average for all other states.

From 1940 to 1951, a period of tremendous economic growth, there was a pronounced relative shift of total income from the New England and middle east regions to the south and west. As shown in Table IV, the rates of income expansion in the southwest, southeast, far west and northwest substantially exceeded the nation-wide rise of 220%, whereas the gains in New England and the middle east fell far short of it. The proportionate share of the nation's total income received by the four regions

Table IV.—U.S. Income Payments to Individuals, by States and Regions

State and region	Total income payments				Per capita income, 1951			
	Amount		Per cent increase	Per cent increase	Amount	Per cent national-average		
	1940	(In millions of dollars) 1949 1950 1951						
Continental United States . . .	75,852	196,772	217,672	242,947	12	220	1,584	100
New England . . .	6,124	13,283	14,559	16,057	10	162	1,715	108
Connecticut . . .	1,417	3,209	3,572	4,071	14	187	1,999	126
Maine . . .	431	1,030	1,083	1,182	9	174	1,298	82
Massachusetts . . .	3,309	6,903	7,545	8,223	9	148	1,738	110
New Hampshire . . .	269	620	673	747	11	178	1,444	91
Rhode Island . . .	511	1,113	1,237	1,341	8	162	1,691	107
Vermont . . .	187	408	449	493	10	164	1,322	83
Middle East . . .	24,319	54,984	60,557	66,112	9	172	1,822	115
Delaware . . .	239	536	609	683	12	186	2,076	131
District of Columbia . . .	905	1,891	2,072	2,291	11	153	2,095	132
Maryland . . .	1,222	3,070	3,417	3,875	13	217	1,714	108
New Jersey . . .	3,138	7,030	7,786	8,813	13	181	1,885	119
New York . . .	11,830	26,151	28,415	30,555	8	158	1,996	126
Pennsylvania . . .	6,225	14,363	16,141	17,552	9	182	1,663	105
West Virginia . . .	760	1,943	2,117	2,343	11	208	1,174	74
Southeast . . .	9,043	27,140	30,297	34,346	13	280	1,075	68
Alabama . . .	763	2,306	2,562	2,890	13	279	950	60
Arkansas . . .	493	1,457	1,582	1,769	12	259	926	58
Florida . . .	900	2,960	3,402	3,801	12	322	1,284	81
Georgia . . .	986	2,935	3,309	3,844	16	290	1,103	70
Kentucky . . .	880	2,480	2,700	3,115	15	254	1,066	67
Louisiana . . .	847	2,653	2,834	3,128	10	269	1,135	72
Mississippi . . .	444	1,331	1,527	1,689	11	280	771	49
North Carolina . . .	1,131	3,361	3,887	4,350	12	285	1,052	66
South Carolina . . .	545	1,586	1,756	2,131	21	291	1,003	63
Tennessee . . .	927	2,841	3,182	3,530	11	281	1,064	67
Virginia . . .	1,127	3,230	3,556	4,099	15	264	1,295	82
Southwest . . .	3,908	13,011	13,979	16,029	15	310	1,363	86
Arizona . . .	237	836	936	1,151	23	386	1,432	90
New Mexico . . .	190	679	775	916	18	382	1,301	82
Oklahoma . . .	829	2,285	2,394	2,677	12	223	1,182	75
Texas . . .	2,652	9,211	9,874	11,285	14	326	1,412	89
Central . . .	21,664	55,955	62,165	69,701	12	222	1,717	108
Illinois . . .	5,740	14,059	15,397	17,001	10	196	1,928	122
Indiana . . .	1,858	5,127	5,768	6,655	15	258	1,649	104
Iowa . . .	1,233	3,303	3,716	4,019	8	226	1,531	97
Michigan . . .	3,425	8,956	10,158	11,352	12	231	1,734	109
Minnesota . . .	1,424	3,634	3,992	4,414	11	210	1,474	93
Missouri . . .	1,914	5,045	5,580	6,141	10	221	1,519	96
Ohio . . .	4,448	11,360	12,618	14,509	15	226	1,799	114
Wisconsin . . .	1,622	4,471	4,936	5,610	14	246	1,614	102
Northwest . . .	3,363	9,737	11,022	12,220	11	263	1,507	95
Colorado . . .	589	1,698	1,855	2,158	16	266	1,568	99
Idaho . . .	232	705	739	800	8	245	1,356	86
Kansas . . .	757	2,272	2,570	2,847	11	276	1,460	92
Montana . . .	321	764	942	1,026	9	220	1,742	110
Nebraska . . .	569	1,660	1,969	2,035	3	258	1,510	95
North Dakota . . .	237	692	790	849	7	258	1,403	89
South Dakota . . .	242	726	839	989	18	309	1,529	97
Utah . . .	265	812	876	1,008	15	280	1,424	90
Wyoming . . .	151	408	442	508	15	236	1,722	109
Far West . . .	7,431	22,662	25,093	28,482	14	283	1,877	118
California . . .	5,606	16,824	18,609	21,306	14	280	1,933	122
Nevada . . .	92	266	300	347	16	277	2,029	128
Oregon . . .	633	2,076	2,318	2,572	11	306	1,652	104
Washington . . .	1,100	3,496	3,866	4,257	10	287	1,755	111

Source: United States Department of Commerce.

of the south and west increased 20% from 1940 to 1951, whereas that of the northeastern area (New England and middle east) declined 16%. However, aggregate income in the northeast in 1951 still accounted for more than one-third of the national total. (See also INCOME AND PRODUCT, U.S.) (C. F. Sz.)

United Kingdom.—The 94th Inland Revenue report, published in Jan. 1952, analyzed the distribution of incomes for 1949-50 in great detail. A special inquiry was carried out on the basis of a 10% sample of all taxpayers. The data were tabulated, classified according to size of income on the one hand, and according to type of income and the taxpayer's family circumstances on the other.

Table V.—Distribution of Incomes in the United Kingdom, 1949-50

Range of incomes (in £)	Number of incomes (in thousands)	Amount of income before tax (in million £)	Amount of income after income tax and surtax (in million £)
135- 150	853	122	122
150- 250	6,100	1,217	1,190
250- 500	9,290	3,261	3,102
500- 1,000	2,972	1,943	1,710
1,000- 2,000	600	802	596
2,000-10,000	224	773	439
10,000 and over	11	182	43
Total	20,050	8,300	7,202

Source: Ninety-fourth Report of the Commissioners of Inland Revenue (Cmd. 8436, H.M.S.O., London, 1952).

Table VI.—Distribution of Incomes after Tax in the United Kingdom, 1949-50

Range of incomes after tax (in £)	Number of incomes (in thousands)	Amount of income after tax (in million £)
135-250	7,647	1,481
250-500	9,470	3,350
500-1,000	2,460	1,608
1,000-2,000	385	523
2,000-4,000	83	218
4,000-6,000	5	22
6,000 and over	0.06	0.5
Total	20,050	7,202

Source: Ninety-fourth Report of the Commissioners of Inland Revenue (Cmd. 8436, H.M.S.O., London, 1952).

Taxpayers with an income above the exemption limit for assessment (£135 a year) and their dependents comprised about nine-tenths of the population, the rest consisting mainly of old-age pensioners and juvenile earners. Tables V and VI show, in a summary form, the distribution above the exemption limit; the figures have been officially corrected for certain categories of income which were not fully reported. (It appeared that the distribution for 1949, published in the 1951 White Paper on national income, was later revised. The 1952 national income estimates no longer included a table on the distribution of incomes.)

On March 19 and 21, 1952, the chancellor of the exchequer gave rough estimates for the distribution of incomes at that date. Since 1949 the number of incomes above £500 a year had increased by 2,250,000, of which 350,000 were in the range £1,000-£2,000 and 30,000 above £2,000.

The newly available information made it possible to evaluate the effects of the 1952 budget. According to estimates by Joan Mitchell (*Bulletin of the Oxford Institute of Statistics*, June 1952), about two-fifths of the population became worse off as a result of the changes it introduced. (See also BUDGET, NATIONAL.) (T. BAR.)

Weapons: see MUNITIONS OF WAR.

Weather: see METEOROLOGY.

Weeks, Sinclair (1893-), designated by Dwight D. Eisenhower to be U.S. secretary of commerce, was born at West Newton, Mass., on June 15. His father was John W. Weeks, secretary of war under Pres. Warren G. Harding. After graduating from Harvard university, Cambridge, Mass., in 1914, he worked for the First National Bank of Boston, Mass., until 1923, except for a period during World War I when he served overseas as a captain with the 101st field artillery. He later became a successful manufacturer, was president of Reed and Barton, silversmith company of Taunton, Mass., and director of a number of large corporations.

Long active in Republican politics, he became a national committeeman for Massachusetts in 1940. He was treasurer of the Republican national committee from 1941 to 1944, and in the latter year served some months in the U.S. senate, on appointment to fill a vacancy.

In 1949 Weeks was chosen national finance committee chairman of the Republican party.

Weeks was an enthusiastic supporter of Eisenhower in the general's bid for the Republican presidential nomination in 1952, and on Dec. 1 President-elect Eisenhower selected Weeks to serve as secretary of commerce during the coming administration.

West Africa, British: see BRITISH WEST AFRICA.

Western European Union: see EUROPEAN UNION.

Western Samoa: see NEW ZEALAND; TRUST TERRITORIES.

West Indies, British: see BAHAMAS; BARBADOS; JAMAICA; LEEWARD ISLANDS; TRINIDAD AND TOBAGO; WINDWARD ISLANDS.

West Virginia. The 35th state in the Union, West Virginia was admitted conditionally on Dec. 31, 1862, and proclaimed a separate state on April 20, 1863, fully effective 60 days later. It has an area of 24,282.45 sq.mi., of which about 150 sq.mi. are water surface. In 1950 the population was 2,005,552, or only 5.4% more than in 1940. Charleston, the capital, in 1950 had a population of 73,501. Other cities of 10,000 or more population were: Huntington, 86,353; Wheeling, 58,891; Clarksburg, 32,014; Parkersburg, 29,684; Fairmont, 29,346; Morgantown, 25,525; Weirton, 24,005; Bluefield, 21,506; Beckley, 19,397; South Charleston, 16,686; Martinsburg, 15,621; and Moundsville, 14,772. The urban population was 694,487, or 34.6% of the total.

History.—State officers elected in 1952, all Democrats, were: governor, Wm. C. Marland; secretary of state, D. Pitt O'Brien; auditor, Edgar B. Sims; treasurer, Wm. H. Ansel, Jr.; attorney general, John G. Fox; state superintendent of free schools, Wm. W. Trent; and commissioner of agriculture, J. Blaine McLaughlin. They were elected by noticeably decreased majorities which were larger, however, than those in other Democratic border states. At the same time Harley M. Kilgore was returned to the U.S. senate for a consecutive third term, the second in the history of the state; the election of Will E. Neal, Republican, from the 4th district, broke the otherwise solid Democratic representation in congress; Robert H. Mollohan, Democrat, succeeded Robert L. Ramsay in the 1st district.

The year ending June 30, 1952, was one of the worst in the state's history for forest fires. There were 2,111 fires entailing a total loss of several million dollars.

Education.—In 1951-52 the total net enrolment of the 3,719 elementary schools was 293,211. For the 380 high schools (junior and senior) net enrolment was 147,356. There were 10,401 elementary and 5,869 secondary teachers. For the year ending June 30, 1952, total receipts for the public school program were \$74,961,246.78, of which \$24,337,301.41 were collected on general property of local taxing units; \$46,056,699.51 was state aid to the regular program; and \$602,587 was state aid to the county school building programs. Other state funds included, \$38,082.85, aid to crippled children; \$133,286.23, aid to the school lunch program; and \$486,990.79, aid to vocational education. There were nine state-supported institutions of higher learning under control of the state board of education. The state university at Morgantown and Potomac State school at Keyser, a junior college, were under control of a board of governors. There were also eight private and denominational colleges and three private and denominational junior colleges.

Social Insurance and Assistance, Public Welfare and Related Programs.—In the year ending June 30, 1952, the total expenditure of the state department of health was \$2,259,902, of which \$765,835 were federal funds. The federal funds were used in aid of the following programs: general health, \$220,390; venereal disease, \$64,904; mental health, \$43,490; tuberculosis control, \$72,339; cancer control, \$39,969; heart disease, \$27,183; rapid treatment centre, \$48,927; and maternal and child health, \$248,633. Regular expenditures of the department of public assistance totalled \$26,383,428.45, of which \$8,389,287 was for old-age assistance; \$416,747, aid to the blind; \$11,812,935, aid to dependent children; and \$658,495, aid to permanent and totally disabled persons. General relief items and the respective total expenditures were: crippled children, \$446,886.61; medical and hospital aid, \$935,401.12; correction of vision and prevention of blindness, \$24,705.53; child welfare, \$64,793.03; general assistance, \$1,199,092.80; and boarding care, \$670,388.41. A total of \$1,764,696.65 was spent for personal service, current expenses and equipment.

Communication and Transportation.—The mileage of steam railways was about 7,500. Completion of the Huntington airport at a total cost of about \$2,000,000 made most of the important cities of the state accessible to air transportation. In 1951 the total mileage of public roads and streets was 36,959, of which 32,122 was primary (4,894) and secondary (27,228) roads. As of May 1, 1952, the expenditure of \$36,560,149.44 of a \$50,000,000 bond issue for secondary roads, approved in 1948, had been authorized. On Jan. 1, 1952, there were 332,790 Bell telephones, 41,480 phones on lines of connecting companies and 1,544 phones on nonconnecting lines.

Banking and Finance.—Total state receipts for 1951-52, including a cash balance of \$43,732,649.12, as of June 30, 1951, were \$434,721,626, and total disbursements were \$367,811,753.91, leaving a cash balance, as of June 30, 1952, of \$66,909,872. As of the same date, the unappropriated surplus in the state fund, general revenue, was \$11,865,342.09. As of June 30, 1952, the total bonded indebtedness of the state was \$145,677,000. As of June 30, 1952, the total assessed value of property in the state was \$2,778,170,740.

As of June 30, 1952, deposits in 107 state bank and trust companies totalled \$485,139,520.34, and those of 74 national banks were \$557,905,000. Resources of 21 federal savings and loan associations were \$58,382,484.41; of 15 state building and loan associations \$15,610,412.47; and of 26 industrial savings and loan companies \$15,492,605.41. There were

Table I.—Principal Agricultural Products of West Virginia

Crop	Indicated 1952	1951	Average, 1941-50
Corn, bu.	8,856,000	8,580,000	11,306,000
Wheat, bu.	1,128,000	1,073,000	1,452,000
Oats, bu.	1,530,000	1,600,000	1,780,000
Hay (all), tons	958,000	1,048,000	989,000
Apples (commercial), bu.	3,770,000	3,780,000	3,769,000
Potatoes, bu.	1,275,000	1,575,000	2,694,000
Barley, bu.	120,000	286,000	289,000
Tobacco, lb.	4,160,000	4,278,000	3,268,000
Peaches, bu.	574,000	581,000	531,000

Source: U. S. Department of Agriculture.

139 small loan companies with total resources of \$29,530,335.74 and loans of \$25,361,801.32, and 28 chartered credit unions with total resources of \$987,001.67 and loans of \$846,930.40.

Agriculture.—The total gross farm income for 1951 was \$142,175,000. Of this total \$2,155,000 was government payments, \$24,946,000 was from crops, and \$115,074,000 was from livestock and livestock products, sold and traded. The estimated value of products consumed on the farm where produced was \$44,168,000 which left a net cash income of \$98,007,000, or \$19,896,000 less than in 1950. The production of turkeys continued to increase reaching 1,062,000 head which brought a cash return of \$6,359,000 or \$1,050,000 more than in 1950.

Industry.—Manufacturing continued to expand, the 137,650 employees being 31% more than in 1941. The value of their production for 1951 was about \$1,875,000,000. Construction contracts reached their greatest dollar value in 1951, but the value of building permits fell 30% below the 1950 level. The respective totals were \$102,848,000 and \$31,901,000. The respective total pay rolls and incomes of other important industries were: lumber, 10,847 and \$20,649,333; iron and steel, 40,019 and \$155,025,123; glass, pottery, brick and tile, 30,483 and \$92,585,831; and chemical, rayon, paint, leather, and textiles, 37,031 and \$125,628,180. (C. H. A.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in West Virginia in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not available. West Virginia ranks first among the states in the production of coal, and stands fourth in the value of mineral output, with 7% of the U.S. total.

Table II.—Mineral Production of West Virginia

(In short tons, except as noted)

Mineral	Quantity	Value	Quantity	Value
	1950	1950	1949	1949
Clays	570,000	\$ 925,000	478,000	\$ 759,000
Coal	144,116,000	754,370,000	122,611,000	649,697,000
Coke*	3,691,000	40,765,000	3,360,000	36,906,000
Lime	?	?	350,000	3,535,000
Natural gas (thousand cu.ft.)	189,980,000	31,907,000	181,176,000	29,296,000
Natural gasoline (bbl.)	1,048,000	2,899,000	997,000	2,945,000
Petroleum (bbl.)	2,808,000	9,350,000	2,839,000	8,770,000
Petroleum gases (bbl.)	3,575,000	4,195,000	2,763,000	3,591,000
Salt	368,000	1,239,000	356,000	1,289,000
Sand and gravel	3,613,000	6,241,000	3,285,000	5,491,000
Stone	5,368,000	7,826,000	4,855,000	6,960,000
Other minerals . . . . .	...	10,662,000	...	5,786,000
Total		\$829,624,000		\$718,119,000

*Values for processed materials are not included in the totals.

†Value included with other minerals.

Whaling: see FISHERIES.

Wheat. In wheat the year 1952 brought the emerging shadow of a surplus problem. The U.S. wheat crop of 1,298,921,000 bu. was almost as much as the record, about one-third larger than the 987,474,000 bu. of 1951 and substantially above the 1941-50 average of 1,084,664,000 bu. Seeded acreage of 77,500,000 ac. was large, and winter kill and other damage much less than in 1951, resulting in 70,407,000 ac. for harvest, or about 15% more than the 61,424,000 ac. of 1951 and the 63,354,000 ac. average of 1941-50. Average yields, too, were excellent at 18.4 bu. per acre, as compared with 16.1 bu. in 1951 and 17.7 bu. for the decade.

The winter wheat crop, which fortunately matured before the intense summer drought in the southern Great Plains, was 1,062,590,000 bu., the largest on record, 65% larger than the 645,469,000 bu. of 1951 and one-third larger than the 799,977,000-bu. average of 1941-50. The average yield of 21.1 bu. per acre was large, compared with only 16.2 in 1951 and an average of 17.7 bu. per acre for the previous decade.

A spring wheat crop of 236,331,000 bu. was sharply below the excellent crop of 342,005,000 bu. in 1951 and the 1941-50 average of 284,687,000 bu. Seeded acreage, though below March intentions and the 21,662,000 ac. harvested in 1951, did give 20,129,000 ac. for harvest, as compared with a 1941-50 average of 18,110,000 ac. The average per acre yield of 11.7 bu. was

Table I.—U.S. Wheat Production by Leading States
(In thousands of bushels)

State	Prelim. 1952	1951	Average 1941-50
Kansas	308,676	126,113	197,949
Oklahoma	108,927	38,902	71,737
North Dakota	102,309	150,975	140,940
Nebraska	97,371	58,073	70,067
Montana	77,458	97,988	72,532
Washington	77,334	75,152	64,395
Ohio	56,700	34,308	46,908
Colorado	50,159	34,967	37,371
Illinois	44,762	33,383	27,106
Idaho	42,352	37,968	32,160
Texas	40,380	17,307	60,347
Indiana	39,470	23,529	29,828
Michigan	38,186	30,800	24,625
South Dakota	30,681	57,260	41,914
Oregon	30,568	28,999	23,350
Missouri	26,378	22,406	20,644
Pennsylvania	19,012	18,832	18,548
Minnesota	17,166	20,022	20,346
California	14,630	9,741	10,990
New York	12,880	10,319	8,504

sharply below the average for the decade and the 15.8 bu. of 1951.

Durum wheat, which has hard, vitreous kernels high in protein and is used largely in macaroni and similar pastes, was a small crop of only 21,424,000 bu. in 1952, as compared with 35,820,000 bu. in 1951 and a 1941-50 average of 37,950,000 bu.

Hard red winter wheat from the southern Great Plains continued to be the strongly dominant class with 715,749,000 bu., compared with 376,636,000 bu. in 1951 and an average for 1941-50 of 520,816,000 bu. Soft red winter wheat was also abundant, 203,556,000 bu., as compared with 150,748,000 bu. in 1951. The hard red spring class of 177,962,000 bu. was sharply less than the 261,830,000 bu. of 1951 and moderately lower than the 212,899,000 bu. average for 1941-50.

U.S. wheat and flour exports in 1951-52 went much beyond preliminary estimates, reaching 477,883,000 bu. (wheat equivalent), exceeded very slightly by exports in 1947-48 and moderately by the 505,304,000-bu. record of 1948-49. The value of the wheat exported in 1951-52 was \$1,066,800,000, as compared with \$748,700,000 the previous year. Approximately the full U.S. quota of about 253,000,000 bu. committed under the International Wheat agreement was taken in 1951-52, and in October about one-third of the quota for the new year had been sold. Additional export amounts moved under Mutual Security agency financing. In fact, of 28,396,000,000 lb. of U.S. wheat exported in one form or another (of 47,283,000,000 lb. of all food exports), 12,137,000,000 lb. moved to MSA-participating European countries and 10,426,000,000 lb. to Asia, mostly India and Japan.

Feed wheat, frost-shrivelled wheat from Canada, in amount of 29,920,000 bu., valued at \$47,562,000, was imported in 1951-52, as compared with 11,647,000 bu. in the previous year. Less than 8,000,000 bu. of other wheat came in, mostly from Canada, to be milled in bond and exported.

Prices fluctuated moderately during the year, rising to approximately the loan level of \$2.20 per bushel to producers early in the year before the new crop came to market, then dropping below the loan level to an average of \$2.07 per bushel in October, as compared with \$2.10 a year before. Farmers were officially advised to hold some of their wheat off the market and place it under the support structure to improve prices—and it appeared that as much as 500,000,000 bu. might be put under the support program; the rate into September was double that of the previous year.

In summary, the total U.S. wheat supply for 1952-53 was estimated at 1,577,000,000 bu., consisting of 1,298,000,000 bu. from the new crop and old stocks of 254,000,000 bu., plus perhaps 25,000,000 bu. of imports, mostly feed wheat. About 700,000,000 bu. would be required domestically for food, seed and feed, leaving about 875,000,000 bu. for export and carry-over. Exports, including 253,000,000 bu. under the International

Wheat agreement on which initial export subsidies of 36 to 50 cents per bushel were authorized in June, would amount to at least 300,000,000 bu., leaving a carry-over July 1, 1953, perhaps as high as 575,000,000 bu. The government faced this situation by announcing a national wheat goal of 72,000,000 ac., down from 77,500,000 ac. in 1952, which at average yields would produce 1,080,000,000 bu. in 1953, to be supported at not less than \$2.21 per bushel.

Table II.—World Wheat Production for Selected Areas

Country	(In millions of bushels)			Average, 1935-39
	Estimated 1952	1951	1950	
United States	1,298	987	1,019	759
Canada	688	553	462	312
Mexico	18	16	20	14
Europe	1,635	1,580	1,525	1,599
Great Britain	81	86	97	62
North Africa	99	76	87	73
Union of South Africa		25	26	16
Asia	1,625	1,630	1,535	1,498
India	245	246	235	262
Pakistan	125	148	148	117
Argentina	250(?)	75	213	222
Australia	150(?)	161	184	170
U.S.S.R. . . . .	...	...	1,110	1,240
World total	7,150	6,485	6,320	6,024

A record 1952-53 world wheat crop of as much as 7,150,000,000 bu. was indicated in autumn 1952, as compared with an above-average crop in 1951-52 of 6,485,000,000 bu. The acreage was estimated at 444,610,000 ac., as compared with 427,490,000 ac. in 1951 and 418,940,000 ac. prewar.

North America contributed about 30% of the total, and the Canadian record crop was more than twice as large as the pre-war average. The initial price paid by the Canadian Wheat board to producers was increased from \$1.40 to \$1.60 per bushel.

Production in most other major regions increased somewhat as compared with 1951-52.

Turkey became a source of nondollar surplus grain when its estimated record crop of 11,500,000 metric tons provided as much as 2,000,000 tons for export. Syria had a record crop and France's crop of 295,000,000 bu., 14% more than in 1951, was expected to provide some exports.

Stocks as of July 1 in the principal exporting countries were preliminarily estimated at 35,000,000 bu. in Argentina (85,000,000 bu. in 1951 and 134,000,000-bu. average); in Australia, 80,000,000 bu. against 100,000,000 bu. in 1951; in Canada, 270,000,000 bu., as compared with 235,000,000 bu. in 1951 and an average since the war of 157,000,000 bu. These, with U.S. stocks, gave a total of about 639,000,000 bu., as compared with 816,000,000 bu. July 1, 1951, but only 559,000,000 bu. as average 1945-49.

Meanwhile, Argentina, normally an important wheat exporter, contracted to buy 206,000 tons of U.S. wheat, for shipment in Aug.-Oct. 1952, in a triangular deal which was reported as involving movement of 254,000 tons of Argentinian corn to France and 200,000 tons of French barley to the U.S. Canada's exports of wheat and flour in 1951-52 were 356,100,000 bu., second only to the record 407,600,000 bu. exported in 1928-29. The United Kingdom in September agreed to buy 115,000,000 bu. of wheat from Canada under the International Wheat agreement during 1952-53, somewhat more than in 1951-52.

Delegates from 46 countries met in London for three weeks in April and May to lay the basis for an extension of the International Wheat agreement due to end July 31, 1953. They were reported to have reached a deadlock on quantities and prices, the exporting countries wanting something more than \$2.00 per bushel maximum price, as compared with \$1.80 under the existing agreement and a world price of perhaps \$2.40 per bushel. Additional efforts at renewal were scheduled for late in 1952 and early in 1953.

(See also FLOUR.)

(J. K. R.)



PLANNING MERCY FLIGHTS to bring food to starving deer in the Alps mountains, from a U.S. air force base near Munich, Ger., early in 1952

Wildlife Conservation. The increasing emphasis by wildlife conservationists in the United States on the interrelationships of all aspects of natural resources conservation was significantly evident in 1952 in the proposal of a "national policy for renewable natural resources" formulated by 36 conservation and scientific organizations comprising the Natural Resources Council of America. Presented at the North American Wildlife conference in Miami, Fla., on March 18, the policy—designed "to provide the means for a high standard of living in a healthful environment"—was described as "for the use of our basic resources of soil, water, plants, and animals, so as to maintain them through the years and prevent their waste and depletion." The ten-point policy recommended called for (1) inventories of renewable resources and (2) a "comprehensive scientific conservation plan for every farm, ranch, small watershed, and other operating unit of the nation's land and water." It outlined (3) a nine-point policy of use, emphasized (4) the responsibility for conservation that goes with land ownership and recommended (5) that "a sufficient number of examples of every type of natural area should be preserved and kept perpetually as inviolate natural and wilderness areas for their scientific, educational, and esthetic values." It called for (6) efficient resource administration, urged (7) public participation in conservation and stressed (8) "national need versus political expediency." The policy's ninth point maintained: "An independent Board of Review, composed of five members who have no affiliation with any federal agency but have outstanding interest in public affairs, should be created to review the need, cost, and desirability of all federal land and water projects and basin-wide programs." Finally the statement declared that, "To make this policy effective, Congress should pass legislation enacting it into basic law." Endorsed at its Miami introduction by a panel of speakers, including United States Sen. James H. Duff of Pennsylvania and Rep. Clark W. Thompson of Texas, the policy was widely distributed during the year and steps leading toward its adoption by the congress were taken at the Natural Resources council's annual meeting

held Oct. 9 to 11 in the Okefenokee National Wildlife refuge in Georgia.

A significant event of the year was the publication of *The Conservation Yearbook, 1952*, first in a series of annual volumes projected under the editorship of Erle Kauffman, published by the Conservation Yearbook, 1740 K Street N.W., Washington 6, D.C. Subtitled "A Directory and Guide to Facts, Figures, and People in American Conservation," the 288-page volume was presented in several sections: Conservation and Legislation, Conservation Organizations, The Conservation Estate, Conservation Facts and Figures, Conservation Publications and an index. (See also NATIONAL PARKS AND MONUMENTS.) (H. Z.)

Canada.—National Wildlife week was observed throughout Canada from April 6 to 12, 1952, inclusive; it was dedicated to the memory of Jack Miner, whose work in wildlife conservation had been universally acclaimed. The Canadian Conservation association, whose activities had been suspended in 1943 as a result of the war, was reorganized in 1952.

Despite a fourfold increase in hunting between 1948 and 1952, Ontario game authorities stated that the province's supply of moose, deer, pheasants, Hungarian partridges and ruffed grouse was holding up well, and even increasing, as a result of restocking programs. Conservation measures in Saskatchewan had brought beaver back so far that the 1952 season was extended five months and trapping quotas were raised from one to two or three per colony. In 1947 there were less than 600 beaver houses in the Quinte district of Ontario; in 1951 a census revealed there were 3,427 beaver houses; the increase was credited to improved forest management and forest protection programs.

The United States organization, Ducks Unlimited, budgeted \$2,000,000 for water conservation projects in Canada, to be spent at the rate of \$500,000 per year beginning with 1953. The 1952 appropriation totalled \$300,000, of which \$112,000 was used to build dams in Alberta. The Ontario government announced a province-wide water conservation program, in which farmers would be assisted in building farm ponds. Two workers of the U.S. wildlife service found the summer breeding ground of the whooping crane in Great Slave lake marshes. (C. Cy.)

Other Countries.—The third general assembly of the International Union for the Protection of Nature was held in Caracas, Venezuela, during Sept. 3–9. Delegates and observers from 29 countries and representatives of several international bodies attended. Technical meetings were held at which the following subjects were considered: the effects of fire on vegetation; the preservation of wildlife in semiarid regions; the preservation of endemic zoological and botanical species on small islands, especially in the Caribbean sea; and the raising of rare animals in semicaptivity outside their natural habitat.

Many resolutions were adopted, an important one being that the import of animals illegally taken in their native country should be prohibited in all other countries.

Acting under the National Parks and Access to the Countryside act of 1949, the Nature Conservancy established seven nature reserves in England and one in Scotland—one other in Scotland, the Beinn Eighe, having been established in 1951. These reserves ensured the preservation of areas of special botanical and faunal interest. A government bill, the Poaching of Deer (Scotland) bill, was introduced and passed all stages in the house of lords, and the Deer (Close Season) committee was set up to consider the question of a closed season for deer in Scotland.

The government of India set up a Central Board for Wild Life under the chairmanship of the maharaja of Mysore. Many interested bodies were represented, among them the Bengal and the Bombay natural history societies. The name of the Kaziranga reserve in Assam was, in keeping with the times, changed to Kaziranga Wild Life sanctuary. It was estimated that there were at least 150 Great Indian rhinoceroses in the sanctuary, being probably about half the total number of this species of rhinoceros still existing in the world.

In South Africa the Eastern province branch of the Wild Life Protection society took steps to protect the vanishing oribi and opened an Oribi fund. Oribi were introduced into the Mountain Zebra national park.

The government of Uganda, coming into line with other governments in Africa, established two national parks. The Queen Elizabeth national park of 700 sq.mi. was formed in the western rift between Lake George and Lake Edward. The 1,200 sq.mi. of the Murchison Falls national park include the falls themselves where the Nile plunges through a narrow gap.

The great reduction in the numbers of the American flamingo (*Phoenicopterus ruber*), a species centred around the Gulf of Mexico, having been a cause of concern, a survey of its status and remaining breeding localities was carried out under the auspices of the National Audubon Society of New York. The critical place for the survival of the flamingo proved to be the Bahamas where no less than 53% of the total world population breed on Inagua Island. An appeal in the Bahamas to save the flamingo received a gratifying response and the Society for the Protection of the Flamingo in the Bahamas was formed.

In Italy the existence of the Gran Paradiso national park was threatened by hydroelectric works, but the appeal of the park authorities to the supreme court in Rome was successful, and the park, together with its wildlife, particularly the alpine ibex, was saved.

(C. L. BE.)

Wiley, Alexander (1884–), U.S. senator, was born on May 26 at Chippewa Falls, Wis. He took undergraduate work at Augsburg college, Minneapolis, Minn., from 1902 to 1904, then studied law at the University of Michigan, Ann Arbor (1904–06), and took his law degree at the University of Wisconsin, Madison, in 1907. Admitted to the Wisconsin bar that year, he set up practice in his native town. From 1909 to 1915 he was district attorney of Chippewa county;

he also engaged in farming and banking. In 1938 he was elected as a Republican to the U.S. senate; he was re-elected in 1944, and again in 1950 for the term 1951–57. When the Republicans gained control of the 80th congress in the fall elections of 1946, Wiley was named chairman of the senate judiciary committee (Jan. 1947). A member of the conservative wing of the Republican party, he was in opposition to most of the New Deal and Fair Deal domestic programs. Although maintaining a critical attitude toward the Roosevelt and Truman foreign policies, he frequently supported them—voting, for example, for U.S. entry into the United Nations and disagreeing in Jan. 1951 with the views of both Herbert C. Hoover and Sen. Robert A. Taft on foreign policy. On April 19, 1952, Sen. Wiley declared that the Democratic foreign policy had been at least partially successful and that therefore the Republicans should not criticize it across the board.

Wilson, Charles Erwin (1890–), U.S. business executive and government official, was born on July 18 at Minerva, O. After graduating from the Carnegie Institute of Technology, Pittsburgh, Pa., in 1909, he went to work as an electrical engineer for the Westinghouse Electric and Manufacturing company, where he designed the first automobile “self-starting” motor produced by that company. He joined General Motors corporation in 1919 as an executive of one of the subsidiary companies; in 1929 he became a vice-president of the corporation and in 1941 president. During World War II Wilson was a key figure in the U.S. armament program, and General Motors was awarded war contracts valued at approximately \$12,000,000,000. Both during and after the war period he continuously pointed to the need for a permanent U.S. defense program that could be diverted speedily to war or peace production with a minimum of economic dislocation.

Wilson (sometimes confused with Charles Edward Wilson, a president of General Electric company and director of the Office of Defense Mobilization from 1950 to 1952) was chosen to be the new U.S. secretary of defense by Dwight D. Eisenhower on Nov. 20, 1952.

Windward Islands. The British colonies of Grenada, St. Vincent, St. Lucia and Dominica, forming the southern part of the Lesser Antilles in the Caribbean, constitute the British Windward Islands. Pop.: 95% Negro; some Caribs on Dominica. Language: English; on Dominica and St. Lucia also French patois. Religion: Christian. Governor in 1952, Sir Robert Arundell.

History.—During 1952 all four colonies of the Windward Islands completed their first year under new constitutions, which granted full adult suffrage and provided increased power to the elected representatives. The growing pains which are almost inseparable from such a development—especially when it is accompanied by a growth of trade unionism, as in the Windwards—were not absent; but there were no serious troubles. Particular interest was attached to the appointment of a Jamaican, H. L. Lindo, as administrator of Dominica.

In St. Vincent, the sea island cotton crop was very good; and the Leeward Land Settlement estates, growing cotton, arrowroot and other crops, showed a handsome profit. The team of experts which visited St. Lucia in 1951 issued a comprehensive report on the island's agriculture, and a colonial development and wel-

	Area (sq.mi.)	Population (1946 census)	(1951 est.)	Capitals	(1946 census)
Grenada	133*	72,387	76,000	St. George's†	(5,774)
St. Vincent	150*	61,647	68,000	Kingstown	(4,831)
St. Lucia	233	70,113	81,000	Castries	(7,056)
Dominica	305	47,624	55,000	Roseau	(9,751)

*Excluding the Grenadines (8 sq.mi.) attached in part to Grenada and in part to St. Vincent. †Seat of governor.

fare grant of £200,000 was made to help in the implementation of its recommendations. The development on Dominica of a livestock centre and land-use experimental station went ahead satisfactorily. On the other hand, some anxiety was felt in Grenada at the fall in the price of nutmegs, the island's chief crop.

Education.—Average school attendance (1951): Grenada (1950) 13,500; St. Vincent 9,612; St. Lucia 9,251; Dominica 6,457.

Finance and Trade.—Monetary unit: British Caribbean dollar, valued in 1952 at 58.33 cents U.S. Figures in the table are in British Caribbean dollars.

	Budget (1952 est.) Revenue*	Expenditure*	Foreign Trade (1951) Imports	Exports
Grenada	\$3,231,875	\$3,274,554	\$7,897,358	\$6,130,996
St. Vincent	1,649,581	1,914,037	4,492,457	2,590,801
St. Lucia	2,249,642	2,498,506	6,067,777	2,399,418
Dominica	1,496,100	1,877,210	5,224,065	2,728,932

*Excluding grants-in-aid and Colonial Development and Welfare.

Principal exports: arrowroot, bananas, citrus products, cocoa, copra, sea island cotton, mace and nutmegs, sugar. (P. H-Mv.)

Wines. Total world wine production during 1952 amounted to 4,922,700,000 gal., according to official reports and estimates, compared with 5,170,700,000 gal. during 1951 (a more accurate figure), approximately a 5% decrease. Some figures, notably those from Soviet-influenced countries, were pure estimates.

France, the largest producer of wine in 1952, decided to reduce the area of its vineyards by 16% to increase over-all quality and to limit production. The total production of famous growth (*Appellation Contrôlée*) wines was of very fine quality and somewhat in excess of the 116,000,000 gal. produced in 1951. The famous growths of Burgundy produced 2,110,000 gal. against 2,375,000 the previous year, the quality being very satisfying. Bordeaux over-all production showed a 15% decrease, the red wines equalling and the white wines being 50% less than 1951 production, because of violent hailstorms; however, the quality of both was excellent. Alsace produced good quality wine but with a 30% decrease in quantity. Champagne produced 10,560,000 gal., double that of the 1951 yield and of good quality. Algerian production was off 17% from 1951.

In Spain the Jerez district produced a normal quantity of 9,250,000 gal. against 10,560,000 gal. in the previous year. In Portugal port wine, controlled to a diminishing world demand, was held to 4,878,000 gal., 16% less than in 1951; Madeira pro-



PORT VINTAGE TIME in Alto Douro, Port., where the villager's day began with a walk along miles of dusty roads to his place in the terraced vineyards above the village; grapes ready for pressing were then picked until sunset

duced 1,900,000 gal.

United States production for 1952 was estimated to be slightly less than that of 1951, while wine consumption, spurred by heavily increased taxes on spirits, rose greatly. In California a marketing order was established to control the quality of grapes used for wine.

During 1951 the International Wine bureau made plans to issue two new publications—a dictionary of wine terms in four languages and an atlas of all wine-growing areas of the world.

(J. WE.)

Wisconsin. One of the north central states of the United States, Wisconsin, popularly called the "Badger state," entered the union as the 30th state in 1848. Area: 56,154 sq.mi., of which 1,449 sq.mi. are water. Pop. (1950 census) 3,434,575 (1951 estimate) 3,475,000. Capital, Madison (1950 census, 96,056). Milwaukee (637,392) is the largest city. Other large cities are Racine (71,193), Kenosha (54,368), Green Bay (52,735) and La Crosse (47,535).

History.—The Republican party swept Wisconsin in the 1952 elections. For president, Dwight D. Eisenhower defeated Adlai Stevenson by 357,569 votes, polling 979,744 to Stevenson's 622,175. Gov. Walter J. Kohler, Jr. (Rep.), was elected for a second term by a record gubernatorial plurality of 403,620. Fred R. Zimmerman (Rep.), perennial secretary of state, led his ticket with the largest vote ever received by any candidate in the history of the state, 1,039,317. Also re-elected by margins of more than 400,000 votes were George M. Smith (Rep.), lieutenant governor; Warren R. Smith (Rep.), state treasurer; Vernon W. Thomson (Rep.), attorney general. U.S. Sen. Joseph R. McCarthy (Rep.) was re-elected by a plurality of 145,721. A constitutional amendment to permit redistricting of the state on a 60-40 population-area basis instead of strictly in proportion to population was defeated by a narrow margin.

World Production of Wine

Country	1952	1951	Average	Quality 1952
	(Millions of gallons)			
Algeria	303.8	363.1	319.2 (1946-51)	Good
Argentina	317.0	291.7	303.3 (1948-51)	
Australia	42.0	30.0	38.4 (1946-50)	
Austria	17.5	27.5	29.5 (1945-50)	Very good
Brazil	32.0*	32.0	...	
Canada	11.3*	11.3	...	
Chile	5.1	5.7	5.6 (1942-51)	Exceptionally good
China	55.5	84.0	81.9 (1942-50)	
Cyprus	7.2*	7.2	...	
Czechoslovakia	10.8*	10.8	10.9 (1935-39)	
Egypt	0.8*	0.8	...	
France	1,300.0	1,334.3	1,555.6 (1930-39)	Very good
Germany	66.0	82.2	48.6 (1939-51)	Good
Greece	123.9	100.4	111.0 (1947-51)	
Hungary	97.2*	97.2	94.0 (1930-40)	
Iran	0.1	0.1	...	
Israel	1.7*	1.7	1.5 (1945-50)	
Italy	1,003.9	1,201.1	1,060.0	Good
Japan	1.8*	1.8	...	
Lebanon	0.8*	0.8	...	
Luxembourg	2.6*	2.6	2.4 (1935-39)	
Malta	1.3*	1.3	...	
Mexico	0.3*	0.3	...	
Morocco	16.0	21.0	14.7 (1935-39)	Variable
New Zealand	0.7	0.8	...	
Peru	3.5*	3.5	4.2 (1945-51)	
Portugal	147.6	252.6	236.6 (1947-51)	Normal
Rumania	110.0*	110.0	222.0 (1946-50)	
South Africa	59.3	76.8	57.6 (1940-48)	Good
Spain	528.0	345.1	449.0 (1946-50)	
Switzerland	20.1	27.5	20.2 (1941-50)	
Tunisia	17.2*	17.2	...	No variation
Turkey	4.5	3.8	...	
Uruguay	25.4*	25.4	16.0 (1935-39)	
U.S.A.	158.0	169.4	...	No variation
U.S.S.R.	273.0*	273.0	...	
Yugoslavia	156.7*	156.7	124.6 (1935-39)	
Total	4,922.7	5,170.7		

Countries like the United States, marked "No variation" in the above table, produce uniform wines from year to year because of stable climatic conditions and methods of production used.

*Provisional figure, same as previous year.

Education.—There were 5,530 elementary schools, 443 secondary schools, 23 county normal schools and 9 state colleges in 1951-52. Total elementary school enrolment was 355,509; secondary schools 148,380; county normal schools 1,149. Elementary schools employed 14,484 teachers; secondary schools 6,866; county normal schools 114. Faculty members in the state college numbered 587, teaching 7,361 college and 2,235 training-school students. During the fiscal year 1950-51, state aids to education amounted to \$21,681,178; total expenditures in elementary and secondary schools were \$131,790,676.

Social Insurance and Assistance, Public Welfare and Related Programs.—The number of cases receiving public assistance as of June 30, 1952, was as follows: general relief 5,432; old-age assistance 51,117; aid to the blind 1,331; aid to the totally and permanently disabled 969; aid to dependent children in their own or a relative's home 8,321; aid to dependent children in a foster home 1,481; a total of 68,651 households. Expenditures for public assistance in the year ending June 30, 1952, were: general relief \$4,503,230; old-age assistance \$33,335,191; aid to the blind \$979,238; aid to the totally and permanently disabled \$733,825; aid to dependent children in their own or a relative's home \$11,210,417; aid to dependent children in a foster home \$855,619; making a grand total of \$51,617,520. Civilian unemployment benefits for the fiscal year 1951-52 totalled \$11,135,638; contributions collected amounted to \$18,326,505.

The cost of operating Wisconsin's 12 charitable, mental and correctional institutions for the year ending June 30, 1952, was \$14,233,980. The average daily population for June 1952 was 7,348.

Communications.—Public highways as of Jan. 1, 1952, totalled 95,012 mi. divided as follows: 86,004 (towns), 2,532 (villages), 6,476 (cities). Expenditures by the highway commission during the fiscal year 1951-52 were \$76,115,261. Railway mileage (steam and electric) as of Dec. 31, 1951, was 6,493.35 with 54.86 mi. of trolley coach route (trackless). On Jan. 1, 1952, there were 1,020,691 telephones. As of Oct. 1, 1952, there were 144 airports and 11 seaplane bases.

Banking and Finance.—As of June 30, 1952, there were 95 national banks which had deposits amounting to \$1,546,791,000 and assets of \$1,653,530,000. At the end of the calendar year 1951, state banks numbered 462, an increase of 1 over 1950. Deposits totalled \$1,713,085,960; assets were \$1,837,277,223. Credit unions increased from 542 in 1950 to 557 in 1951, and listed assets of \$54,655,174. Assets of the 113 state-chartered savings and loan associations were \$303,641,644.

State receipts for the fiscal year 1951-52 were \$241,643,648; disbursements amounted to \$257,325,876. Taxes collected by the state and returned to local subdivisions totalled \$73,920,119; agency collections returned to counties were \$2,563,871; state aids were \$72,942,572; transferred from the general fund to other funds (building fund, retirement fund, veterans' fund, etc.) \$27,017,514.

Agriculture.—Total acreage harvested in 1952 was 9,825,000. Cash receipts in 1951 amounted to \$1,127,517,000 consisting of \$1,009,666,000 from livestock and livestock products and \$117,851,000 from crops. In 1952, although some crops showed a slight decrease in quantity below 1951, the quality was higher. Canning crops, except tomatoes, were larger than average.

Manufacturing.—The total value of manufactured products in Wisconsin increased from \$2,360,947,000 in 1949 to \$2,687,346,000 in 1950. The most important industries in value of manufactured products in 1949 were machinery (except electrical), food and kindred products, paper and allied products, transportation equipment and fabricated metal products. In 1951 the estimated average number of wage earners in Wisconsin manufacturing establishments was 459,700 as compared with 426,800 in 1950 and 405,500 in 1949. The average estimated weekly pay roll rose from \$20,752,000 in 1950 to \$24,735,000 in 1951. (C. L. L.)

Mineral Production.—Table II shows the tonnage and value of mineral commodities produced in Wisconsin in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not available. Wisconsin ranks 34th among the states in value of mineral output, with 0.35% of the U.S. total.

Table I.—Principal Crops of Wisconsin

Crop	Indicated 1952	1951	Average, 1941-1950
Corn (bu.)	124,280,000	103,759,000	111,416,000
Oats (bu.)	130,118,000	143,302,000	117,913,000
Tobacco (lb.)	22,002,000	22,889,000	32,468,000
Potatoes (bu.)	11,115,000	9,805,000	12,820,000
Barley (bu.)	3,150,000	6,633,000	8,364,000
Wheat (bu.)	1,784,000	1,856,000	2,000,000
Flaxseed (bu.)	145,000	150,000	145,000
Soybeans (bu.)	666,000	638,000	514,000
All hay (tons)	8,440,000	8,883,000	6,786,000
Alfalfa (tons)	3,223,000	3,566,000	3,957,000
Alfalfa and timothy (tons)	4,627,000	5,021,000	2,361,000
Cherries (tons)	10,900	14,500	12,750
Cranberries (bbl.)	195,000	194,000	147,100
Apples (bu.)	1,204,000	1,207,000	936,000

Source: U.S. Department of Agriculture.

Table II.—Mineral Production of Wisconsin

Mineral	(In short tons)		1949	
	Quantity	Value	Quantity	Value
Iron ore	1,905,000	*	1,574,000	*
Lead	532	\$ 144,000	857	\$ 271,000
Lime	125,000	1,448,000	107,000	1,255,000
Sand and gravel	19,117,000	11,959,000	17,023,000	10,457,000
Stone	7,000,000	14,495,000	7,327,000	13,636,000
Zinc	5,722	1,625,000	5,295	1,313,000
Other minerals . . . . .	...	10,022,000	...	8,946,000
Total		\$41,693,000		\$35,878,000

*Value included with other minerals.

Withholding Tax: see LAW.

Woman's Christian Temperance Union, National: see SOCIETIES AND ASSOCIATIONS, U.S.

Women's Clubs, General Federation of: see SOCIETIES AND ASSOCIATIONS, U.S.

Women's Fashions. The year 1952 was one of transition in women's fashions. The silhouette was in the process of slimming and softening: the full-blown skirts over crinolines, petticoats and stiffened linings began to narrow down; the stiff taffeta, faille, alpaca and starched cottons of 1950-51 were replaced by more supple silks such as crepe, barathea and chiffon. Hard-finished wools gave way to spongy tweeds, sheer wools and jersey.

The full skirt remained popular with young girls, but they also welcomed the "siren sheath" for both day and evening wear. This was not the shapeless bag of the 1920s; it outlined the figure closely from bosom to hipline. The waistline area was often indented with a wide cummerbund, satin sash or elastic belt or gored in to a princess line without a belt. The nipped waistline in suits and the tiny cinched waist in dresses relaxed and deepened into the long curve of the hourglass torso.

Skirt shapes kept to a smooth moulded hipline but often flared out below in pleats, "morning glory" gores or trumpet flounces. There were many all-over pleated dresses and by new processes the pleating was rendered permanent, crease-resistant and often washable. Hemlines were on the downward trend, dropping about one inch a season.

In the second half of the year, the silhouette assumed bulk at the top and suits and coats lost their form-fitting shape. The concave front, "spoon back" and the straight cardigan replaced the fitted jacket. Coats narrowed from "tents" to "columns."

It was a year of elaborate "hidden" dressmaking; even narrow skirts were silk-lined to rustle and round out over the hips and bodices for both day and evening were boned.

The death of King George VI of England and the accession of the lovely young Queen Elizabeth II brought a flurry of revived Elizabethan fashions and fashion terms: the long pointed Tudor bodice, upstanding Elizabethan collars, farthingale pads at the sides of the skirts and jewelled velvet dresses. Tiaras and little crowns became evening jewellery fads.

Italy and Spain both vied for attention as new centres of fashion inspiration. Leading designers in Rome and Florence organized showings for United States buyers and for the press. *Couturiers* in Madrid and Barcelona followed suit.

Italy influenced shoe fashions with mule sandals, held on by narrow bands across the instep, leaving most of the foot bare. Barefoot shoes were worn on the street as well as for sport and evening.

Throughout the year, fabric was the focal point of fashion. A long-haired, curly wool called "poodle cloth" by its originator, Jacques Lesur, dominated the coat-fabric field and became a popular byword. After poodle cloth came straight-haired wools, carefully brushed and silky, and other thick, downy cloths. Tweeds returned to fashion and were used more for cosmopolitan than country clothes. Silk was the leading dress fabric, even in the budget-priced field. Silk crepe, chiffon and oriental gauzes assumed importance as the silhouette narrowed and softened. Silk and velvet coats were a favourite afternoon and evening fashion.

Much prominence was given to the "miracle fabrics" of synthetic yarns which boasted superperformance in washing, quick drying and insulation against heat and cold.

The "sweater girl" came back into prominence; the 1952 sweater was highly decorative, form fitting and individual—a far cry from the college girls' "sloppy Joe" of the war years.



Above, left: DRESS AND JACKET of screen tweed, a 1952 spring costume

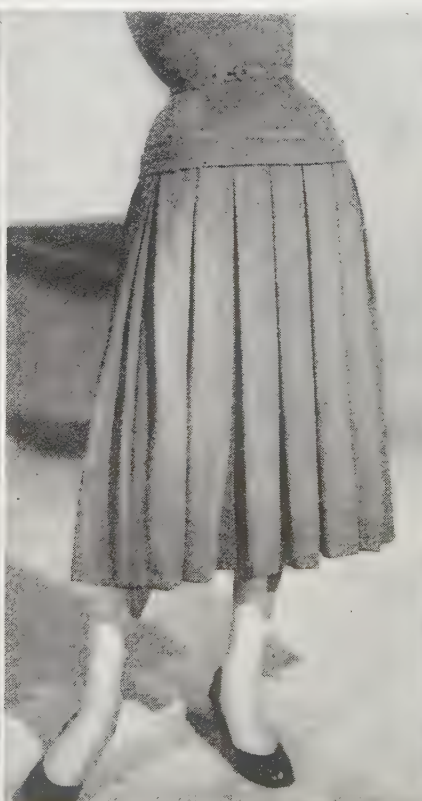


Above, right: EVENING GOWN giving the elongated look for exaggerating the length of the figure, a fashion note characteristic of 1952

Below, left: THE PENCIL SLIM skirt of 1952, worn here with hip-hugger cardigan jacket

Below, right: WOOL FLEECE wrapped coat with the batwing sleeves popular in 1952

Below, Centre: THE YOKED HIPLINE of 1952



Sweaters were patterned in stripes and in plaids, and elaborate beading made the evening sweater opulent and expensive.

Necklines stopped plunging and curved in wide shallow arcs. Strapless dresses were usually veiled with fichus or stoles. The stole was the most popular all-round accessory, being worn any time from morning until night in fur, knit, wool to match the suit, dress or coat and in sweeping satin or tulle for evening.

Hat fashions, long limited to the small hat worn flat on top of the head, changed noticeably to higher, pointed shapes and moved very sharply forward, backward or to one side. Pointed helmets and turbans completely concealed the hair. Elaborately jewelled evening caps, pillboxes and evening veils were popular. Hats were light and soft and seldom elaborately trimmed except for jewel embroidery.

The "poodle cut" and the "pony tail" hairdo were the favourite of smart women as well as young girls. By the summer of 1952, however, hair began to go glamorous, with a return to soft waves and long bobs. The "Mamie bang," imitating Mrs. Dwight Eisenhower's neat forehead ringlets, became a pronounced fad.

Also growing bulkier, more noticeable and "noisy" was jewelry. Many-strand pearl bibs and long or large loop earrings glittered at throat and ears, with both day and evening wear.

(E. L.)

Wool. Because of drought conditions in some of the major southern hemisphere wool-producing nations, world production figures of wool in 1951 were necessarily revised downward, although they were still larger than the 1950 totals. Although adverse weather conditions continued in some areas in 1952, it was believed that production of wool for that year probably showed a slight increase over 1951. The high price of wool in 1950 and 1951 caused a rise in the number of sheep, the wool from which appeared to have offset a large part of the loss by drought. Because of greatly reduced prices for wool in 1952, however, the slaughter of sheep for meat apparently increased, with the result that pulled wool production was probably higher in 1952 than in 1951.

For the second successive year, the apparel wool industry throughout the world encountered consumer resistance to high prices for wool clothing, and the consumption of apparel wool declined substantially. On the other hand, carpet wools were in good demand and prices were strong, mainly because two large sources of supply, China and Tibet, were virtually eliminated from the world markets.

In spite of a drop in the use of apparel wools in 1952, sales held up remarkably well in most producing countries with the exception of Argentina. In that country the holding of wools for sale well above the world price level resulted in such a small volume of business that unsold wool stocks accumulated in 1951 and 1952 to the largest total ever recorded, with several hundred million pounds believed unsold in that country by Sept. 1952. Since the depressed state of the apparel wool in-

dustry was world-wide, statistics in the United States during the first nine months of 1952 merely tended to confirm this fact. Wool production in the United States was estimated to have increased about 5,000,000 lb., but consumption of apparel wools in that country declined at the rate of about 112,000,000 lb., or 20%, for the year.

The world price for apparel wools declined throughout much of the first nine months of 1952, and in September average prices in the United States, closely following the world markets, were about \$1.50 per clean pound compared with \$1.70 the first of the year, and the record high of \$3.63 in March 1951.

At the reopening of the wool markets in Australia in September, prices continued to ease and aggravated still further the buying policies of the large consuming countries. These lower prices, however, were followed in late September by firming tendencies and by the middle of October wool prices were steady to strong throughout the world. (See also TEXTILE INDUSTRY.)

(S. L. L.)

Words and Meanings, New. English adds many new words to its vocabulary every year, some destined to live long, others to die soon. The words listed below, pertaining largely to 1951-52, are but a small residue of those collected by the committee preparing this article.

Several groups of the coinages below may be commented upon briefly. As usual, scientific and technological advances were well represented among the new words and meanings: witness "ATA," "Dormison," "intoximeter," "isonicotinic acid (hydrazide)," "J factor," "Krilium," "miniaturization," "printed circuit," "pyromen," "radio-carbon calendar" and "weedicide." New terms such as "ANZUS," "bamboo curtain," "Bevanism," "brain-changing," "globalist," "Manchurian fever," "rotatee," "Saceur" and "uranium curtain" reflected the international scene. The U.S. scene was represented by a number of interesting coinages in a variety of fields: for example, "ADC," "bafflegab," "cool jazz," "creepie-peepie," "cronyism," "great debate," "hot rod," "Like-Iker," "panty raid," "Pentagonese," "poodle cut," "stretch-out" and "telethon."

The words listed below became prominent or were seemingly used for the first time during 1951 and 1952. Dates within the parentheses following a word or definition indicate the first recorded use of the new word or meaning in the files of the committee.

A hyphen preceding the date means that the word or meaning is suspected of being older than the date given. If no date is given, the first record on file is 1952.

ADC. Air Defense Command.

air-watcher, n. One whose job is to search the sky for suspicious and unknown aeroplanes.

ANZUS, n. & adj. Australia, New Zealand and the United States.

Asiad, n. An athletic competition in Asia. (1951)

astragator, n. An interplanetary space traveller.

ATA. Short for the chemical aurin tricarboxylic acid, an antidote to beryllium poisoning. (1951)

atomic calendar. See radio-carbon calendar.

bafflegab, n. Wordiness and lack of clarity in federal communications; gobbledygook.

bamboo curtain. The "iron curtain" of Communist China. (1948)

Bevanism, n. Adherence to the program advanced by Aneurin Bevan, British Labour politician, which includes curtailment of rearmament, full continuance of social services, price freeze, capital levy and restriction of company profits. (1951)

Big R. Nickname for the rotation system of U.S. soldiers in Korea. (1951)

biopic, n. A biographical film. (1951)

brain-changing, n. A procedure used in some totalitarian countries in which such nonviolent means as drugs and hypnosis are employed to make

Estimated World Wool Production

(greasy shorn pounds)

Country	1952	1951
Australia	1,100,000,000	1,080,000,000
New Zealand	390,000,000	391,000,000
Argentina	420,000,000	420,000,000
Uruguay	188,000,000	180,000,000
South Africa	220,000,000	248,000,000
United States	264,000,000	259,000,000
Total	2,582,000,000	2,578,000,000
Others	1,400,000,000	1,372,000,000
Grand total	3,982,000,000	3,950,000,000*
Apparel types	3,150,000,000	3,107,000,000

*Revised.

Source: Computed by the New York Wool Exchange from data released by the U.S. Department of Commerce and the International Wool Secretariat.

an individual forget his past and to accept instead other ideas which those in power wish him to recall. (1951)

bugout, *n.* Rapid evacuation. (1950)

casual, *n.* 1. A personal essay. (1948) 2. A short story. (1951)

chogie, *n.* *Slang.* Term used by U.S. soldiers in Korea for a landmark, such as a hill.

clanks, *n. pl.* Jitters, nervousness. (1943)

controlism, *n.* The condition obtaining when the government exercises control over the economic life of a country. (1951)

cool jazz. A subtle, relaxed type of bebop music popular in 1951-52. (-1952)

Corporal E. A surface-to-surface guided missile. (1951)

crash job. A job calling for the greatest possible speed in its accomplishment.

creepie-peepie, *n.* A walkie-lookie (*q.v.*).

creeping, *adj.* Advancing by slow, hardly noticeable, yet inexorable degrees. (1942)

cronyism, *n.* The use of cronies in government work; the appointment of cronies. (1950)

deep-freeze, *v.t.* *Basketball.* To keep possession of the ball to maintain a lead by preventing an opponent from scoring. **deep-freeze**, *n.* (1948)

delist, *v.* Remove from an approved list. (1947) **delisting**, *n.* (1951)

Dilastrain, *n.* A machine for determining the fatigue of plastics and metals. (1951)

downgrade, *v.t.* To reduce, decrease, lessen. (1948)

drag, *v.* To drag one's feet. *Slang.* To delay, hinder; be reluctant. (1946) *cf.* Farmer and Henley, *Slang and Its Analogues* (1891), *s.v.* *drag*: to put on the drag (colloq.), "To ease off or go slow."

drugfastness, *n.* Immunity to a drug. (1946)

enspherement, *n.* Surrounding an enemy by transporting troops by helicopter to strategic points. (1951)

episode picture. A sequence of unrelated stories filmed under one title.

Federated Fund. An agency for the handling of various charitable contributions.

flighthouse, *n.* A ship with a fixed position, which sends out directional radio beams for aircraft. (1951)

fluid camera. A continually moving camera that follows a character and shows in detail his physical and mental conflicts. (1951)

flyaway kit. A kit which holds a 30-day supply of aeroplane parts. (1951)

Flying Boom. 1. A system of refuelling aeroplanes in flight. 2. An aeroplane used for refuelling. (1951) 3. The device connecting the tanker plane and the aeroplane to be refuelled. (1949)

Formosa Firster. A U.S. advocate of the policy of continuing to support, financially, diplomatically and militarily, the regime of Generalissimo Chiang Kai-shek. (1951)

globalist, *n.* A person who believes in the distribution of U.S. troops in various parts of the globe in defense against communism. (1951) An internationalist. **globalism**, *n.* (1943)

great debate. A widespread discussion of an important issue, especially one with sharp divisions. (1951)

groupment, *n.* A national military unit of 13,000 men.

hackie, *n.* A taxi driver. (1949)

hot rod. *Slang.* A person interested in the making and use of a "souped-up" jalopy (hot rod). (1951) **hot rodder**. (1949)

infrastructure, *n.* The total of structures within a nation or a group of nations necessary to support an army. (1950)

intoximeter, *n.* An apparatus for determining the alcoholic content of a person's breath. (1947)

isoniazid, *n.* Short for isonicotinic acid (hydrazide).

isonicotinic acid (hydrazide). An antituberculosis drug in an experimental stage.

jacketism, *n.* A book-jacket cliché. (1951)

J factor. A blood factor discovered in the serum of a Mrs. Jarrel, which it was believed might contribute to existing knowledge of cancer. (1951)

job-hopping. Shifting jobs so as to put a higher valuation on one's services.

jobineer, *n.* One who plans jobs.

Jodie, *n.* Name applied by U.S. soldiers to an imaginary civilian who flirts with their girls during their absence. (1945)

Krilium, *n.* Trademark of a light yellow synthetic powder (a polymer of polyacrylonitrile) which can build up exhausted and poor soil.

Like-Ike, *n.* (I like Ike) A supporter of Gen. Dwight D. Eisenhower. **Like-Iker**, *n.*

lupulon, *n.* An antibiotic derived from hops (*humulus lupulus*). (-1949)

Manchurian fever. An Asiatic malady whose symptoms include diarrhoea, headache, fever, chills and haemorrhages. (1951)

Marxoid, *adj.* Marxist. (1946) **Marxoidal**, *n.*

megook, *n.* Korean name for a U.S. soldier. (1951)

me-tooer, *n.* One who echoes another's views. (-1949)

miniaturization, *n.* The technique of reducing the size of equipment, especially necessary in electronics. (1949)

neobacin, *n.* A drug that combines neomycin and bacitracin, useful in ointments and in the treatment of intestinal infections. (1951)

out-compete, *v.t.* To be superior to another in competition. (1951)

panelist, *n.* A member of a discussion panel.

panty raid. A raid on a women's dormitory by male students for the purpose of obtaining panties. **panty raider**.

PAR, *n.* Initials of the national organization, Project-Adequate Roads.

paradrop, *v.t.* Drop by parachute. **para-drop**, *n.* (1950)

PAT, *n.* *Foosball.* Point after touchdown. (1949)

payvision, *n.* Subscription television. (1951)

peepie-creepie, *n.* A walkie-lookie (*q.v.*).

Pentagonese, *n.* Language of the Pentagon, *z.e.*, of the top military.

Pentagonia, *n.* Personnel of the Pentagon. (1951) **Pentagonian**, *n.* A worker in the Pentagon. (1950)

photobiography, *n.* A series of photographs covering the life of a person. (1944)

pigeonhole-parking, *n.* The parking of automobiles in tiers. (1947)

pony tail. A woman's hair-do, stylish in 1951-52. (1951)

poodle cut. A woman's hair-do, stylish in 1951-52. (1951)

printed circuit. An electrical circuit made by lithographing a thin line of metallic paint on an insulated base. (1950) **printed wire**. (1946)

profit foul. *Basketball.* A foul made intentionally to prevent the opposing side from scoring by normal throwing.

progressive strike. A labour strike that (1) adopts the hit-and-run technique or (2) progresses across the country or from company to company. (1949)

psycholinguistics, *n.* The study of the psychological problems of language. (1946)

PVP. Short for polyvinyl pyrrolidone, a synthetic blood substitute developed by I. G. Farben. (1951)

pyromen, *n.* A drug being used experimentally in infantile paralysis. (1950)

radar wall. A series of radar stations whose purpose is to detect enemies. Also called **radar fence**. (1948)

radio-carbon calendar. A sensitive device utilizing a Geiger counter, which can determine the age of substances up to 30,000 years. Also called **atomic calendar**. (1951)

R & R. Rest and recreation for U.S. soldiers in Korea. (1951)

rotatee, *n.* A U.S. soldier on rotation leave.

Saceur. Supreme Allied Commander, Europe. (1951)

Saclant. Supreme Allied Commander, Atlantic.

sciencer, *n.* A science-fiction film.

shadow town. A substitute, refuge town, to be used in time of war.

SHAPE. Supreme Headquarters, Allied Powers Europe. (1950)

shouldercade, *n.* A procession of people carrying someone on their shoulders. (1951)

sky tunnel. A designated air lane within which aeroplanes operate. (1951)

snidery, *n.* Hypocrisy, pretense.

space platform. A platform which would revolve about the earth and serve as a base for further travel into space. (1951) Also called **space station**. (1947)

SSN. Short for Submarine Nuclear, an atomic submarine. (1951)

stay-down strike. 1. A strike of miners who protest by remaining in the mine. (1948) 2. A strike of pilots who in 1952 refused to accept flying assignments.

STR. Submarine thermal reactor.

stretch-out, *n.* In the defense program, a slowing down of production by extending the period for meeting quotas; system or sequence of delays. **stretch out**, *v.*

strokelet, *n.* A minor paralytic stroke.

taxi radar. A unit for airport traffic control that extends the range of the operator.

Telecue, *n.* A Teleprompter (*q.v.*). (1951)

Teleprompter, *n.* An electronic device, in front of a speaker and visible to him but hidden from the audience, which unrolls his prepared speech, printed in large letters, as he needs it. (-1951)

telethon, n. (television+marathon) An extended television show for the purpose of raising money for some cause. (1949)

trafficator, n. Brit. An indicator on an automobile to show that the driver is going to turn. (-1951)

uranium curtain. An alleged policy of exclusion by the United States of European scientists. (1946)

walkie-lookie, n. A television hand-camera. (1946)

weedicide, n. A weed killer. (1946)

whirlybird, n. A helicopter. (1951)

zip gun. A powerful, home-made pistol. (1950)

Zoomar (lens). The trademark of a lens of such flexibility that, for example, it can make its image large or small as required. (1947)

(I. W. R.)

World Assembly for Moral Re-Armament.

More than 10,000 political and industrial leaders from America, Europe, Asia and Africa took part in the World Assembly for Moral Re-Armament in 1952. Seventy thousand people from 118 nations, including the elected leaders of 60,000,000 organized workers, had attended these assemblies since World War II.

At the turn of the year at Caux, Switz., the European headquarters of Moral Re-Armament, the leaders of Asian and middle eastern countries met with European industrial and trade union heads. In January, Miami, Fla., provided the setting for a conference of the Americas. Nineteen South American countries were represented. In June the World Assembly for Moral Re-Armament of the Nations took place at the Grand hotel, Mackinac Island, Mich., with 1,371 selected representatives of the industrial leadership of America, Europe and Asia participating. The chairmen of the U.S. senate and house foreign relations committees sent invitations to leading political figures in Europe, Africa and Asia.

The 1952 World Assembly for Moral Re-Armament at Caux was convened at the urgent request of industrial and political leaders "to demonstrate a basis for world unity, and an answer to the present political and economic crisis." Senator Alexander Wiley of Wisconsin, visiting the assembly with the senate subcommittee on escapees and refugees, reported "Ideas are working there. French and Germans are coming together. Communists are being changed. Management and labour are uniting."

European cabinet ministers, including the chairman of the North Atlantic Treaty organization, Ole Bjørn Kraft, and the west German minister for upper house affairs, Heinrich Hellwege, met at Caux to discuss a basis for European integration and especially of Franco-German understanding. They emphasized the need for an ideological basis for the unity of the west.

The ideological approach to the special problems facing industry was discussed in special industrial conferences at the World Assembly convened by European industrial leaders. *The Times* (London) emphasized the "paramount importance" placed on "the spreading of a democratic way of life that would challenge the advance of materialism and win the allegiance of millions behind the iron curtain," and "an ideology which safeguarded the moral values on which our democratic society is based"

A notable feature of the world assembly was the participation of the leaders of Africa and Asia. In response to invitations from six far eastern countries, Frank Buchman took a task force of Moral Re-Armament to Asia at the close of the conference. The prime ministers of Burma and Thailand sent special representatives to the assembly. The prime minister of Thailand summarized their convictions: "No country can survive long in these days of ideological upheaval without the practice of Moral Re-Armament principles which belong to East and West alike and to which all peoples of all races and creeds can subscribe. We shall find through Moral Re-Armament the basis of unity for South East Asia." African leaders from East, South

and West Africa stressed the significance of an ideology above race, class and colour in uniting the various elements in Africa.

(F. N. D. B.)

World Bank: see INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT.

World Council of Christian Education: see RELIGIOUS EDUCATION.

World Council of Churches: see CHRISTIAN UNITY; RELIGION.

World Health Organization. The World Health organization became a specialized agency of the United Nations on Sept. 1, 1948, when 26 countries had ratified its constitution, and by 1952 comprised 79 full member states and three associate members. From the outset, the World Health assembly, the supreme legislative organ of W.H.O., which meets annually to approve the program and budget, defined six major health problems on which the efforts of the organization were to be concentrated.

As a result, W.H.O.-assisted malaria control projects operated in 20 countries during 1952 (Afghanistan, Burma, Cambodia, Dominican Republic, Formosa, French Cameroun, Haiti, India, Indonesia, Iran, Iraq, Lebanon, Liberia, Paraguay, Philippines, Sarawak, Saudi Arabia, Syria, Vietnam and Windward Islands). For the control of tuberculosis, demonstration and training centres were operating in Ecuador, El Salvador, Jamaica, Pakistan, Turkey, Burma, Ceylon, India and Thailand in 1952, while new projects were started in Egypt, Syria, India and Indonesia. In close association with these, wherever possible, mass vaccination programs with BCG (Bacillus-Calmette Guérin) were carried out in 18 countries, with the assistance of U.N.I.C.E.F. (the United Nations International Children's Emergency Fund). In the field of venereal diseases and treponematoses, control programs by means of penicillin treatment, assisted by W.H.O., were operating during the year in Haiti, Thailand, Indonesia, the Philippines, India, Laos, Liberia, Iraq and Yugoslavia. In the six larger mass campaigns against nonvenereal treponematoses (yaws, bejel, pinta) about 6,000,000 persons were examined and 2,000,000 treated with penicillin from the inception of the programs until the middle of 1952.

Maternal and child health projects launched with the assistance of W.H.O. and, in many cases, with supplies from U.N.I.C.E.F., included the creation of the first children's hospital in Bolivia, as well as demonstration and training centres in Afghanistan, India, Burma, Thailand, Cambodia, Japan, Brazil, Colombia, Chile, Peru, Paraguay, Pakistan, Lebanon and Syria. Ten European countries, as well as Lebanon and Japan, received assistance during 1952 in the rehabilitation of physically handicapped children or the care of premature infants.

Recognizing the part played by environmental sanitation problems in the spread of communicable diseases, W.H.O. attached sanitary engineers and other experts in hygiene to many of the disease control demonstration teams in the field and organized seminars for sanitary engineers (London and Nicaragua, 1952).

While maintaining its frontal attack on these and other specific health problems, experience gained since 1948 led W.H.O. to make a change of emphasis in the method of approach. As stated by the director-general, Brock Chisholm (Canada), the objective of W.H.O. can best be attained by "assisting public health administrations (of member states) to take the next appropriate step in their development." This change of emphasis was reflected during 1952 by the appointment of public health advisers to serve at government level (four of these were requested by governments in 1952) and by an increase in the number of public health experts appointed to W.H.O. regional offices. The public health officers at regional offices assist local

public health administrators in drawing up balanced national programs of public health and advise what form W.H.O. assistance to individual countries should take. Regional committees, meeting once a year, forward proposals for inclusion in the overall program and budget of W.H.O. to the 18-member executive board. This is finally scrutinized and adopted by the annual World Health assembly held at Geneva (the W.H.O. regular budget for 1952 was \$7,700,000). (M. S. W.)

Wrestling. An armed forces squad, assembled and coached by Ray Swartz of the United States naval academy, captured the team trophy in the 62nd annual championships of the Amateur Athletic union at Cornell university, Ithaca, N.Y., April 3-5, 1952. Henry Wittenberg, New York city policeman who had been out of competition four years, returned to action and set an A.A.U. record by winning in the 191-lb. class for his eighth title. Later in the month, Wittenberg met his first setback after a string of almost 400 triumphs in amateur wrestling when he suffered an injury and lost to Dale Thomas of Marion, Ia., in the fifth round of the Olympic trials.

Other A.A.U. title winners were Sidney Nodland, Long Island Grapplers, 114.5 lb.; Jack Blubaugh, armed forces, 125.5; Josiah Henson, armed forces, 136.5; Newt Copple, Champaign, Ill., 147.5; James La Rock, New York Athletic club, 160.5; C. Shuford Swift, armed forces, 174; and Lt. Richard Clark, unattached, Rome (N.Y.) Air base, heavyweight.

Oklahoma matmen retained the team crown in the National Collegiate Athletic association tourney at Fort Collins, Colo., scoring 22 points to edge the powerful Iowa State Teachers, who tallied 21. Individual champions were: Hugh Perry, Pittsburgh, 115; Billy Borders, Oklahoma, 123; Gene Lybbert, Iowa Teachers, 130; George Layman, Oklahoma A. and M., 137; Tom Evans, Oklahoma, 147; Bill Weick, Iowa Teachers, 157; Joe Lemyre, Penn State, 167; Bentley Lyon, California, 177; Harry Lanzi, Toledo, 191; and Gene Nicks, Oklahoma A. and M., heavyweight.

Penn State, with Richard Lemyre, Joe Lemyre and Robert Homan taking individual titles, retained its team championship of the Eastern Intercollegiate Wrestling association. (See also OLYMPIC GAMES.) (T. V. H.)

Wyoming. A Rocky mountain state of the United States, Wyoming was admitted to the union on July 10, 1890, as the 44th state. The name of the state, which means "mountains and valleys alternating," was derived from the Wyoming valley in Pennsylvania. Because of its pioneer work in woman's suffrage, Wyoming became popularly known as the "Equality state."

Wyoming ranks 8th in size and 47th in population among the states. The land area is 97,506 sq.mi.; water area, 408 sq.mi. The 1950 census, which gave a total population of 290,529, a 15.9% increase from 1940, listed rural inhabitants at 145,911 or 50.2% of the population of the state and urban at 144,618, or 49.8%. The 1940 census gave the population at 250,742 and listed 229,818 native white; 950 Negro; and 17,107 foreign born.

The capital of Wyoming is Cheyenne, with a population (1950 census) of 31,935. Other cities having a population of 10,000 or more were: Casper, 23,673; Laramie, 15,581; Sheridan, 11,500; and Rock Springs, 10,857.

History.—On Aug. 2, 1952, Boysen dam, a 1,493,000-ac.ft. capacity storage dam, was dedicated. This dam, located on the Big Horn river near Thermopolis, Wyo., would provide 73,000,000 kw.hr. of power per year. Under construction for more than four years, it cost an estimated \$34,321,000.

State officials during 1952 were: governor, Frank A. Barrett; secretary of state, C. J. Rogers; state auditor, Everett T. Copen-

haver; state treasurer, Minnie A. Mitchell, who was appointed to succeed her husband, J. R. Mitchell, deceased; superintendent of public instruction, Edna B. Stolt.

Education.—In 1950-51 there were 588 elementary and rural schools in Wyoming, with 1,243 elementary teachers and 506 rural teachers and a total enrolment of 47,146. There were 89 accredited high schools with 893 teachers, and an enrolment of 14,062. State expenditures for education in 1950-51 were approximately \$16,382,931. A total of 228 school administrators were employed in the state during this period.

Social Insurance and Assistance, Public Welfare and Related Programs.—Funds spent on public welfare for the period Jan. 1, 1952, to Sept. 30, 1952, were as follows: old-age assistance \$2,131,698; aid to dependent children \$501,811; aid to the blind \$47,492; general welfare \$154,166; child welfare \$27,392; general welfare health \$245,108; aid to the permanently and totally disabled \$227,359.

There were 3 correctional institutions with 412 inmates and appropriations (for period April 1, 1951, to March 31, 1953) as follows: state penitentiary at Rawlins, 337 inmates, appropriations \$434,870, capital outlay \$10,000; girls' school at Sheridan, 30 inmates, appropriation \$189,300, capital outlay \$20,264; boys' school at Worland, 45 inmates, appropriation \$222,575, capital outlay \$8,000.

A home and hospital for the aged, the only state-owned and state-operated home of this type in the United States, was operating with a great deal of success. It was built at a cost of about \$600,000 and accommodated 70 members and staff, with additional hospital facilities for 20 persons. The appropriation for the period April 1, 1951, to March 31, 1953, was \$150,000.

Communications.—During the period Oct. 1, 1951, to Sept. 30, 1952, the Wyoming highway department let approximately 94 contracts for a total expenditure of \$9,918,862, of which 27 contracts for an amount of \$1,346,957 were for special maintenance work and 40 contracts amounting to \$1,413,078 were for state-county co-operative projects. This work was spread over a total mileage of 635,000. The highway system in Wyoming consisted of 4,734 mi., of which 1,330 mi. were secondary routes. The maintenance budget for the period Oct. 1, 1951, to Sept. 30, 1952, was set at \$2,475,000. Railroad mileage was 3,473.4. There were 36 major airports in the state and 76 flying farmer and private strips. Eight federal airways totalled 1,380 mi. There were 80,828 telephones.

Banking and Finance.—On June 30, 1951, there were 29 state banks with deposits of \$74,520,740.94 and resources of \$80,712,069.81. There were 24 national banks with deposits of \$175,503,791.18 and resources of \$187,954,559.41. There were 10 savings and loan companies with total resources of \$20,939,867. Total state receipts for the fiscal year ended Sept. 30, 1951, were \$50,190,271.33. Total disbursements for the same period were \$41,542,134.03. The bonded debt for the state on Sept. 30, 1951, was \$4,558,000.

Agriculture.—The total acreage harvested in 1952 was 1,986,000. Cash income from crops and livestock in 1950 was \$146,285,000. There were no heavy rains or snows which had an unusual effect on crops in 1952. Yields of small grains were reduced by the hot, dry weather occurring the first three weeks of June. This period in June was the driest since 1879.

Manufacturing.—According to the 1947 industrial census, the total estimated value added by manufactures was \$34,957,000. The total employment at this time was 4,285, with total wages paid amounting to \$12,291,000.

Employment.—The total labour force in Wyoming, as estimated for May

Table I.—Principal Crops of Wyoming

	Indicated 1952	1951	Average 1941-50
Corn, bu.	918,000	780,000	1,290,000
All wheat, bu.	6,800,000	6,750,000	5,468,000
Oats, bu.	4,470,000	4,694,000	4,395,000
Barley, bu.	4,140,000	4,587,000	3,962,000
All hay, tons.	1,288,000	1,255,000	1,235,000
Dry, edible beans, cwt.	783,000	728,000	1,151,000
Sugar beets, tons.	476,000	438,000	395,000
Potatoes, bu.	1,672,000	1,202,000	2,035,000

Source: U.S. Department of Agriculture.

Table II.—Number and Value of Livestock in Wyoming

	Number on farms and ranches Jan. 1, 1952	Value
Cattle	1,124,000	\$216,932,000
Hogs and pigs.	78,000	2,153,000
Stock sheep	2,049,000	73,411,000
Sheep and lambs on feed	71,000	2,160,000
Horses	72,000	35,000
Mules	1,000	1,074,000
Chickens	741,000	126,000
Turkeys	18,000	

Table III.—Mineral Production of Wyoming

(Short tons, except as noted)					
Mineral	Quantity	Value	Quantity	Value	
Clays	413,000	\$ 4,102,000	370,000	\$ 3,567,000	
Coal	6,348,000	24,049,000	6,001,000	22,972,000	
Iron ore	550,000		604,000		
Natural gas (000 cu. ft.)	62,062,000	3,724,000	50,815,000	2,820,000	
Natural gasoline (gal.)	1,058,000	3,382,000	926,000	3,248,000	
Petroleum (bbl.)	61,631,000	133,120,000	47,890,000	109,190,000	
Petroleum gases (gal.)	493,000	934,000	379,000	842,000	
Sand and gravel	1,938,000	1,251,000	2,352,000	1,913,000	
Stone	1,841,000	2,214,000	1,803,000	2,227,000	
Other minerals		4,801,000		4,219,000	
Total		\$177,577,000		\$150,998,000	

*Value included with other minerals.

1952, was about 123,100 workers, of whom about 59,600 were covered by unemployment compensation. Of the total labour force, approximately 27,000 persons were employed in agriculture, 9,700 in mining, 6,800 in contract construction, 6,300 in manufacturing, 13,100 in all types of transportation, 2,700 in utilities and communications, 2,300 in wholesale trade, 14,100 in retail trade, 2,100 in finance and real estate, 10,700 in the services, 2,100 in professions, 16,200 in all types of government, 2,000 in miscellaneous, 6,000 were self-employed and 2,000 were unemployed. (F. A. Bt.)

Mineral Production.—Table IV shows the tonnage and value of mineral commodities produced in Wyoming in 1949 and 1950, listing all items whose value exceeded \$100,000. Data for 1951 were not yet available. Wyoming ranks 16th among the states in value of mineral output, with 1.50% of the U.S. total.

X-Ray and Radiology. An outstanding technical development of 1952, described by Russell H. Morgan and Ralph E. Sturm of Johns Hopkins university, Baltimore, Md., was a practical apparatus which increased the level of brightness of the images on a conventional fluoroscopic screen by a factor of between 300 and 1,000 when used in examination of the thorax, and between 1,000 and 3,000 when used in examination of abdominal organs. Intensification of luminosity of such magnitude brought the image well within the limits of cone vision, making it visible without recourse to time-consuming and inconvenient adaptation of the eyes of the examiner to darkness. It was therefore possible to reduce the intensity of X-rays used in fluoroscopy to remarkably low levels and hence relatively safe levels for both the examiner and the subject. Thus longer periods of observation became possible, and the marked increase in brightness was expected to advance immeasurably the development of cinerointerferography. In the early stages of development the field intensified was small; the apparatus was somewhat cumbersome, bulky and expensive to produce; therefore, widespread clinical applications of the apparatus were not immediately foreseeable. Applications for teaching and demonstration work were, however, obvious.

Laurence L. Robbins and Edwin H. Land described the application of Land's one-step dry photographic processing to clinical diagnostic radiology. The operation of this process had become generally familiar through the widespread use of the Land polaroid camera, with which prints of photographs were made available within a minute or so after exposure had been made. In roentgenography, two photosensitive sheets were used: a negative one which carried an emulsion sensitive to light, and a positive one on which the positive roentgenogram was produced. The developing chemicals, in the form of a thick jelly, were contained in a capsule which was attached to an edge of the positive sheet. A special holder for this pack was equipped with rollers which applied pressure on the pack as it was withdrawn. The pressure broke the capsule, the developing jelly spread over the sheet and within one minute a dry positive roentgenogram was ready for inspection with no more labour than was necessary to extract the sheet from the pack. The diagnostic quality of the X-ray produced was remarkably good, although the dimensions of film available were only 23 by 23 cm., useful chiefly for examinations of the skull and extremities. The film and special containers were still restricted to military use, where the advantages of easy transport, daylight loading and rapid processing were obvious, especially in the field. It was expected that when the process was made available for civilian use, the chief value of the system would be in operating rooms and in emergency work.

Noted during the year were several new procedures for advancing the study of the circulation of the blood during life by extending angiographic principles to the venous system of the spleen and liver, the large venous channels of the cranium and to the large arterial channels of the abdomen, the abdominal aorta and its branches to the kidneys, spleen and other abdominal organs. Not only were abnormalities of the vessels discovered in this way, but certain abnormalities of the organs sup-

plied with, or drained of, blood by these vessels became apparent, more advantageously, it was hoped, than by any other diagnostic manoeuvre formerly used. In most of these investigations the general intention was to produce a selective opacification to X-rays of a single vessel or system of vessels, to the exclusion of others. For instance, A. M. Rappaport of the University of Toronto, Ont., studied the veins of the liver. His approach to these veins was by inserting a flexible catheter into one of the large veins (the saphenous) of a dog and manipulating its tip under the fluoroscope into the mouth of the vein he wished to inject. He then injected a solution of iodopyracet (diodrast), a complex chemical compound containing iodine, into this vein and succeeded in getting X-rays of this vessel and of the liver substance into which this vessel and its tributaries flowed. L. Leger and a group of associates in Paris, Fr., George E. Moore and R. B. Bridenbaugh of the University of Minnesota, Minneapolis, and Charles G. Childs III and a group of associates of the New York hospital-Cornell Medical centre directed efforts along similar lines in animals and in man, but injected the opacifying solution directly into the portal vein as it was exposed during various surgical operations in the abdomen. They too were able in this way to project the injected vessels and various portions of the liver on X-ray film showing structural abnormalities of the vessels as well as certain pathologic changes, such as tumours and cirrhosis in the substance of the liver.

A safe and satisfactory method of projecting the liver, the spleen, the pancreas, the adrenal glands and the substance of the kidney on X-ray film was still unknown. Howard R. Bierman, Earl R. Miller and a group of associates at the University of California medical school, Berkeley, searching for a clinical method by which the blood supply of specific abdominal organs could be projected on X-ray film, were successful in introducing long, flexible catheters into large arteries of the extremities and neck, guiding them with the fluoroscope to the aorta, thence into the smaller arteries practically anywhere in the body. In this way they were able to make the selective injections more or less as they wished, thus projecting the vessel and the organ selected on X-ray film, possibly even administering medication directly to the organ in certain situations. It was a daring approach, and it proved to be somewhat hazardous, even fatal in a few of their subjects. The method was clearly still in the experimental stage, but logical and promising.

In therapeutic radiology, the greatest interest and new work remained in the development and clinical applications of high-energy radiation from various sources such as multimillion-volt X-ray generators, betatrons, multicurie cobalt 60 and 50-gm. radium teletherapy units. These were known as supervoltage units, and while some types were increasing slowly in number, they were very expensive to procure and maintain. The literature of the year concerning these high-energy radiation units dealt largely with technique of therapy, construction problems, measurements of dosage and the immediate results of treatment. Predictions about a more favourable outlook for the patient afflicted with malignant disease were in general guarded and restrained. Apparently most of the experts in radiation therapy felt that these methods of delivering radiation of the higher-energy levels would probably not produce a much more favourable long-term outlook for the patient with cancer. It would be anticipated, however, that the best results obtained with units generally available would be maintained, but with substantial reduction in the untoward complications and unfavourable sequelae of quantities and intensities of radiation delivered by units of more moderate capacities. (See also ATOMIC ENERGY; CHEMOTHERAPY; MUNITIONS OF WAR; PHOTOGRAPHY; STANDARDS, NATIONAL BUREAU OF; TUBERCULOSIS.)

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Yachting. In a year of unprecedented activity in all departments of yachting, from ocean racing to dinghy sailing, Richard S. Nye's 46-ft. over-all yawl "Carina," from Greenwich, Conn., ranked as one of the outstanding boats of 1952 by virtue of winning the Bermuda trophy in the year's most important ocean race. To this "Carina" added, against top-rate competition, victory in class AI of the Off Soundings club cruise and class A of the Riverside-Stratford Shoal race; first place in the City Island-Cornfield Lightship race; the Navy Alumni Challenge cup on the New York Yacht club cruise; the Metcalf trophy on the Indian Harbor Yacht club cruise; and third place in the Stamford-Vineyard race.

In the Bermuda race, with "Carina" taking fleet and class C honours, the U.S. naval academy's big yawl "Royono," Lieut. Frank Siatkowski commanding, was first to finish and class A corrected time winner, and Roderick Stephens, Jr., sailing "Mustang," again won class B.

Another outstanding ocean racer, Carleton Mitchell's yawl "Caribbee," from Annapolis, Md., won the Florida Governor's trophy with a clean sweep of the three major distance races of the southern circuit—the Ft. Lauderdale-Cat Cay, Miami-Nassau and St. Petersburg-Havana races. Later in the summer "Caribbee" was first to finish the transatlantic race from Ber-

muda to England, though beaten on corrected time by the little (31-ft. over all) "Samuel Pepys," sailed by Lieut. Com. Erroll Bruce, R.N. In four subsequent starts in British waters, "Caribbee" won three first prizes, including the New York Yacht club Challenge cup in a race around the Isle of Wight.

On the Great Lakes, winners in the Pt. Huron-Mackinac race were Paul Smiley's class A sloop "Orient," fleet winner; Elmer Doyle's sloop "Sashay," class B, and Nicholas Gieb's ketch "Fleetwood," class C. "Fleetwood" also took division II in the Chicago-Mackinac race, in which "Tahuna," P. C. McNulty, won in division I. "Escapade," Wendell Anderson, won the Rochester Yacht club's race around Lake Ontario for the second year in a row. On the east coast DeCoursey Fales's veteran schooner "Nina" won the Stamford-Vineyard race for the third time in 12 years, and Gilbert Verney's new yawl "Sea Lion" won the Storm Trysail club's Block Island race.

West coast ocean racing started May 1 with 133 sail in the annual Newport Harbor, Calif.-Ensenada, Mex., race. Barney Huber's class C sloop "Mara" was a repeat winner in the Ensenada race in the Ocean Racing Rule group, while Orin Thorildsen's "Moonbeam" won the Arbitrary Handicap division. Other west coast winners included "Buoyant Girl," Harold Rosenblum, in the Farallone Islands race; "Maruffa," Jack Graham, Protection Island race; "Rebel," Douglas Sherwood, Vashon Island race; and "Ono," Herbert Day, Swiftsure race. C. P. Paschall's cutter "Revenge" won the Puget Sound Tri-Island series.

One of the big events in closed course racing was the Olympiad in Finland in which five classes competed, with U.S. yachts taking two first places and one second place. (See OLYMPIC GAMES.)

The North American Yacht Racing union held its first national senior sailing championship, in which 21 of the union's 23 member associations competed through a series of eliminations leading up to the eight-crew finals in September at Mystic Seaport, Conn., where Cornelius Shields, veteran Long Island sound skipper, emerged as the first national champion. Patricia Hinman's Manhasset Bay (L.I.) Yacht club crew took the women's national title and Martin Purcell's Indian Harbor (Conn.) Yacht club crew the junior nationals. The national intercollegiate sailing crown went to Harvard, with Charles Hoppin and James Nathanson as its skippers.

The New York Yacht club cruise brought out its largest fleet in several years, 52 sail. John Matthews' 12-m. sloop "Vim" won the King's and Astor cups, James Brickell's sloop "Starlight" the Una cup and William Ziegler, Jr.'s schooner "Bounding Home" the Cygnet cup. At the Eastern Yacht club of Marblehead, Mass., Frank C. Paine's sloop "Gypsy" won the Puritan cup and Hovey Challenge bowl, and Robert Coulson's "Finn MacCumhaill" the Commodore's and Vice-Commodore's cups.

Of the many national and international class champions crowned during 1952 one of the outstanding was Agustino Straulino, whose "Merope" won the Olympic, European and world championships for Italy. Among other skippers who took top titles in the big one-design classes were: Lightnings—Robert Graf, Buffalo, N.Y.; Comets—Phil Somervell, Riverton, N.J.; Snipes—Ted Wells, Wichita, Kan. (third time); 210s—Philip Benson, Cohasset, Mass.; Penguins—Runyon Colie, Mantoloking, N.J. (fifth time); Thistles—James Hendricksen, Sandusky, O.; 110s—Bob Mann, San Diego, Calif.; Wood Pussies—E. King Graves, Jr., Cold Spring Harbor, L.I.; L-16s—Victor Coudert, Jr., Greenwich, Conn.; Moths—(Internationals) Clai-bourne Coupland, Norfolk, Va. and (Nationals) Randall Swan, Jr., Charleston, S.C. (W. H. Tr.)



OPENING of the six-metre class 1952 Olympic yachting event near Helsinki, Fin., in which the "Lianoria" (US83, at right), owned by Herman F. Whiton of the U.S., finished first

Yellow Fever: see TROPICAL DISEASES.

Yemen. An independent state in the southwestern tip of the Arabian peninsula, Yemen lies between Saudi Arabia, Aden protectorate and the Red sea. Area: *c.* 31,000 sq.mi. Pop. (1951 est.): 1,600,000. Language: Arabic. Religion: Moslem. Capital: San'a (est. pop. 25,000). Ruler: Sayf al-Islam Ahmad ibn Yahya.

History.—In April 1952 the sultan of Lahej in the northern part of Aden protectorate fled across the border into the Yemen where he was given political asylum. He had ignored a request from the Aden government to attend an inquiry into the death of two of his cousins, the Emir Hassan Ali and the Emir Ahmed Mehdi, and to enforce its demands the Aden government had sent a military force to occupy the town of Lahej. This provoked a statement of "complete surprise and astonishment" by the Yemeni legation in London which at the time was discussing recent developments in the Lahej sultanate with the British foreign office. It expressed the view that measures taken by the Aden authorities should conform to the letter and spirit of existing treaties and that developments would be watched with close concern in the Yemen.

In May a treaty of friendship between Spain and the Yemen was signed at the Spanish embassy in Cairo, providing for diplomatic and cultural relations between the two countries.

(O. M. T.)

Finance.—Monetary unit: Maria Theresa dollar, called the riyal, nominally equal to 1 Indian rupee with an exchange rate of 13.33 riyals to the pound and 4.76 riyals to the U.S. dollar.

Foreign Trade.—Trade with the U.K. (1950): imports £4,657, exports £801. Trade with the U.S. (1950): imports \$62,674; exports \$2,273.-982. Main imports from the U.S.: machinery, cars and accessories, etc. Main exports to the U.S.: cocoa, coffee and tea, hides and skins, petroleum and products.

Agriculture.—Main crops: wheat, barley, millet and coffee.

Young Men's Christian Association: *see* SOCIETIES AND ASSOCIATIONS, U.S.

Young Women's Christian Association: *see* SOCIETIES AND ASSOCIATIONS, U.S.

Yugoslavia. A federal people's republic of southeastern Europe, Yugoslavia is bounded north by Austria, north and northeast by Hungary and Rumania, east by Bulgaria, south by Greece and west by Albania, the Adriatic sea and Italy. Area: 99,181 sq.mi. Pop.: (1948 census) 15,772,107; (Dec. 1951 est.) 16,441,000. The federal republics include:

	Population (1948)	Capital
Serbia*	6,527,969	Belgrade (389,114)
Croatia	3,756,807	Zagreb (290,667)
Slovenia	1,391,873	Ljubljana (121,050)
Bosnia and Hercegovina	2,565,283	Sarajevo (118,806)
Macedonia	1,152,986	Skopje (91,491)
Crnagora (Montenegro)	377,189	Titograd (12,272)

*Including the autonomous province of Vojvodina (pop., 1,663,216) and the autonomous region of Kosovo-Metohija (pop., 727,820).

Other towns (pop., 1948 census): Subotica (112,530); Novi Sad (77,713); Rijeka, formerly Fiume (72,928). Language: Serbo-Croat, Slovene and Macedonian; Albanian, Hungarian, Turkish, Rumanian, Italian, Bulgarian and German spoken by minorities. Religion (1948 est.): Greek Orthodox 45%, Roman Catholic 32%, Moslem 11%. President of the presidium of the people's assembly (*Skupstina*): Ivan Ribar; vice-presidents: Mosa Pijade (Serbia), Filip Lakus (Croatia), Josip Rus (Slovenia), Djuro Pucar (Bosnia and Hercegovina), Marko Vujacic (Crnagora) and Dimitar Vlahov (Macedonia); prime minister: Marshal Tito (Josip Brozovich) (*q.v.*).

History.—During 1952 the government made considerable concessions to the peasants. On June 7 it was announced that compulsory deliveries of cereals to the state had been abolished. In speeches at Nis and Glina in July, Marshal Tito stressed that the development of collective farms must depend on local conditions. In the great fertile plains, he maintained, individual

peasant holdings were an obstacle to production: collectivization was the best policy. In areas where conditions of production did not suit collectivization, other forms of co-operation could be devised. In some areas it might even be found that no co-operatives at all were needed. The practical execution of this new and less doctrinaire policy was not yet clear. In some regions collective farms were actually disbanded. Where collective farms were preserved, the situation of their members was made easier. In particular, the collective farm was to pay a rent, varying from 15% to 30% of the value of the land, for land brought into it by member households. Official statements stressed that Yugoslav collective farms were coming to differ more and more from soviet kolkhozes. The abolition of compulsory deliveries was certainly welcome to the peasants. Its effect was reduced however by the high cost of transport and the effective monopoly in the hands of the authorities of all trade in farm produce. In many areas the cost of transport made it difficult for the peasant to take or send his produce to the larger markets. The absence of competition between individual traders for his produce prevented him from making use of a basically favourable economic situation. The government shops were able in effect to dictate prices which, if better than those granted in the days of compulsory deliveries, were still much lower than a genuinely free market would give.

Relations between government and religious communities continued to be uneasy. As before, the Catholic Church was the main target of official denunciations. The hierarchy was accused of sympathy with reactionaries and the Vatican of support to Italian policy. The opposition of the hierarchy to a government scheme for associations of priests, which were to have the same rights of social insurance as workers' and professional associations, also incurred official indignation. Marshal Tito's own views on religion were clearly stated in an interview to university students on March 14. The eradication of religious sentiment, the marshal said, was bound to be a long process, facilitated by political education and economic progress. Meanwhile "we cannot allow our youth to be corrupted under the cloak of religion."

During the year there was much discussion in the official press of a proposed new constitution. In April a law for the reorganization of people's committees (organs of provincial, municipal and local government, originally modelled on the soviets of the 1936 Stalin constitution) was passed by the central parliament. Under this law the committees were to be bicameral. They were to consist of an assembly of citizens, of 20 to 70 members, depending on the size of the locality, and a council of producers, elected by industrial and agricultural workers from economic enterprises and agricultural associations, numbering half as many persons as the assemblies. Instead of departments of local government, there were to be councils of persons elected by the committees. The permanent salaried personnel employed by the departments was to be drastically reduced.

This reform of local government was to be followed by a similar reform of central government. This was discussed at length, but by October had not yet been enacted. The parliament was to remain bicameral. The first chamber, the federal council, would as previously be elected by the population as a whole, by territorial constituencies. The present second chamber, the council of nationalities, would be replaced by a council of producers. The representation of nationalities as such was to be safeguarded by a provision that, when a change in the constitution or a matter affecting the relations between the constituent republics and the central government was under discussion, a special group of deputies should be formed—12 from each republic, 7 from the Vojvodina autonomous province and 4 from the Kosovo-Metohija autonomous region—which should vote

separately from the 2 chambers. The council of producers was to be elected by workers in their enterprises and by agricultural associations. The latter term included not only collective farms but also the looser co-operatives of which individual peasant farmers were members. It seemed probable that the collective farmers were somewhat overrepresented among the agricultural population, and it was certain that the agricultural population as a whole was to be very much underrepresented. Whereas about 70% of the population of Yugoslavia was engaged in agriculture, about 40% of the seats in the council of producers would be granted to peasants.

The cabinet was to be abolished and replaced by a presidium elected from the members of the parliament. The president of the presidium would be both head of state and chief of the government. There could be no doubt that this office was reserved for Marshal Tito. The presidium would set up committees of its members, to deal with foreign affairs, internal affairs, economic and social policy, education and culture. These committees would issue directives to subordinate state secretariats, which would be the executive organs. The aim of these changes was said to be to dissociate political leadership from administrative routine. The presidium would be a policy-planning brain trust, responsible to parliament. The state secretariats, which would be the old ministries under a new name, would carry out orders but would not interfere in policy.

This ambitious constitutional reform must be related to the fact that a monopoly of political power remained in the hands of the Communist party. The effects both of the economic decentralization which took place in 1951 and of the new form of popular representation now being prepared were limited by the continued supremacy of the party. Key posts in factory councils, people's committees and the presidium of the parliament would, as before, be held by members or nominees of the Communist party, although the available evidence suggested that both economic and political administration were in fact being entrusted rather to experts than to the earlier type of party demagogue. But the task of distinguishing between leadership and administration was not easy.

During the year Yugoslav trade with the west continued to be considerable. The largest single client, both for exports and for imports, was the German Federal Republic.

Marshal Tito continued to express his desire for the best relations with the west, but continued to oppose any formal treaty commitments. Relations with Greece and Turkey improved. Tokens were the visit to Yugoslavia of a Greek parliamentary delegation in July and of a group of Turkish journalists in August. The Austrian foreign minister, Karl Gruber, paid an official visit in July. Relations with Italy were still dominated by the conflict over Trieste. During April and May there were demonstrations and agitation against Italy. The Yugoslav press devoted much attention to the Trieste question and to the activities of extreme nationalist groups in Italy.

(See also TRIESTE, THE FREE TERRITORY OF.) (H. S.-W.)

Education.—Schools (1950-51): elementary 13,031, pupils 1,524,987, teachers 26,899; secondary 1,696, pupils 485,876, teachers 14,198; teachers' colleges 75, pupils 27,300, teachers 1,214; technical 1,449, pupils 193,478, teachers 18,690; art, musical and dramatic 142, students 18,426, teachers 1,775; workers' educational colleges 109, pupils 7,837. Institutions of higher education: 88 faculties, academies and high schools, students 60,395, professors and lecturers 5,406. Schools for national minorities (1950-51; including Albanian in parentheses): elementary 1,502 (830), secondary 251 (89), teachers' colleges 10 (3).

Finance and Banking.—Budget: (1951) balanced at 172,662,000,000 dinars. Currency circulation (June 1952): 40,150,000,000 dinars. Bank deposits (June 1952): 126,330,000,000 dinars. Monetary unit: dinar with an official exchange rate of 840 dinars to the pound and 300 dinars to the U.S. dollar.

Foreign Trade.—(1950) Imports 11,784,000,000 dinars, exports 7,932,000,000 dinars; (1951) imports 12,108,000,000 dinars, exports 9,180,000,000 dinars. Main sources of imports (1951): U.S. 38%; German Federal Republic 11%; Italy 9%; U.K. 4%. Main destinations of exports: U.K. 18%; German Federal Republic 17%; U.S. 15%; Italy

12%. Main imports (1951): food 23%; machinery and vehicles 21%; textiles 18%; fuels 8%. Main exports: ores, metals and products 31%; timber and products 29%; agricultural products 25%.

Transport and Communications.—Roads (1950): 46,256 km., incl. 2,318 km. metalled. Licensed motor vehicles (Dec. 1950): cars 12,000, commercial 20,000. Railways (1949): 11,448 km.; freight traffic (1951) 8,700,000 ton-kilometres. Shipping (merchant vessels owned more than 100 gross tons, Dec. 1950): 126, total gross tonnage 222,825. Air transport (1949), home services (international services in parentheses): kilometres flown 564,125 (225,655); passengers carried 25,644 (1,564). Telephones (1949): 74,994 subscribers. Radio receiving set licences (Dec. 1949): 299,055.

Agriculture.—Main crops (metric tons, 1951): wheat 2,277,000; barley 359,000; oats 293,000; rye 277,000; maize 4,033,000; potatoes 1,621,000; sugar beets 1,902,000; tobacco (1950) 17,000; dry beans 113,000; cotton lint 4,000; hemp fibre 30,000; flax fibre 3,400; cottonseed 9,000; linseed 4,000; rapeseed 8,000; sunflower seed 94,000. Sugar, raw value (1951) 175,000 tons. Livestock (1951): cattle 4,730,000; sheep 10,274,000; goats (1950) 786,000; pigs 3,910,000; horses 1,095,000; asses 152,000; mules 32,000; chickens 14,980,000; ducks 789,000; geese 873,000. Wool production, greasy basis (1951) 10,000 metric tons. Wine production (1951) 5,160,000 hl.

Industry.—Manufacturing establishments (1948): 1,042, persons employed 254,000 wage earners and 74,300 salaried staff. Fuel and power (metric tons, 1951): coal 996,000; lignite 11,052,000; crude petroleum 156,000; electricity (1951) 2,544,000,000 kw.hr. Raw materials (metric tons, 1951): pig iron 262,800; crude steel 433,200; copper, smelter 32,400; lead, smelter 60,000; zinc, smelter 13,200; aluminum 2,900. Timber production (1950): sawn softwood 453,700 standards; sawn hardwood 635,900 cu.m. Manufactured goods (metric tons, 1951): cement 1,164,000; cotton yarn 26,900; wool yarn 13,400; woven cotton fabrics 122,800,000 sq.m.

Yukon Territory. The most northwesterly political division of Canada, the Yukon was created in 1908. Area: 207,076 sq.mi. Pop.: (1951) 9,096. Capital: Whitehorse; pop. (1951) 2,548.

History.—A new map of southeastern Yukon was issued in Aug. 1952; many of the lakes, mountains and creeks in the area were named after Canadians killed in action in World War II. Early in 1952, after a major military camp had been created at mile 165 on the Alaska highway south of the Yukon-Alaska boundary, the largest and longest military training exercise carried out in the Canadian north was conducted. It lasted six months, was called Exercise "Eager Beaver," and tested the abilities of Canadian and United States military engineers. Working under severe Arctic winter conditions and spring thaws, the troops tested equipment, airstrip construction methods, snow compaction problems, construction of field defenses, demolitions and cold weather administrative problems.

Education.—During the 1949-50 school year the Yukon territorial government maintained 10 schools, with 31 teachers and more than 700 pupils; the Indian affairs branch of the federal government maintained 7 schools, with 12 teachers and 234 pupils; the Roman Catholic church two separate schools with 4 teachers and 118 pupils.

Finance.—In the 1950-51 fiscal year the federal government collected revenue in the Yukon totalling \$1,846,793, and expended \$5,626,640 for administration and development.

Transportation.—Traffic during 1952 on the Alaska highway was double that of 1951. Canadian Pacific airlines operated frequent service from both Vancouver and Edmonton to Whitehorse and regular twice-weekly flights from Whitehorse to Mayo and Dawson. Pan-American World Airways provided service between Seattle and Whitehorse on the Seattle-Fairbanks flight. Traffic on the river system during 1951 involved 8.751 tons of freight and 4,821 passengers (1949: 22,696 tons, 8,713 passengers).

Furs.—Raw furs exported from the Yukon during the year ended July 31, 1951, totalled 228,616 pelts of which squirrel accounted for 145,355 pelts and muskrat 70,786. There were 2,663 beaver and 2,045 marten pelts.

Industry.—In Aug. 1952 the Aluminum Company of America announced plans to build a \$400,000,000 aluminum plant with an annual capacity of 200,000 tons in the Taiya valley near Skagway, Alaska, using water from five Yukon and British Columbian lakes and from the Yukon river to generate hydroelectric power. The Canadian government had not, by Oct. 31, 1952, made any official comment on the proposed project, which would involve a large dam on the Yukon below Whitehorse.

Minerals.—Mineral production for 1950 was valued at \$8,035,696, and included 93,339 fine oz. of gold (worth \$3,500,000), 3,202,779 fine oz. of silver (\$2,500,000), and 12,865,518 lb. of lead (\$1,900,000). In the year 1946 total mineral production was valued at \$1,700,000. (C. Cy.)

Zanzibar: see BRITISH EAST AFRICA.

Zinc. The zinc outputs of the major producing countries of the world are shown in Table I, as reported by the U.S. bureau of mines.

Table I.—World Smelter Production of Zinc

(In thousands of short tons)

	1945	1946	1947	1948	1949	1950	1951
Australia	93.8	85.4	77.7	91.1	90.7	93.4	86.3
Belgium	12.9	95.0	1146.7	169.6	194.6	195.4	221.4
Canada	183.3	185.7	172.9	196.5	206.0	205.0	219.2
France	9.3	33.5	50.7	61.2	66.8	78.8	82.2
Germany	2	31.3	22.8	45.6	95.8	124.3	155.0
Great Britain	69.5	73.4	76.5	80.6	71.8	78.7	78.1
Italy	1.7	17.3	25.1	29.1	29.3	42.0	52.1
Japan	20.4	12.4	16.4	23.4	35.6	54.0	62.1
Mexico	54.0	46.3	62.5	53.2	59.0	59.0	58.0
Netherlands		2.2	10.5	15.0	17.2	21.8	24.9
Northern Rhodesia	17.1	19.2	23.7	24.8	25.6	25.4	25.3
Norway	10.2	33.3	38.1	46.3	45.2	48.5	44.3
Poland	40.1	62.4	79.1	96.0	94.2	95.2	95.2
Spain	19.1	19.4	21.8	23.4	21.6	24.5	23.4
United States	764.6	772.4	802.5	787.8	814.8	843.5	881.6
Total	1,400	1,550	1,760	1,870	2,000	2,140	2,350

United States.—Mine production increased by 8% in 1951 compared with 1950, and continued to advance in 1952, reaching a total of 460,444 tons in the first eight months. Smelter output was 566,730 tons in the first seven months of 1952, an increase of 4% over the same period of 1951, and shipments dropped to 491,712 tons, permitting appreciable additions to smelter stocks, especially in June and July. Consumption during this period was even lower, at 444,914 tons with a corresponding increase in consumer stocks. Imports through July totalled 261,610 tons in ore and 52,800 tons of slab zinc, while exports of slab zinc were 39,573 tons—all sharp advances over the 1951 rate.

Table II.—Data of Zinc Industry in the U.S.

(In thousands of short tons)

	1945	1946	1947	1948	1949	1950	1951
Mine production	614.4	574.8	637.6	630.0	593.2	623.4	671.5
Smelter production	764.6	772.4	802.5	787.8	814.8	843.5	881.6
Domestic ores	467.1	459.2	510.1	538.0	591.5	588.3	621.8
Foreign ores	297.5	269.1	292.4	249.8	223.3	255.2	259.8
Imports	478.8	376.8	370.3	357.4	367.8	434.5	391.0
In ore	381.7	272.1	298.0	264.2	241.2	278.6	303.0
Metal	97.1	104.7	72.3	93.2	126.9	156.0	88.0
Secondary recovery	360.4	300.7	310.8	324.6	237.8	326.0	
Stocks	328.6	269.2	149.3	116.7	176.0	73.1	72.1
Producers'	256.2	176.2	68.6	20.8	94.2	8.9	22.0
Consumers'	72.4	93.0	80.8	95.9	81.8	64.2	50.1
Consumption	852.3	801.2	786.4	817.7	711.8	967.1	934.0

Canada.—Zinc production was 178,786 tons in the first half of 1952, against 161,518 in the same period of 1951.

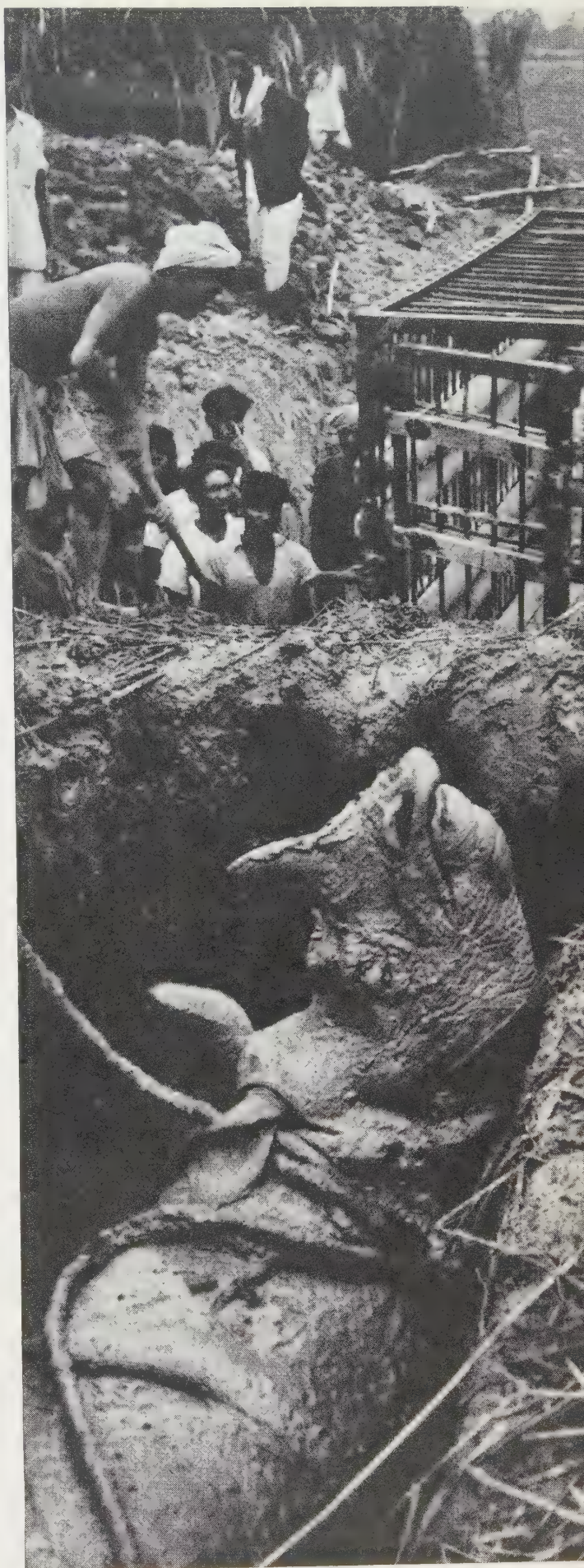
(G. A. Ro.)

Zionist Organization of America: see SOCIETIES AND ASSOCIATIONS, U.S.

Zonta International: see SOCIETIES AND ASSOCIATIONS, U.S.

Zoology. Behaviour.—The revival of interest in behaviour and instincts of animals in recent years, especially in continental Europe, had led to much research and to sufficient distinctness in aim and method to mark out a special field of biology, namely, ethology. One of the most active investigators, N. Tinbergen, summarized much of the work in a book which was of interest to both amateur and professional biologists and psychologists. A single example of his approach to the study must suffice. What external stimulus or sign leads a male stickleback in breeding condition to assume the fighting posture—head in the sand and body vertical—when confronted with another male in the same condition? That the stimulus was visual could be shown by demonstrating that such a fish would react in a similar way to its own image in a mirror. Male sticklebacks during the breeding season (and only then) differ from females in being coloured red on the lower half of the body. Is the effective stimulus form or colour or both? It was shown that males did not react to accurate models of other males unless they had the red coloration. Furthermore crude, unfishlike models, if appropriately coloured, set off the fighting reaction.

ONE-HORNED INDIAN RHINOCEROS, captured in Assam, India, tossing in its pit trap before being transferred to a cage. Because the animals were comparatively rare in 1952, the government of Assam permitted only occasional hunting of them for zoos



Hence, it could be concluded that red colour properly placed in an object was the effective stimulus. Similar experiments on "recognition" were reported for moths and their mates and passerine birds and hawks, to mention only a few of the many examples that Tinbergen brought together.

Ecology.—Recent increases in knowledge of the biology of the oyster (fecundity, spawning, fertility, embryology, pelagic life, setting, growth, feeding and so on) were reviewed by P. Korringa. L. Bels reported the results of a 15-year program of banding bats in the Netherlands. More than 17,000 individuals of 14 species were banded either while hibernating in caves or when emerging from their nursing colonies. The most extensive migration recorded was by bats of the species *Nyctalus noctula*, which were recovered as far as 429 km. (286 mi.) from their place of birth. Members of the same species also set the record in homing experiments, returning to their home caves from a distance of 185 km. (115 mi.). As was expected, the percentage of bats recovered fell off with the passage of time. The maximal period of recovery was 13 years for *Myotis myotis* and 13½ years for *Rhinobolus ferrum-equinum*. This gives an indication of the longevity of these species, but obviously not the maximal attainable age.

Two characteristics commonly used in separating races and subspecies in fishes are the number of rays in the fins and the total number of vertebrae. A. Vedel Taning pointed out that such studies face hitherto unsuspected difficulties, for these numbers vary with the temperature during development of the young. His experiments showed that young sea trout developed the minimal number of vertebrae when they were kept at a temperature of 6° C. and a minimal number of fin rays at 8° to 10° C. In either case higher or lower temperatures brought about an increase in the number of these elements. He further showed that the most sensitive period—the time when these numbers were determined and the time when temperature was effective—was at an early stage shortly before the eyes were well developed. Temperature differences had little effect at other stages in early development, but an increase or decrease of 3° to 6° C. at the sensitive period led to an average increase of 1.5 in the number of vertebrae.

Embryology.—R. Briggs and T. J. King succeeded in transplanting living nucleuses from frog embryos in blastula or early gastrula stages to eggs from which the nucleuses had been removed—a notable technical achievement and one which opened up the possibility of many new experiments on the role of the nucleus in embryonic differentiation. More than half of the eggs with a substitute nucleus underwent cell division and some developed into normal tadpoles, thus showing that at least up to the early gastrula stage (several hundred cells) the nucleuses were still completely equivalent to one another and to the egg nucleus or, to express it differently, that the nucleuses had not become qualitatively different from one another.

Since the studies by W. Heape in 1890, it had been known that rabbit eggs could develop normally when transplanted to the uterus of a properly prepared nonpregnant doe (foster mother). Modern transportation made possible an extension of this technique that it was believed might have implications for agriculture and medicine. W. G. R. Marden and M. C. Chang reported that rabbit eggs, which were fertilized in Massachusetts, then removed from their mothers at an early stage, were shipped in thermos jugs by air and rail to Cambridge, Eng. The eggs were then transplanted to the uteri of foster mothers. Ten per cent of them underwent normal development and birth.

W. S. Bullough, studying isolated mammalian epidermis, showed that the rate of cell division (mitosis) was directly related to the amount of oxygen and energy-bearing compounds available. Further, energy was needed for the initiation of mito-

sis, but not for its completion. The process, once begun, continued even under adverse conditions of energy supply and thus was "a perfect example of an all-or-none reaction."

Monographs and Comprehensive Studies.—Under the editorship of M. Hartmann, comprehensive reviews of zoological research from 1944 to 1950 were prepared by specialists. The fields covered gave some indication of the structure of zoology: morphology, systematic zoology and evolution, comparative physiology, metabolism and energy exchange, developmental physiology and morphogenesis and ecology.

The most important modern encyclopaedic treatment of animals, edited by Pierre-P. Grassé, was continued by publication of part one of the first volume (the sixth volume in order of publication). The introduction was a masterly article on evolution by L. Cuénot, followed by the editor's treatment of all aspects of the modern study of the protozoa. Two groups of protozoa were considered, the flagellates and rhizopods (treated as one group, the *Rhizoflagellata*).

L. Gedda published a lavishly illustrated and compendious study of twinning in plants, animals and man. It took its place as the most comprehensive treatment of the subject. Its bibliography of more than 5,200 titles made it of value to specialists.

General.—L. von Bertalanffy published an important book on theoretical biology in which he further developed the organismic concept and extended his own general system theory. His treatment of organisms as open systems that maintain a steady state by constant expenditure of energy was of special interest to physicists and physiologists.

N. J. Berrill's beautifully written and authoritative *Journey Into Wonder* used the explorations of South America as a framework for natural history writing in the finest tradition of the genre. (See also ENDOCRINOLOGY; GENETICS; MARINE BIOLOGY; PALEONTOLOGY; PHYSIOLOGY.)

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Zoological Parks.—The zoo in Pretoria, U. of S. Af., received from the Zululand reserve a female square-mouth rhinoceros as a mate for a male secured three years before; this was the first pair of the very rare southern race to be shown in captivity.

The Zoological Society of Antwerp, Belg., published, in French and English, Walter Van den Bergh's paper, *The Museum of Living Animals*, a valuable and concise prospectus on the founding, building and conducting of a zoological park. Architects for the zoo at Basle, Switz., designed a house for giraffe, which, in addition to the usual heated quarters and the adjoining outdoor paddock, had an intermediate unheated stall or corridor with skylights and glazed vertical walls on the paddock side in the manner of a portico. This solar heated enclosure was considerably larger and less expensive to build than the typical indoor stall, and could be used in all but the coldest weather. A new and beautifully landscaped zoo, open the year around, was constructed on the exhibition grounds at Naples, It. Additions to U.S. collections were meagre. The New Zealand government, however, presented each of the societies in New York, Brookfield, Ill., and San Diego, Calif., with a tuatara.

Axel Reventlow, Copenhagen, Den., was chosen as president of the International Union of Directors of Zoological Gardens; Frank McInnis, Royal Oak, Mich., was elected president of the American Association of Zoological Parks and Aquariums.

(Ro. B.)

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